1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Sr. No.	Particular
1.	Measures initiated by the Institution for the promotion of gender equity
2.	Green campus initiatives by the Institution
3.	Soft skills enhancement initiatives by the Institution
4.	Language and Communication skills enhancement initiatives by the Institution
5.	NSS activities by the Institution
6.	Faculty Development towards Universal Human Values (UHV) initiative of AICTE
7.	Curriculum of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Measures initiated by the Institution for the promotion of gender equity

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Date: 13/06/2019

Annual Gender Sensitization Action Plan

A.Y. 2019-20

Title of the program	Date
A guidance session on "Anti-Ragging" (T.E.)	17/06/2019
A guidance session on "Anti-Ragging" (B.E.)	25/07/2019
A guidance session on "Anti-Ragging" (S.E.)	06/11/2019
A guidance session on "Anti-Ragging" (F.Y.)	06/11/2019
Savitribai Phule Jayanti (Girls Hostel)	03/01/2020
International Women's day	08/03/2020

COLLEGE OF ENGINEERING PANDHARPUR

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal. - Pandharpur- 413 304, Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail: coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and, **NAAC**, Accredited Institute.
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

A Report on: Anti-Ragging Awareness Sessions (2019-20)

Our college has organized an 'Anti-Ragging Awareness session' for all the students of the college. The 'Anti-Ragging Awareness Session' aimed at making students aware of the laws of the country with respect to ragging and how it affects the lives of people victimized by it. The sessions on awareness about Maharashtra Prohibition of Ragging Act, 1999 were conducted by Dean Students Dr. A. A. Utpat and Prof. Y. M. Khedkar for all students in the International Conference Hall as per below schedule.

Class	Date	Time
T.E (All Branches)	17/06/2019	01:30 PM
B.E (All Branches)	25/07/2019	02:30 PM
F.Y (All Branches)	06/11/2019	02:00 PM
S.E. (All Branches)	06/11/2019	02:00 PM

The sessions were addressed by Honorable Principal Dr. B. P. Ronge Sir. During these sessions speakers highlighted the objectives mentioned by AICTE on Anti-ragging and then elaborated on Maharashtra Prohibition of Ragging Act, 1999, the punishable offences and punishments according to the law along with measures taken to curb the menace of ragging among the students in the college campus. All sessions were concluded by asking students to take a pledge to ensure ragging free campus and to be disciplined. All subject teachers and concerned class coordinators were present for the session.

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Krantijyoti Savitribai Phule Jayanti

Day and Date:	Friday, 03/01/2020
Time:	6.00 PM
Venue:	Girls' Hostel, SVERI's COE, Pandharpur.
Total Number of Students:	All Girl Students
Faculty	All Ladies Staff

Every year, January 3rd is celebrated as Savitribai Phule Jayanti to honor her contribution towards society, education and women empowerment. Our college has celebrated Savitribai Phule Jayanti on 3rd January, 2020 at Girls' Hostel. During the event, chief guest Dr. Nishigandha Kolhe-Mali (Ex. Z. P. President, Solapur) delivered speech and said that by getting to know Krantijyoti Savitribai Phule better, by understanding her struggles and hardships, we will be looking into a life that not only changed the face of education in India but also enlightened humanity in its real essence. The event took place in the presence of Campus In-charge Prof. M. M. Pawar who welcomed and introduced the guest of the day. He said that Krantijyoti Savitribai Phule dedicated her life for spreading education and knowledge. Prof. Dr. A. A. Utpat proposed the vote of thanks.

Lamp Lighting by Chief Guest Dr. Nishigandha Mali

Guidance by Chief Guest Dr. Nishigandha Mali

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal. - Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail: coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and, **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

International Women's Day

Day and Date:	Sunday, 08/03/2020
Time:	10.00 AM
Venue:	Open Amphitheatre, SVERI's COE, Pandharpur.
Total Number of Students:	All
Faculty	All teaching & Non-teaching Staff

International Women's Day is celebrated worldwide annually on March 8th to honor the cultural, political and socioeconomic achievements of women. Our college has celebrated the International Women's Day on 8th March, 2020 at open amphitheater. During this event, Chief Guest Ms. Swati Chaphale (HR), Master Chemical Corporation delivered speech. She said that women have a fierce and robust spirit which makes them excel in their respective areas. They deserve all the love and support that the world gives them. Another Guest Ms. Padmja Huparikar said that the contribution of women in every sphere of life is massive. The Guest of Honor Mr. Dayanand Gawade (P.I. Pandharpur City Police Station) enlightened about women empowerment. The event took place in the presence of Founder Secretary of SVERI and Principal Hon. Dr. B. P. Ronge who welcomed and introduced the guests of the day. During his speech, he said that society gets benefitted when women are treated with respect. Prof. Y.M. Khedkar proposed the vote of thanks. The event was effectively coordinated by Prof. Karan B. Patil.

Welcome address by Principal Dr. B. P. Ronge

Lamp Lighting by All Guests

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Date: 09/06/2018

Annual Gender Sensitization Action Plan

A.Y. 2018-19

Title of the Program	Date
A Guidance session on "Anti-Ragging" (T.E.)	29/06/2018
A Guidance session on "Anti-Ragging" (B.E.)	18/07/2018
A Guidance session on "Anti-Ragging" (F.Y.)	11/08/2018
A Guidance session on "Anti-Ragging" (S.Y.)	11/08/2018
Savitribai Phule Jayanti (Girls' Hostel)	03/01/2019
International Women's Day	08/03/2019
Mission Sahasi	09/03/2019

COLLEGE OF ENGINEERING PANDHARPUR

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal. - Pandharpur- 413 304, Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail: coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and, **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

A Report on: Anti-Ragging Awareness Sessions (2018-19)

Our college has organized an 'Anti-Ragging Awareness session' for all the students of the college. The 'Anti-Ragging Awareness Session' aimed at making students aware of the laws of the country with respect to ragging and how it affects the lives of people victimized by it. The sessions on awareness about Maharashtra Prohibition of Ragging Act, 1999 were conducted by Dean Students Dr. A. A. Utpat and Prof. Y. M. Khedkar for all students in the International Conference Hall as per below schedule.

Class	Date	Time
T.E (All Branches)	29/06/2018	02:30 PM
B.E (All Branches)	18/07/2018	01:00 PM
F.Y (All Branches)	11/08/2018	01:30 PM
S.E. (All Branches)	11/08/2018	01:30 PM

During these sessions speakers highlighted the objectives mentioned by AICTE on Anti-ragging and then elaborated on Maharashtra Prohibition of Ragging Act, 1999, the punishable offences and punishments according to the law along with measures taken to curb the menace of ragging among the students in the college campus. All sessions were concluded by asking students to take a pledge to ensure ragging free campus and to be disciplined. All subject teachers and concerned class coordinators were present for the session.

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Krantijyoti Savitribai Phule Jayanti

Day and Date:	**Thursday, 03/01/2019**
Time:	**6.00 PM**
Venue:	**Girls' Hostel, SVERI's COE, Pandharpur**
Total Number of Students:	**All Girl Students**
Faculty	**All Ladies Staff**

Every year, January 3rd is celebrated as Savitribai Phule Jayanti to honor her contribution towards society, women empowerment and education. Our college has celebrated Savitribai Phule Jayanti on 3rd January, 2019 at Girls' Hostel. During the event, Chief Guest Mr. Dhananjay Jadhav (P. I. Pandharpur Gramin Police Station) delivered speech that Krantijyoti Savitribai Phule wrote poems in Marathi in which she advocated for values such as humanism, liberty, equality, brotherhood, rationalism and the importance of education among others. Campus In-charge Prof. M. M. Pawar welcomed and introduced the guest of the day. The event took place in the presence of Founder Secretary and Principal Hon. Dr. B. P. Ronge, who said that noble work of Krantijyoti Savitribai Phule marks the beginning of modern Indian women's public life in India. Prof. Dr. A. A. Utpat proposed the vote of thanks.

Lamp Lighting ceremony by Chief Guest Mr. Dhananjay Jadhav (PI)

Guidance by Chief Guest Mr. Dhananjay Jadhav (PI)

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal. - Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail: coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and, **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

International Women's Day

Day and Date:	Friday, 08/03/2019
Time:	10.00 AM
Venue:	Open Amphitheatre, SVERI's COE, Pandharpur.
Total Number of Students:	All
Faculty	All teaching & Non-teaching Staff

International Women's Day is celebrated worldwide annually on March 8th to honor the cultural, political and socioeconomic achievements of women. Our college has celebrated the International Women's Day on 8th March, 2019 at open amphitheater. During the event, Chief Guest Hon. Dr. N. K. Thakre said that it is important to raise awareness about women's rights and gender equality. He also mentioned that it should be considered a day where everyone acknowledges the value and the importance of women in our lives and all around the world. The event took place in the presence of Founder Secretary, SVERI and Principal Hon. Dr. B. P. Ronge, who welcomed and introduced the guest of the day. He also said that empowering women is a big responsibility but it's also vital for gender equality. Prof. Y.M. Khedkar proposed the vote of thanks. The event was successfully coordinated by Prof. Karan B. Patil.

Lamp Lighting by Chief Guest Dr. N. K. Thakre

Guidance by Chief Guest Dr. N. K. Thakre

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Mission Sahasi

Day and Date: Saturday, 09/03/2019
Time: 10.00 PM
Venue: College Ground, SVERI's COE, Pandharpur.
Total Number of Students: All Girl Students

Institute has taken initiative to conduct **Mission Sahasi** a Session on Self-defense for girl students in SVERI's College of Engineering, Pandharpur in association with Akhil Bhartiy Vidyarthi Parishad (ABVP). College has conducted the event Mission Sahasi on 9th March 2019 for women empowerment and self protection. For this event, Z.P. Member Mrs. Jyotitai Patil and International Judo player Ms. Bhuvaneshwari Jadhav were invited as the Chief Guests. In this event the girl students were trained for use the keychain, dupatta, shoes, pen, mobile, stones etc. for self-defense. Formal training of self-defense techniques including the training of Judo or Karate and basic defensive techniques were taught to girl students. This event raised self-confidence and self-esteem among the girl students. The event was effectively coordinated by Prof. Karan B. Patil.

Lamp Lighting by Chief Guest Mrs. Jyotitai Patil

Training of self-defense techniques

Event Coordinator

Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Date: 01/05/2017

Annual Gender Sensitization Action Plan

A.Y. 2017-18

Title of the program	Date
A guidance session on "Anti-Ragging"(S.E.)	15/06/2017
A guidance session on "Anti-Ragging"(T.E.)	06/07/2017
A guidance session on "Anti-Ragging" (B.E.)	06/07/2017
A guidance session on "Anti-Ragging" (F.Y.)	09/09/2017
Savitribai Phule Jayanti (Girls Hostel)	03/01/2018
International Women's day	08/03/2018
Mission Sahasi	14/03/2018

COLLEGE OF ENGINEERING PANDHARPUR

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

A Report on: Anti-Ragging Awareness Sessions (2017-18)

Our college has organized an 'Anti-Ragging Awareness session' for all the students of the college. The 'Anti-Ragging Awareness Session' aimed at making students aware of the laws of the country with respect to ragging and how it affects the lives of people victimized by it. The sessions on awareness about Maharashtra Prohibition of Ragging Act, 1999 were conducted by Dean Students Prof. S. R. Gawali and Prof. Y. M. Khedkar for all students in the International Conference Hall as per below schedule.

Class	Date	Time
S.E (All Branches)	15/06/2017	02:00 PM
T.E (All Branches)	06/07/2017	02:30 PM
B.E (All Branches)	06/07/2017	02:00 PM
F.Y. (All Branches)	09/09/2017	02:00 PM

During these sessions speakers highlighted the objectives mentioned by AICTE on Anti-ragging and then elaborated on Maharashtra Prohibition of Ragging Act, 1999, the punishable offences and punishments according to the law along with measures taken to curb the menace of ragging among the students in the college campus. All sessions were concluded by asking students to take a pledge to ensure ragging free campus and to be disciplined. All subject teachers and concerned class coordinators were present for the session.

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Krantijyoti Savitribai Phule Jayanti

Day and Date:	Wednesday, 03/01/2018
Time:	6.00 PM
Venue:	Girls' Hostel, SVERI's COE, Pandharpur.
Total Number of Students:	All Girl Students
Faculty	All Ladies Staff

Every year, January 3rd is celebrated as Savitribai Phule Jayanti to honor her contribution towards society, education and women empowerment. Our college has celebrated Savitribai Phule Jayanti on 3rd January, 2018 at SVERI's Girls' Hostel. During this event, Chief Guest & Dy.S.P, Pandharpur Mr. Nikhil Pingale (IPS) said that Krantijyoti Savitribai Phule, the first female teacher of the first women's school in India is a pioneer figure. She relentlessly fought against the dominant caste system and worked towards the upliftment of the marginalized. The event took place in the presence of Founder Secretary and Principal Hon. Dr. B. P. Ronge, who welcomed and introduced the guest of the day. He said that values of Krantijyoti Savitribai Phule should be remembered for being India's first female teacher who worked for the upliftment of women and untouchables in the field of education and literacy. Prof. Y.M. Khedkar proposed the vote of thanks.

Lamp Lighting by Chief Guest Mr. Nikhil Pingale

Guidance by Chief Guest Mr. Nikhil Pingale

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , NAAC, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

International Women's Day

Day and Date:	**Thursday, 08/03/2018**
Time:	**10.00 AM**
Venue:	**Open Amphitheatre, SVERI's COE, Pandharpur.**
Total Number of Students:	**All**
Faculty	**All teaching & Non-teaching Staff**

International Women's Day is celebrated worldwide annually on March 8th to honor the cultural, political, and socioeconomic achievements of women. Our college has celebrated the International Women's Day on 8th March, 2018 at open amphitheatre. During the event, Chief Guest Hon. Dr. Rajendra Bharud (IAS) delivered speech on how we can empower women, importance of women empowerment and women's contribution in building of our nation. He also added that we should build broad support for women's rights and work towards the full and equal participation of women within all areas of society. The event took place in the presence of Founder Secretary of SVERI and Principal Hon. Dr. B. P. Ronge, who welcomed and introduced the guest of the day. During his address, he said that girls should know their rights to defend themselves and learn laws related to women's rights. Prof. Y.M. Khedkar proposed the vote of thanks. The event was effectively coordinated by Prof. Karan B. Patil.

Felicitation of Chief Guest Dr. R. Bharud (IAS)

Guidance by Chief Guest Dr. R. Bharud (IAS)

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Mission Sahasi

Day and Date: Wednesday, 14/03/2018

Time: 10.00 AM

Venue: Girls' Hostel Ground, SVERI's COE, Pandharpur.

Total Number of Students: All Girl Students

Institute has taken initiative to conduct **Mission Sahasi** a Session on Self-defense for girl students in SVERI's College of Engineering, Pandharpur in association with Akhil Bhartiy Vidyarthi Parishad (ABVP). College has conducted the event Mission Sahasi on 14th March, 2018 for women empowerment and self protection. During the event, the Chief Guest Mr. Raju Badave expressed his views about importance of self-defense for girl students. In this event, training was given to girl students about various physical exercises and Karate. This session for Self- defense helped girl students to develop their confidence and made them to find safety in difficult situations. The event was effectively coordinated by Prof. Karan B. Patil.

Lamp Lighting by Chief Guest Mr. Raju Badave

Training of self-defense techniques

(Prof. K. B. Patil)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Date: 14/06/2016

Annual Gender Sensitization Action Plan

A.Y. 2016-17

Title of the program	Date
A guidance session on "Anti-Ragging" (S.E.)	15/06/2016
A guidance session on "Anti-Ragging" (T.E.)	23/06/2016
A guidance session on "Anti-Ragging" (B.E.)	11/07/2016
A guidance session on "Anti-Ragging" (F.Y.)	14/08/2016
Savitribai Phule Jayanti (Girls Hostel)	03/01/2017
A guidance session on " Prevention from sexual harassment at work place" organized by Solapur University and Maharashtra State Mahila Ayog, Mumbai at SVERI's College of Engineering Pandharpur	27/02/2017
International Women's day	08/03/2017

COLLEGE OF ENGINEERING PANDHARPUR

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

A Report on: Anti-Ragging Awareness Sessions (2016-17)

Our college has organized an 'Anti-Ragging Awareness session' for all the students of the college. The 'Anti-Ragging Awareness Session' aimed at making students aware of the laws of the country with respect to ragging and how it affects the lives of people victimized by it. The sessions on awareness about Maharashtra Prohibition of Ragging Act, 1999 were conducted by Dean Students Prof. S. R. Gawali and Prof. Y. M. Khedkar for all students in the International Conference Hall as per below schedule.

Class	Date	Time
S.E (All Branches)	15/06/2016	01:00 PM
T.E (All Branches)	23/06/2016	01:30 PM
B.E (All Branches)	11/07/2016	02:30 PM
F.Y. (All Branches)	14/08/2016	01:00 PM

The sessions were addressed by Honorable Principal Dr. B. P. Ronge Sir. During these sessions speakers highlighted the objectives mentioned by AICTE on Anti-ragging and then elaborated on Maharashtra Prohibition of Ragging Act, 1999, the punishable offences and punishments according to the law along with measures taken to curb the menace of ragging among the students in the college campus. All sessions were concluded by asking students to take a pledge to ensure ragging free campus and to be disciplined. All subject teachers and concerned class coordinators were present for the session.

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Krantijyoti Savitribai Phule Jayanti

Day and Date:	Tuesday, 03/01/2017
Time:	6.00 PM
Venue:	SVERI's COE, Pandharpur
Total Number of Students:	All Girl Students

Every year, January 3rd is celebrated as Savitribai Phule Jayanti to honor her contribution towards society, women education and their empowerment. Our college has celebrated the Savitribai Phule Jayanti on 3rd January, 2017 in SVERI's premises. During this event, Dr. S. M. Mukane said that Krantijyoti Savitribai Phule was one of the outstanding personalities who contributed considerably in adding glory to the mission of modern Indian Society. The event took place in the presence of Dean Students Prof. S. R. Gawali, Prof. P. S Kachare, Dr. Shridevi and Dr. A. A. Utpat. Prof. S. M. Shinde proposed the vote of thanks.

Celebration of Krantijyoti Savitribai Phule Jayanti

(Prof. S. M. Shinde)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

The event on "Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013"

Day and Date:	Monday, 27/02/2017
Time:	9.00 AM to 10.30 AM
Venue:	Conference Hall, SVERI's COE, Pandharpur.
Total Number of Students:	All students
Faculty	All staff

The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 is a legislative act in India that seeks to protect women from sexual harassment at their place of work. Our college has conducted one day workshop on this topic in association with Maharashtra Rajya Mahila Aayog, Mumbai and P.A.H. Solapur University for girl students and lady faculty members. During this event, speaker Advocate Mrs. D. K. Ghadage delivered speech. She explained the Act that defines sexual harassment at the work place and created a mechanism for redressal of complaints. Prof. Ms. V. D. Jadhav proposed the vote of thanks.

Lamp Lighting by Speaker Adv. Mrs. D. K. Ghadage

Guidance by Speaker Adv. Mrs. D. K. Ghadage

(Prof. S. M. Shinde)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

International Women's Day

Day and Date:	Wednesday, 08/03/2017
Time:	10.00 AM
Venue:	Open Amphitheatre, SVERI's COE, Pandharpur.
Total Number of Students:	All
Faculty	All teaching & Non-teaching Staff

International Women's Day is celebrated worldwide annually on March 8th to honor the cultural, political and socioeconomic achievements of women. Our college has celebrated the International Women's Day on 8th March, 2017 at open amphitheater. During this event, Chief Guest Hon. Mr. S. M. Kolhe District Justice said that it was the time to uphold women's achievements, recognize challenges and focus greater attention on women's rights and gender equality to mobilize all people to do their best. Girls should know their rights to defend themselves, learn laws related to women's rights and be careful about crimes against women. The event took place in the presence of Founder Secretary of SVERI and Principal Hon. Dr. B. P. Ronge, who welcomed and introduced the guest of the day. He also graced the occasion by addressing girl students that they should celebrate every day as a Women's Day. Prof. Y.M. Khedkar proposed the vote of thanks. The event was effectively coordinated by Prof. Karan B. Patil.

Lamp Lighting by Chief Guest Hon. Mr. S. M. Kolhe, District Justice

(Prof. S. M. Shinde)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Date: 29/05/2015

Annual Gender Sensitization Action Plan

A.Y. 2015-16

Title of the program	Date
A guidance session on "Anti-Ragging"(T.E.)	22/06/2015
A guidance session on "Anti-Ragging"(B.E.)	23/06/2015
A guidance session on "Anti-Ragging"(F.Y.)	11/08/2015
A guidance session on "Anti-Ragging"(S.E.)	30/08/2015
Savitribai Phule Jayanti	03/01/2016
International Women's day	08/03/2016

COLLEGE OF ENGINEERING PANDHARPUR

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

A Report on: Anti-Ragging Awareness Sessions (2015-16)

Our college has organized an 'Anti-Ragging Awareness session' for all the students of the college. The 'Anti-Ragging Awareness Session' aimed at making students aware of the laws of the country with respect to ragging and how it affects the lives of people victimized by it. The sessions on awareness about Maharashtra Prohibition of Ragging Act, 1999 were conducted by Dean Students Prof. S. R. Gawali and Prof. Y. M. Khedkar for all students in the International Conference Hall as per below schedule.

Class	Date	Time
T.E (All Branches)	22/06/2015	02:00 PM
B.E (All Branches)	23/06/2015	11:00 AM
F.Y. (All Branches)	11/08/2015	01:30 PM
S.E (All Branches)	30/08/2015	01:30 PM

The sessions were addressed by Honorable Principal Dr. B. P. Ronge Sir. During these sessions speakers highlighted the objectives mentioned by AICTE on Anti-ragging and then elaborated on Maharashtra Prohibition of Ragging Act, 1999, the punishable offences and punishments according to the law along with measures taken to curb the menace of ragging among the students in the college campus. All sessions were concluded by asking students to take a pledge to ensure ragging free campus and to be disciplined. All subject teachers and concerned class coordinators were present for the session.

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Krantijyoti Savitribai Phule Jayanti

Day and Date:	Sunday, 03/01/2016
Time:	10.00 AM
Venue:	Open Amphitheatre, SVERI's COE, Pandharpur.
Total Number of Students:	All Students
Faculty	All Staff

Every year, January 3rd is celebrated as Savitribai Phule Jayanti to honor her contribution towards society, education and women empowerment. Our college has celebrated Savitribai Phule Jayanti on 3rd January, 2016 at open amphitheatre. During the event, the Chief Guest Mr. Dayanand Gawade (P.I. Pandharpur City Police Station) delivered speech and said that "following the example of Krantijyoti Savitribai Phule, the pioneer of women's education, it is necessary to inculcate the values among students through education." The event took place in the presence of Senior Trustee member Hon. Mr. D. D. Ronge who welcomed and introduced the guest of the day. He enlightened about the life of Krantijyoti Savitribai Phule and Dr. N. D. Misal proposed the vote of thanks.

Lamp Lighting by Chief Guest Mr. Dayanand Gawade

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

International Women's Day

Day and Date:	Tuesday, 08/03/2016
Time:	10.00 AM
Venue:	Open Amphitheatre, SVERI's COE, Pandharpur.
Total Number of Students:	All
Faculty	All teaching & Non-teaching Staff

International Women's Day is celebrated worldwide annually on March 8th to honor the cultural, political and socio-economic achievements of women. Our college has celebrated the International Women's Day on 8th March, 2016 at open amphitheater. During this event, Chief Guest Hon. Principal Dr. Bilavari Karkare, VIT, Pune delivered a speech. Through her speech, she appealed all to give freedom to girls so that they will fulfill their responsibilities. The Guest of Honor Mr. Dayanand Gawade (P.I. Pandharpur City Police Station) said, "First of all, let daughters learn and stimulate their intellectual skills. When you realize that injustice is being done in specific way, women should show their place to those who oppose it. Without it, your value is not understood." The event took place in the presence of the Founder Secretary of SVERI and Principal Hon. Dr. B. P. Ronge who welcomed and introduced the guests of the day. During his speech, he said that, "Women have made great strides in every field and they need more support." Prof. Y.M. Khedkar proposed the vote of thanks. The event was effectively coordinated by Prof. S. M. Shinde.

Speech by Chief Guest Dr. Bilavari Karkare

Speech by Guest of Honor Mr. Dayanand Gawade

(Prof. Y. M. Khedkar)
Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B.P. Ronge)
Principal

Green campus initiatives by the Institution

SVERI
Engineering for Excellence

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- COEPR/2015-2016/Cir/95(A) Date:- 13/07/2015

Circular

For flourishing our campus green, environment friendly and energy efficient, Institute has decided following policies in this regard.

- To create awareness through Street plays, Speeches and Competitions in respect of use of energy, making eco-friendly environment.
- To create awareness amongst students in terms of saving of energy and benefits of eco-friendly environment, class coordinators should conduct awareness session at the start of every semester.

Energy

- Posters and Banners are displayed at prominent places in the campus to habituate students to switch off electric equipments when no need of it.
- "No Private Vehicle Day" be celebrated every year on the occasion of Mahatma Gandhi Jayanti i.e. on 2nd October.
- LED bulbs should be installed in the campus to save energy.
- Photovoltaic solar panels be installed for generating electricity as alternate source of energy.

Environment

- Dust Bins are kept at proper places to collect dry and wet waste.
- Solid and Liquid waste should be collected separately and properly disposed.
- Implementation of rain water harvesting should be started.
- Use of plastic should be avoided.
- E-waste should be collected and disposed properly.
- Separate policy be made for handling of hazardous chemicals in laboratories.
- Encourage to reduce or eliminate paper printing until and unless there is extreme need.

COLLEGE OF ENGINEERING PANDHARPUR

B. Rangi
PRINCIPAL,
College of Engineering,
PANDHARPUR.

Green Campus

- Plantation drives should be undertaken on regular basis so make campus better green.
- Employees of institute must be plant at least one tree in every year.

All the students and staff members are hereby informed to note and abide these policies.

COLLEGE OF ENGINEERING PANDHARPUR

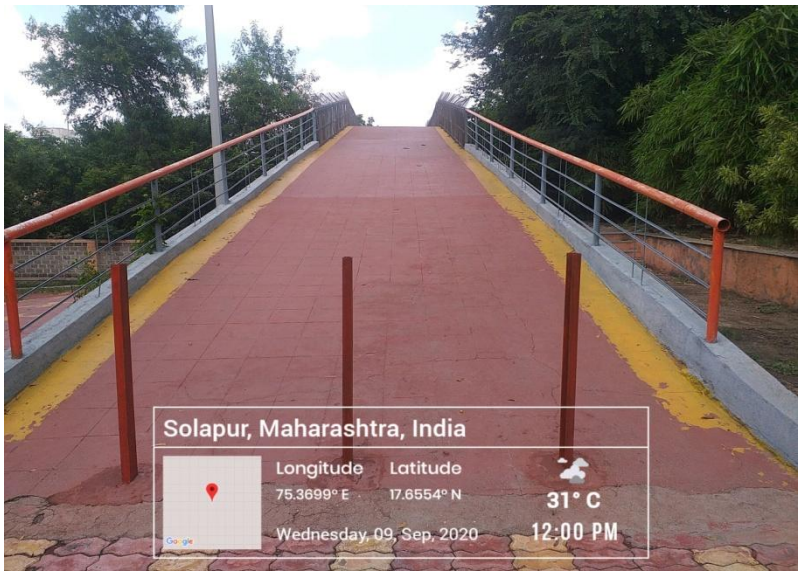
B. Ronge

(Dr. B. B. Ronge)

PRINCIPAL

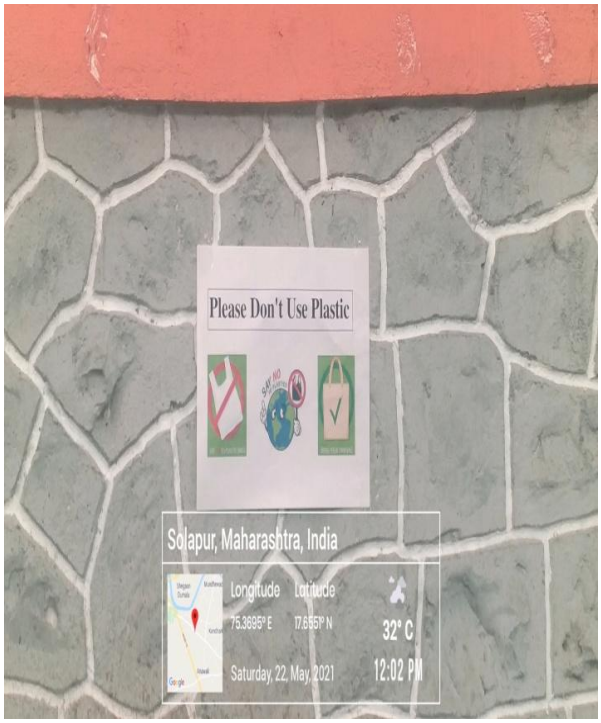
PRINCIPAL,
College of Engineering,
PANDHARPUR.

Green campus initiatives include:



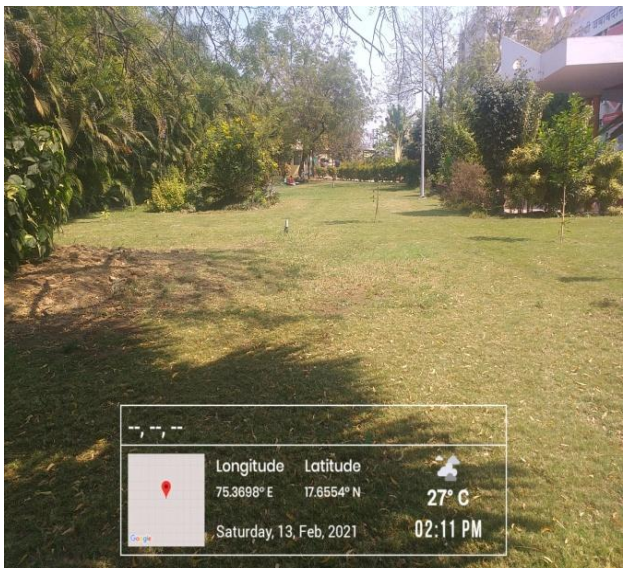
Restricted Entry for Automobile

Pedestrian-friendly pathways



Ban on Plastic use

Landscaping with trees and plants



Landscaping with trees and plants

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

Non-Private Vehicle Day

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No. 54, Gopalpur - Ranjani Road, Gopalpur, **Pandharpur** - 413 304, Dist. Solapur (Maharashtra) Tel.: 7755990201.
Toll Free No.:- 1800-3000-4131, E-mail: coe@sveri.ac.in, Website: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
Accredited by The Indian Institution of Engineers (India), Kolkata and TCS, Pune. ISO 9001:2008 Certified Institute

Ref. No. COEP/2017-18/

Date:- 28/09/2017

Notice

All the students and staff members under SVERI umbrella are hereby informed to note that, the **Mechanical Engineering Student Association (MESA)** is going to celebrate **"No Private Vehicle Day"** on **02nd October 2017.** So all are requested to come with government vehicle, don't come with your private vehicle. On that day the private vehicle are not allowed in college campus to celebrate this day as No Private Vehicle Day.

This event will give message of **"Save Fuel and Control Pollution"**

All the concerned should note the above and act accordingly.

COLLEGE OF ENGINEERING PANDHARPUR

(Prof. S.N. Kulkarni)
Vice Principal

CC:
1. All Principal
2. All Deans
3. All HODs
4. Library
5. Registrar
6. Chief Rector
7. Notice Board

Shri.Vithal Education & Research Institute, Pandharpur

(Regd.No.:Maharashtra/5131/94/Solapur [1860(21)] dated 28/12/94, F-4371Solapur (1950 Mumbai-29) dated 06/03/95)

Gopalpur-Ranjani Road, P.B. No. 54, Gopalpur, Tal. Pandharpur- 413 304, Dist. Solapur (Maharashtra)

Tel.:(02186)225083,Tel./Fax:(02186)225082, Email:coe_pan@rediffmail.com, Website: sveripandharpur.ac.in

Date:- 30/09/2018.

NOTICE

All the students and staff members of under SVERI umbrella are hereby informed to note that, the Mechanical Engineering students association (MESA) is going to celebrate **"Non Private Vehicle Day"** on 2nd October, 2018. All are informed to travel only by College Vehicle, S.T. Bus or Cycles. The schedule of College Buses is as given below:

Bus Route:

1. Lokhande Vasti-KBP Chowk-Link Road-ThakareChowk-Ambedkar Statue -Blood Bank-Sangola Chowk-Gopalpur-College.
2. Anand Nagar, Shreyash Hospital-Blood Bank-Sangola Chowk -Gopalpur-College.
3. S.T.Stand-Urban Bank-Shivaji Chowk-Mahatma Phule Chowk Riddhi-Siddhi Mandir-Gopalpur-College.

Bus Start Time:7.10am, 8.10 am & 9.10 am.

This event will give message of "Save fuel & control pollution".

All the concerned should take the note of above and act accordingly.

B. P. Ronge

(Dr. B. P. Ronge)
SECRETARY

C.C.
1.

1. Principal, College of Pharmacy, Pandharpur.
2. Principal, College of Engineering (Polytechnic),
3. Principal, College of Pharmacy (Poly.), Pandharpur.
4. HODs, College of Engineering, Pandharpur.
5. Chief Rector, Hostels
6. TPO
7. Registrar
8. FTP
9. Office Copy

} With request put on the Notice Boards as well as to read all the classrooms for effective implementation

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE * PANDHARPUR * SVERI

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE, PANDHARPUR
(Regd.No.:Maharashtra/5131/94/Solapur[1860(21)]dated 28/12/94,F-4371 Solapur(1950 Mumbai-29)dated 06/03/95)

P.B..No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413 304,, Dist. Solapur (Maharashtra)
Tel. : 7755990201, **Toll Free No.** :- 1800-3000-4131 **E-mail** : coe@sveri.ac.in, **Website**: www.sveri.ac.in

Date: 28/09/2019

NOTICE

"Save Fuel & Control Pollution"

All the students and staff members under SVERI umbrella are hereby informed to note that, the Mechanical Engineering Students' Association (MESA) is going to celebrate **"Non Private Vehicle Day"** on 02/10/2019. All are requested to travel only by college vehicles, S.T. buses or cycles.

The college buses will run on below-mentioned routes:

Bus Route:

1. Wakhari-Isbhavi-KBP College Chowk-Link Road-Thakare Chowk-Ambedkar Statue -Blood Bank-Sangola Chowk-Gopalpur-College.
2. Anand Nagar, Shreyash Hospital-Blood Bank-Sangola Chowk -Gopalpur-College.
3. S.T.Stand-Urban Bank-Shivaji Chowk-Mahatma Phule Chowk Riddhi-Siddhi Mandir-Gopalpur-College.

Departure time of college buses from first stop: 7:10 am, 8:10 am & 9:10 am.

Note: Private vehicles such as cars, motor cycles, etc. will not be allowed in college campus.

All the concerned should take the note of above and act accordingly.

(Prof. M. M. Pawar)
Campus In-Charge

CC:

1. Principals of Sister Institutes under SVERI umbrella
2. Deans
3. HODs
4. Registrar
5. College Notice Boards
6. Workshop
7. Library
8. TPO
9. Notice Boards at Boys' Hostels
10. Notice Boards at Girls' Hostels
11. Transport section
12. ftp
13. Office Copy

} With request put on the Notice Boards as well as to read all the classrooms for effective implementation

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE * PANDHARPUR *

...आणि प्राचार्य डॉ.रोंगे यांनी देखील केला बसने प्रवास !

श्री विठ्ठल एज्युकेशन ॲण्ड रिसर्च इन्स्टिटयूट मध्ये 'नो प्रायव्हेट व्हेईकल डे' साजरा !

श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिटयूट 'नो प्रायव्हेट व्हेईकल डे' अभियानाचे आयोजन करण्यात आले होते. प्रसंगी स्कूल बस मधुन प्रवास करताना संस्थापक सचिव व प्राचार्य डॉ.बी.पी.रोंगे, सोबत बी. फार्मसीचे प्राचार्य. डॉ. आर.जी. कुलकर्णी,प्राद्यापक वर्ग,विद्यार्थी विद्यार्थिनी.

पंढरपूरः सोमवारचा दिवस नेहमीप्रमाणेच उजाडला! महात्मा गांधी व लाल बहादूर शास्त्री या महापुरुषांची जयंती असल्यामुळे शाळा महाविद्यालय वगळता सर्व शासकीय कार्यालयांना सुटी असल्यामुळे रस्त्यांवर वाहनांची वाहतूक जवळ जवळ नव्हतीच! पण स्वेरी परीवारातील नेहमीची , प्राध्यापक, शिक्षकेतर कर्मचारी व विद्यार्थी आपल्या नेहमीच्या वाहनावर स्वार झाल्याचे दिसत नव्हते. त्यामुळे स्वेरीने सुट्टी जाहीर केली की काय?, 'आज स्वेरी महापुरुषांची जयंती साजरी करणार नाही की काय?' असाही प्रश्न अनेकांना पडला. परंतु स्वेरीची स्कूल बस वगळता स्वेरीची अन्य कोणतीही खाजगी वाहने रस्त्यावर धावत नव्हती. रोंगे सर मात्र आपल्या निवासस्थानापासून (गेंड वस्ती ,कराड रोड, पंढरपूर) चालतच निघाले. अनेकांना वाटले त्यांची ३४३४ नंबरची इनोवा बंद पडली की काय ? असे म्हणत अनेक वाहन चालकांनी 'चला सर, कॉलेजला सोडतो. असे म्हणत रोंगे सरांना गाडीवर बसण्याचा आग्रह करत होते. पण रोंगे सरांनी 'आज'नो प्रायव्हेट व्हेईकल डे'साजरा करण्याचे ठरविल्यामुळे आज वाहनांचा वापर करायचा नाही' यावर मतावर ठाम राहिले. महादेव डुबल यांनी आपली दुचाकी वाहन थांबवत 'सर तुम्हाला निदान ठाकरे चौकापर्यंत तरी सोडतो बसा.' अशी गळ घातली. पण रोंगे सरांनी त्यालाही नकार दर्शविला. अखेर डुबल यांनी आपल्याच गाडीचा वेग मंदावतच रोंगे सरांसोबत चर्चा करतच ठाकरे चौक गाठले. त्याठिकाणी नागालैंड परीसराकडून स्कूल बस आली. ड्रायव्हर अरुण नागटिळक हे देखील बस थांब्यावर रोंगे सरांना पाहून अचंबित झाले. डॉ. रोंगे सरांना बस मध्ये चढताना पाहून विद्यार्थ्यांना देखील आश्चर्य वाटले. 'नो प्रायव्हेट व्हेईकल डे' च्या निमित्ताने सचिव व प्राचार्य डॉ रोंगे सरांच्या बसमधील आगमनाने मात्र नियमीतच्या किलबिलाटा ऐवजी आदरयुक्त शिस्तीमुळे शांतता जाणवत होती. बस मध्ये देखील डॉ. रोंगे सरांनी विद्यार्थिनींसमवेत संवाद साधत अडचणी विचारल्या.

त्याचे झाले असे की, श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिटयूट पंढरपूर अंतर्गत असणाऱ्या इंजिनिअरिंग कॉलेजच्या मेसा (मेकॅनिकल इंजिनिअररिंग स्टुडंट असोशिएशन) तर्फे आयोजिलेल्या अभियांत्रिकी व फार्मसी (पदविका, पदवी, पदव्युत्तर पदवी) व एम.बी.ए विभागामधील सर्वच सदस्यांनी 'नो प्रायव्हेट व्हेईक्ल डे' च्या निमित्ताने आपल्या खाजगी गाड्यांना विश्रांती देवून काहीजण बस, टांगा, टमटम, रिक्षाने तर काही प्राध्यापक हे सायकलचा वापर करून तर काही जण चक्क चालत कॉलेज गाठत होते. 'नो प्रायव्हेट व्हेईकल डे' च्या निमित्ताने संस्थापक सचिव व अभियांत्रिकी महाविदयालयाचे प्राचार्य डॉ. बी.पी.रोंगे म्हणाले 'इंधन बचाव व पर्यावरणाचे संरक्षण करण्याच्या हेतूने आज राष्ट्रपिता महात्मा गांधी यांच्या जयंतीच्या निमित्ताने 'नो प्रायव्हेट व्हेईकल डे' अभियानाचे आयोजन केले होते. यामध्ये संस्थेअंतर्गत असणाऱ्या इंजिनिअरिंग व फार्मसी (पदविका, पदवी, पदव्युत्तर पदवी) मधील सर्वच सदस्यांनी या एकदिवसीय 'नो प्रायव्हेट व्हेईकल डे' च्या अभियानात सहभागी झाले. संस्थेचे संस्थापक सचिव व प्राचार्य डॉ.बी.पी.रोंगे यांच्या बरोबर बी. फार्मसीचे प्राचार्य. डॉ. आर.जी. कुलकर्णी, अभियांत्रिकीचे डॉ.एम.एम.पाटील आणि काही प्राध्यापक वर्ग हे ठाकरे चौक येथून बसमध्ये बसले. डिप्लोमाचे प्राचार्य प्रा. एन.डी. मिसाळ हे रेल्वे स्टेशन जवळपासून बसमधून आले, तर पंढरपूर शहरातून कॉलेज दरम्यान अनेक प्राध्यापक वर्ग इतर बस मधून येताना दिसून आले. अधिष्ठाता डॉ.एस.एम.मुकणे हे सायकलीवर, विद्यार्थी अधिष्ठाता प्रा.एस.आर. गवळी, अधिष्ठाता डॉ. अभय उत्पात, मेकॅनिकलचे विभागाचे प्रमुख डॉ.पी.एस.कचरे, प्रथम वर्ष अभियांत्रिकीचे विभाग प्रमुख डॉ. सतीश लेंडवे यांच्यासह काही प्राद्यापक स्कूल बस मधुन प्रवास केला. विशेष म्हणजे बस मधून उतरताना सचिव व प्राचार्य डॉ. रोंगे यांच्यासह इतर प्राध्यापकांनी वाहकाकडे कुपण देखील दिले. कॉलेज कॅम्पसमधील बुधवार वगळता दररोज खचाखच भरलेल्या वाहनांची जागा आज काही सायकलींनी घेतली होती तर संपूर्ण दिवसभर कॉलेज कॅम्पसमध्ये वाहनांच्या आवाजांऐवजी सायकलीची ट्रिंग ट्रिंग एकू येत होते. या 'नो प्रायव्हेट व्हेईकल डे' चे पढरपूरकरांनी तितक्याच उत्साहाने स्वागत केले.

दैनिक दामाजी एक्सप्रेस

दिनांक ०३/१०/२०१७

Hon. Principal, Dean's, HOD's, all students were come by college bus, as well State transport bus.

श्री विठ्ठल एज्युकेशन ॲण्ड रिसर्च इन्स्टिट्युटमध्ये नो प्रायव्हेट व्हेईकल डे साजरा

... आणि प्राचार्य डॉ.रोंगे सरांनी देखील केला बसने प्रवास

पंढरपूर (प्रतिनिधी):- महात्मा गांधी व लाल बहादूर शास्त्री या महापुरुषांची जयंती असल्यामुळे शाळा महाविद्यालय वगळता सर्व शासकीय कार्यालयांना सुटी असल्यामुळे रस्त्यांवर वाहनांची वाहतूक जवळ जवळ नव्हतीच ! पण स्वेरी परीवारातील नेहमीची , प्राध्यापक, शिक्षकेतर कर्मचारी व विद्यार्थी आपल्या नेहमीच्या वाहनावर स्वार झाल्याचे दिसत नव्हते. त्यामुळे स्वेरीने सुट्टी जाहीर केली की काय?, आज स्वेरी महापुरुषांची जयंती साजरी करणार नाही की काय? असाही प्रश्न अनेकांना पडला. परंतु स्वेरीची स्कूल बस वगळता स्वेरीची अन्य कोणतीही खाजगी वाहने रस्त्यावर धावत नव्हती. रोंगे सर मात्र आपल्या निवासस्थानापासून (गेंड वस्ती ,कराड रोड, पंढरपूर) चालतच निघाले. अनेकांना वाटले त्यांची ३४३४ नंबरची इनोवा बंद पडली की काय ? असे म्हणत अनेक वाहन चालकांनी चला सर, कॉलेजला सोडतो. असे म्हणत रोंगे सरांना गाडीवर बसण्याचा आग्रह करत होते. पण रोंगे सरांनी आज नो प्रायव्हेट व्हेईकल डे साजरा करण्याचे ठरविल्यामुळे आज वाहनांचा वापर करायचा नाही यावर मतावर ठाम राहिले.

श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिटयूट पंढरपूर अंतर्गत असणाऱ्या इंजिनिअरिंग कॉलेजच्या मेसा (मेकॅनिकल इंजिनिअरिंग स्टुडंट असोशिएशन) तर्फे आयोजिलेल्या अभियांत्रिकी व फार्मसी (पदविका, पदवी, पदव्युत्तर पदवी) व एम.बी.ए विभागामधील सर्वच सदस्यांनी नो प्रायव्हेट व्हेईकल डे च्या निमित्ताने आपल्या खाजगी गाड्यांना विश्रांती देवून काहीजण बस, टांगा, टमटम, रिक्षाने तर काही प्राध्यापक हे सायकलचा वापर करून तर काही जण चक्क चालत कॉलेज गाठत होते. नो प्रायव्हेट व्हेईकल डे च्या निमित्ताने संस्थापक सचिव व अभियांत्रिकी महाविदयालयाचे प्राचार्य डॉ. बी.पी.रोंगे म्हणाले इंधन बचाव व पर्यावरणाचे संरक्षण करण्याच्या हेतूने आज राष्ट्रपिता महात्मा गांधी यांच्या जयंतीच्या निमित्ताने नो प्रायव्हेट व्हेईकल डे अभियानाचे आयोजन केले होते.

माणदूत एक्सप्रेस

मंगळवार दि. ३ ऑक्टोबर २०१७

Hon. Principal, Dean's, HOD's, all students were come by college bus, as well State transport bus.

'स्वेरी'तील विद्यार्थ्यांनी दिला 'इंधन बचाव व पर्यावरण संरक्षणाचा संदेश

'नो प्रायव्हेट व्हेईकल डे'मध्ये प्राचार्य, प्राध्यापकांनीही नोंदविला सहभाग

पंढरपूर/तालुका प्रतिनिधी

'इंधन बचाव व पर्यावरणाचे संरक्षण करण्याच्या हेतूने राष्ट्रपिता महात्मा गांधी यांच्या जयंतीच्या निमित्ताने येथील श्री विठ्ठल एज्युकेशन ॲंड रिसर्च इन्स्टिटयूट'नो प्रायव्हेट व्हेईकल डे' अभियानाचे आयोजन करण्यात आले. यामध्ये संस्थेअंतर्गत असणाऱ्या इंजिनिअरिंग व फार्मसी (पदविका, पदवी, पदव्युत्तर पदवी) मधील विद्यार्थी, संस्थेचे संस्थापक सचिव व प्राचार्य डॉ.बी.पी. रोंगे यांच्यासह प्राध्यापकांनी सहभाग नोंदविला.

महात्मा गांधी जयंतीच्या दिवशी स्वेरीची स्कूल बस वगळता स्वेरीची अन्य कोणतीही खाजगी वाहने रस्त्यावर धावत नव्हती. प्राचार्य डॉ. रोंगे आपल्या निवासस्थानापासून (गेंड वस्ती ,कराड रोड, पंढरपूर) चालतच निघाले. नवीन कराड नाका येथील थांब्यावरून त्यांनी बसमध्ये प्रवेश केला. बसमधील त्यांच्या आगमनाने नियमीतच्या किलबिलाटा ऐवजी आदरयुक्त शिस्तीमुळे शांतता जाणवत होती. बस मध्ये मध्ये विद्यार्थिनींसमवेत संवाद साधत अडचणी विचारल्या. महाविद्यालयातील मेसा (मेकॅनिकल इंजिनिअरिंग स्टुडंट असोशिएशन) तर्फे आयोजित अभियांत्रिकी व फार्मसी (पदविका, पदवी, पदव्युत्तर पदवी) व एम. बी. ए विभागामधील सर्वच सदस्यांनी 'नो प्रायव्हेट व्हेईकल डे' च्या निमित्ताने आपल्या खाजगी गाड्याना विश्रांती देत बस, टांगा, टमटम, रिक्षा तर काही प्राध्यापक हे सायकलचा वापर करून तर काही जण चक्क चालत कॉलेज गाठले. अधिष्ठाता डॉ.एस.एम. मुकणे हे सायकलवर, प्रा. एस.आर. गवळी, डॉ. अभय उत्पात, डॉ.पी. एस. कचरे, डॉ. सतीश लेंडवे यांच्यासह काही प्राध्यापकांनी स्कूल बस मधून प्रवास केला.

"Save Fuel and Control Pollution".

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Plastic Ban Awareness Activities

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Pandharpur- 413 304, District: Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, Toll Free No.: 1800-3000-4131, E-mail: coe@sveri.ac.in,Web: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accredited Institute, Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune. ISO 9001-2015 Certified Institute

Date: 07.09.2019

NOTICE

Our college is going to participate in "Plastic Waste Free Campaign (Swachhta Hi Sewa 2019)" initiated by the Department of Drinking Water and Sanitation, Govt. of India.

In this regard, all the students and staff members are hereby informed to take the note of the above said campaign and make it a grand success. The following staff members are appointed for the effective implementation of this campaign from 11th September to 27th October 2019 in campus.

Sr. No.	Name of the staff	Responsibility
1	Mr. K.S. Pukale (Degree Engg)-	Overall Coordinators
2	Mr. S. D. Bhingare (Diploma Engg)	
3	Mr. S.M. Kale (MECH Dept. Coordinator)	Essay writing on Plastic Waste Free India- 21/09/2019
4	Mr. N.M. Maske (CSE Dept. Coordinator)	Shramdan activity in College campus on 2/10/2019
5	Mr. M.M. Shinde (CSE Dept. Coordinator)	
6	Mr. A.M. Kasture (ETC Dept. Coordinator)	Street play act on Plastic Waste Free India 26/09/2019
7	Ms. S. V. Jagzap (ETC Dept. Coordinator)	
8	Mr. R.P. Shinde (ELE Dept. Coordinator)	General awareness on Plastic Waste Free India in all classes 11th Sept to 1st October 2019
9	Mr. Y.B. Patel (CIVIL Dept. Coordinator)	
10	Mr. S.C. Halkude	Publicity
11	Mr. A.B. Chandanshive	Photography
12	Mr. Tagare	Store-Supporting staff

All are requested to note the same and act accordingly.

(Prof. S. M. Shinde, Dr. R. N. Haridas)
NSS Programme Officer

(Dr. A.A. Utpat)
Dean Students'

(Dr. R. R. Gidde)
Dean Administration

Scanned with CamScanner

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Activity Report

Name of Activity: Moving towards the plastic free India.

Date: 02/10/2019

Brief report: As per the directives Hon. Principal, an occlusion of Gandhi Jayanti, Our Institute has organized plastic free campaigning at our institute throughstrit play activity.

Students Performing at Plastic free campaign

Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

B.Range
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Activity Report

Name of Activity: Awareness of avoid single use of Plastic

Date: 04/01/2020

Brief report: As per the directives Hon. Principal, Our Institute has taken initiative for the avoiding the single use of plastic. For Student and faculty awareness campaigns that engage on reductions in single-use plastics and to push for lasting solutions to the plastic.

Plastic ban hoardings are displayed in College Campus

Event Co-ordinator

COLLEGE OF ENGINEERING PANDHARPUR

B. Range
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , NAAC, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Activity Report

Name of Activity: Moving towards plastic free campus

Date: 07/01/2020

Brief report: As per the directives Hon. Principal, Our Institute has taken initiative for Plastic free campus. For aware ring to students we organized various guidance sessions for student. Dr. R. S. Pawar has given expert talk on impacts of plastic on environment, he has also guide about alternate solution for the single use of plastic.

A session on Moving towards plastic free campus by Dr. R. S. Pawar

Event Coordinator

COLLEGE OF ENGINEERING PANDHARPUR

PRINCIPAL,
College of Engineering,
PANDHARPUR

Soft skills enhancement initiatives by the Institution

SOFT SKILLS

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

1. Soft skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
		2015-2016		
1	Soft Skill and Aptitude Training Session to BE-CSE, Mechanical, ENTC students	17/06/2015 to 27/06/2015	95	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur
2	A Session on "Soft Skills expected by Industry" for ENTC and Mechanical Engineering students	29/09/2015	106	Mr. Hrushikesh Kulkarni, HR Manager, Kirloskar Group, Solapur
3	Training Programme on " Soft Skills for Campus Recruitment" for Mechanical, CSE and ENTC students	21/09/2015 to 11/10/2015	95	Mr.Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

(Dr. B. P. Ronge)
Principal

COLLEGE OF ENGINEERING PANDHARPUR

PRINCIPAL,
College of Engineering
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:-

Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

1. Soft skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
2016-2017				
1	Soft Skill and Aptitude Training Session to BE-CSE, Mechanical Engineering students	30/05/2016 to 10/06/2016	95	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur
2	Soft Skills Training Programme for MBA Students	09/01/2017 to 14/01/ 2017	87	TREEZEC-E Solutions, kamala Mills, Lower parel, Mumbai
3	Soft Skill & Aptitude Training for CSE, ENTC and Mechanical Engineering Students	19/01/2017 & 20/01/2017	142	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING PANDHARPUR

B. P. Ronge

(Dr. B. P. Ronge)
Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

SVERI
Engineering for Excellence

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)

1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

1. Soft skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
	2017-2018			
1	Soft Skill and Aptitude Training Session to BE-CSE, Mechanical, ENTC students	01/06/2017 to 12/06/2017	105	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur
2	Sessions on Soft Skills as "Kabil Bano" for Second Year Mechanical, CSE, ENTC and Civil students	21/07/2017 to 22/07/2017	46	Mr. Imtiyaz Khan , Director, Kabil Bano, Mumbai
3	Sessions on Soft Skills "Kabil Bano" for Final Year CSE, Mechanical, ENTC, Civil and MBA students	12/09/2017 to 13/09/2017	60	Mr. Imtiyaz Khan, Director, Kabil Bano, Mumbai
4	Personality skill development programme for MBA and First Year Engineering students	02/01/2018 to 18/01/2018	57	Mpower Talent, Ichalkaranji
5	A Session on Soft skills & Interview Skills for Final Year CSE, ENTC and Mechanical Engineering students.	27/09/2017 to 29/09/2017	306	Mr. Gaurankha, Global talent Track, Pune

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING PANDHARPUR

B. Ronge
(Dr. B. P. Ronge)
Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SVERI
Engineering for Excellence

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:-

Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

1. Soft skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
	2018-2019			
1	Soft Skill and Aptitude Training Session to BE-CSE, Mechanical, ENTC students.	31/05/2018 to 11/06/2018	87	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur.
2	Soft Skill Sessions on "Life Skill Development"	06/07/2018 to 04/08/2018	250	Achievers' Team, Training and Consultancy, Gangadhar Society, Solapur.
3	A Soft Skill Training Programme to Third Year CSE, ENTC and Mechanical Engineering students.	20/12/2018 to 29/12/2018	425	Team MPower talent, Yadrav, Ichhalkaranji, Kolhapur.
4	A Session on Emotional Intelligence in Engineering.	12/03/2019	94	Mr. E.V. Swaminathan, Dynamic Leader, Counselor and Speaker, Pune.

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING * PANDHARPUR *

(Dr. B. P. Ronge)
Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date.-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

1. Soft skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
	2019-2020			
1	Soft Skill and Aptitude Training Session to BE-CSE, Mechanical, ENTC students	27/05/2019 to 07/6/2019	280	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur
2	Soft Skill and Aptitude Training Session to MBA Students	23/07/2019 to 11/08/2019	45	Mr. Sanir Kittur, MD, APT TECH Solutions & Team, Kolhapur
3	A Session on Soft Skills for Competency Development for Third Year Civil Students	19/01/2020	80	Mr. Shubhesh Pandey ,SKILLOASIS, Pune

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B. P. Ronge)
Principal

Language and Communication skills enhancement initiatives by the Institution

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

2. Language and communication skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
		2015-2016		
1	A Training Programme on "Communication Improvement" for Final Year CSE, IT, ENTC, Civil and Mechanical Engineering Students	05/07/2015 to 07/07/2015	97	Mr.Shrikant Bacchav & Mrs.Savita Dadhe, Bacchav Associates, Gangapur Road, Nashik
2		01/08/2015 to 09/08/2015	92	
3		16/08/2015 to 25/08/2015	98	
4		07/09/2015 to 15/09/2015	96	
5	A Training Programme on "Communication Improvement" for Second and Third year CSE, IT, ENTC, Civil and Mechanical Engineering Students	18/01/2016 to 27/1/2016	143	Mr. Shrikant Bacchav & Mrs.Savita Dadhe, Bacchav Associates, Gangapur Road, Nashik
6		20/02/2016 to 28/02/2016	120	
7		14/03/2016 to 22/03/2016	154	
8	A Training Session on "Effective Communication" to Final year CSE, IT, ENTC and Mechanical Engineering Students	10/03/2016 to 12/03/2016	98	Mr. Ramesh Sood, Soft Skills NLP trainer, Pune

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B. P. Ronge)
Principal

College of Engineering PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

2. Language and communication skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
2016-2017				
1	A Training Programme on "Communication Improvement" for Final Year CSE, IT, ENTC and Mechanical Engineering Students	7/7 2016 to 10/7 2016	89	Mr.Shrikant Bacchav & Mrs.Savita Dadhe, Bacchav Associates, Gangapur Road, Nashik
2		11/08/2016 to 14/08/ 2016	92	
3	A Guidance session on "Japanese Language Awareness" for Second, Third and Final year students	26/09/2016	23	Mr. Vipul Deoani, Manager,TCS, Pune

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING * PANDHARPUR *

(Dr. B. P. Ronge)
Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accredited Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)

1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

2. Language and communication skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
		2017-2018		
1	Training Sessions on Communication skill for Interview and One to One Mock PI for all final year students	22/08/2017 to 30/8/2017	325	Mpower Talent Team, Yadrav, Ichalkaranji
2	Training Sessions on English and Communication skill for Interview, Public Speaking and Email Writing for MBA students	18/09/2017 to 23/09/2017	38	TREEZEC-E-SOLUTIONS, Trade World Building, Kamala mills, Mumbai.
3	Training Sessions on "English & Soft Skill" for third year students of all branches	16/12/2017 to 26 /12/2017	213	Mpower Talent Team,Yadrav, Ichalkaranji
4	A Session on "JAPANESE LANGUAGE AWARENESS SESSION" for First Year all branches and Second year Mechanical, ENTC and CSE students	07/01/2018	226	Miss. Sujata Kolekar, AVP, Cognizant, Pune
5	A Session on Communication Skill for Personal Interview (Mock PI) for Final Year Civil Engineering Students	25/01/2018	49	Mr. Shrikant Sundergiri, Consultant, Pune

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B. P. Ronge)
Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SVERI
Engineering for Excellence

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)
1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

2. Language and communication skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
		2018-2019		
1	A Session on How to improve English communication for Personal Development for Second Year mechanical Engineering Students	15/07/2018	78	Dr. M. K. Raul, Dean-TPII, SVERI's COE, Pandharpur
2	A Session on "Importance of English for Personality Grooming" for Third and Final year CSE and ENTC students	19/03/2019	270	Lokmat Media group in association with Gellitte Guard team, Solapur
3	A Session on Importance of Japanese Language & further scope in the career for Third and Final year CSE and ENTC students.	26/03/2019	87	Mr. M.Bhimsen, VP Silverpeak Global, Pune

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGINEERING PANDHARPUR

(Dr. B. P. Ronge)
Principal

College of Engineering
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:-

Date:-

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following (10)

1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills

2. Language and communication skills

Sr. No	Name of the capability enhancement program	Date of implementation (DD-MM-YYYY)	Number of students enrolled	Name of the agencies/consultants involved with contact details (if any)
		2019-2020		
1	A Training Session for MOCK Personal Interviews for Third Year Mechanical Students	19/06/2019	90	Dr. M. K. Raul, Dean-TPII, SVERI's COE, pandharpur
2	A Session on Communication in "Personal Interview" for Final Year CSE and ENTC students	02/08/2019	34	Mr. Shrikant Sundergiri, Consultant, Pune
3	A session on "Effective English Communication" to Second Year Civil, Electrical and Third year mechanical Students	27/02/2020	176	Mr. N. C. Gosavi, CEO, Coplaced Consultancy, Pune
4	A Session on "Role of Communication skills in career" for all third year students	25/02/2020	147	Ms. Taral Jadhav, Director, Pratian Technologies, Mumbai

(Mr. A. A. Mote)
Dean- Training & Alumni Affairs

COLLEGE OF ENGG. PANDHARPUR

(Dr. B. P. Ronge)
Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

NSS Activities

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Summary of extension and outreach programs conducted by the institution through NSS

Academic Year 2015-16				
Name of the activity	**Organising unit/ agency/ collaborating agency**	**Name of the scheme**	**Year of the activity**	**Number of students participated in such activities**
Water distribution camp during "Ashadhi Wari"	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2015-16	190
"POLICE MITRA" During "Ashadi Ekadashi and Magh Wari"	SVERI College of Engineering, Pandharpur	NSS	2015-16	300
Swaccha Bharat Pandrawada	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2015-16	100
Voluntarily Blood Donation Camp on "Engineers Day" and "Shivjayanti"	SVERI College of Engineering, Pandharpur	NSS	2015-16	350
NSS special camp at Kacharedwadi, Tal-Mangalwedha	SVERI College of Engineering, Pandharpur	NSS	2015-16	70
Poster Competition event on the occasion of International Women's Day	SVERI College of Engineering, Pandharpur	NSS	2015-16	50
World Water Week	SVERI College of Engineering, Pandharpur	NSS	2015-16	50
International Yoga Day	SVERI College of Engineering, Pandharpur	NSS	2015-16	500

COLLEGE OF ENGINEERING PANDHARPUR

B. Ranje
PRINCIPAL,
College of Engineering
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Academic Year 2016-17				
Name of the activity	**Organising unit/ agency/ collaborating agency**	**Name of the scheme**	**Year of the activity**	**Number of students participated in such activities**
Swachh Bharat Padhawada	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2016-17	100
Blood Donation Camp at SVERI Campus on occasion of Independence day	SVERI College of Engineering, Pandharpur	NSS	2016-17	250
Tree Plantation at Gopalpur	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2016-17	50
NSS Specila Camp at Khed Bhalvani	SVERI College of Engineering, Pandharpur	NSS	2016-17	150
Blood Donation Camp on the occasion of Shiv Jayanti	SVERI College of Engineering, Pandharpur	NSS	2016-17	200
International Yoga Day	SVERI College of Engineering, Pandharpur	NSS	2016-17	500

COLLEGE OF ENGINEERING PANDHARPUR

B. Range

PRINCIPAL,
College of Engineering,
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Academic Year 2017-18				
Name of the activity	**Organising unit/ agency/ collaborating agency**	**Name of the scheme**	**Year of the activity**	**Number of students participated in such activities**
Water distribution camp and Police Mitra during "Ashadhi Wari"	SVERI College of Engineering, Pandharpur	NSS	2017-18	200
Blood Donation Camp	SVERI College of Engineering, Pandharpur and Shri. Chatrapati Shivaji Maharashtra Saroupachar Rugnalayand- Vaishpayan Smruti Shashkiy MahaVidyalaya Solapur	NSS	2017-18	300
Swachh Bharat Padhwada	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2017-18	100
Swachh Bharat Abhiyan at Gopalpur	SVERI College of Engineering, Pandharpur	NSS	2017-18	50
NSS special camp at Ozewadi, Pandharpur	SVERI College of Engineering, Pandharpur and Ozewadi grampanchayat, Ozewadi	NSS	2017-18	150
Blood Donation Camp at SVERI Campus	SVERI College of Engineering, Pandharpur	NSS	2017-18	350
International Yoga Day	SVERI College of Engineering, Pandharpur	NSS	2017-18	500

COLLEGE OF ENGINEERING PANDHARPUR

PRINCIPAL,
College of Engineering,
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Academic Year 2018-19				
Name of the activity	**Organising unit/ agency/ collaborating agency**	**Name of the scheme**	**Year of the activity**	**Number of students participated in such activities**
Police Mitra	SVERI College of Engineering, Pandharpur	NSS	2018-19	100
Nirmal Wari Nisarg Wari Abhiyan	SVERI College of Engineering, Pandharpur	NSS	2018-19	300
Mahawackathon	SVERI College of Engineering, Pandharpur	NSS	2018-19	50
Swacchata Hich Seva	SVERI College of Engineering, Pandharpur	NSS	2018-19	150
Surgical strike day celebrated by sveri's college of engineering, pandharpur	SVERI College of Engineering, Pandharpur	NSS	2018-19	100
Mahatma Gandhi jayanti street play on Swachata	SVERI College of Engineering, Pandharpur	NSS	2018-19	50
NSS Camp at Sonke Tal: Pandharpur	SVERI College of Engineering, Pandharpur	NSS	2018-19	180
मराठी भाषा संवर्धन पंधरवडा	SVERI College of Engineering, Pandharpur	NSS	2018-19	150
i. Elocution Competition in Marathi Language.	SVERI College of Engineering, Pandharpur	NSS	2018-19	
ii. Essay Writing Competition on Importance of Marathi Language	SVERI College of Engineering, Pandharpur	NSS	2018-19	
iii. Marathi Book Exhibition	SVERI College of Engineering, Pandharpur	NSS	2018-19	

COLLEGE OF ENGINEERING PANDHARPUR

PRINCIPAL,
College of Engineering,
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Academic Year 2018-19 (Continued)

Name of the activity	Organising unit/ agency/ collaborating agency	Name of the scheme	Year of the activity	Number of students participated in such activities
Lokshahi Pandharwada	SVERI College of Engineering, Pandharpur	NSS	2018-19	150
i. Voter Day Rally from Tehsil office to Shivaji Chowk Pandharpur	SVERI College of Engineering, Pandharpur	NSS	2018-19	
ii. School visit : Importance of Voting and Election at Gadegaon school Pandharpur to increase awareness of election	SVERI College of Engineering, Pandharpur and	NSS	2018-19	
iii. Group discussion and debate competition regarding democracy election and good governance	SVERI College of Engineering, Pandharpur	NSS	2018-19	
iv. Celebrated Lokshahi Pandharwada by giving massage through drawing sketches and posters	SVERI College of Engineering, Pandharpur	NSS	2018-19	
Blood Donation Camp	SVERI College of Engineering, Pandharpur	NSS	2018-19	250
Tree Plantation activity	SVERI College of Engineering, Pandharpur	NSS	2018-19	80
International Yoga Day	SVERI College of Engineering, Pandharpur	NSS	2018-19	500

COLLEGE OF ENGINEERING PANDHARPUR

PRINCIPAL,
College of Engineering,
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Academic Year 2019-20				
Name of the activity	**Organising unit/ agency/ collaborating agency**	**Name of the scheme**	**Year of the activity**	**Number of students participated in such activities**
Swach Wari Swasth Wari, Nirmal Wari Harit Wari	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2019-20	511
Jal Shakti Abhiyan	SVERI College of Engineering, Pandharpur	NSS	2019-20	50
Swachh Bharat Pakhwada	SVERI College of Engineering, Pandharpur and Gopalpur Grampanchayat, Gopalpur	NSS	2019-20	100
Help for Sangli Pur-Grast	SVERI College of Engineering, Pandharpur	NSS	2019-20	100
Blood Donation Camp	SVERI College of Engineering, Pandharpur	NSS	2019-20	300
Sadbhavana Diwas Celebration	SVERI College of Engineering, Pandharpur	NSS	2019-20	100
Celebration of 150th Mahatma Gandhi Jayanti	SVERI College of Engineering, Pandharpur	NSS	2019-20	All staff and students

COLLEGE OF ENGINEERING PANDHARPUR

B-Range

PRINCIPAL,
College of Engineering,
PANDHARPUR

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

Academic Year 2019-20 (Continued)				
Name of the activity	**Organising unit/ agency/ collaborating agency**	**Name of the scheme**	**Year of the activity**	**Number of students participated in such activities**
Sanvidhan Day Celebration	SVERI College of Engineering, Pandharpur	NSS	2019-20	80
NSS Camp at Ranjani	SVERI College of Engineering, Pandharpur	NSS	2019-20	170
HIV/AIDS Awareness Session" jointly organized by Red Ribbon Club, Govt. Hospital, Pandharpur	SVERI College of Engineering, Pandharpur and Ribbon Club, Govt. Hospital, Pandharpur	NSS	2019-20	150
Rangoli competition on importance of voting	SVERI College of Engineering, Pandharpur	NSS	2019-20	25
Mini Marathon Session" jointly organized by Tehsil office Pandharpur	SVERI College of Engineering, Pandharpur and Tehsil office Pandharpur	NSS	2019-20	500
Voter Day Rally	SVERI College of Engineering, Pandharpur	NSS	2019-20	100
Shivaji Maharaj Jayanti and Blood Donation Camp	SVERI College of Engineering, Pandharpur	NSS	2019-20	100

COLLEGE OF ENGINEERING PANDHARPUR

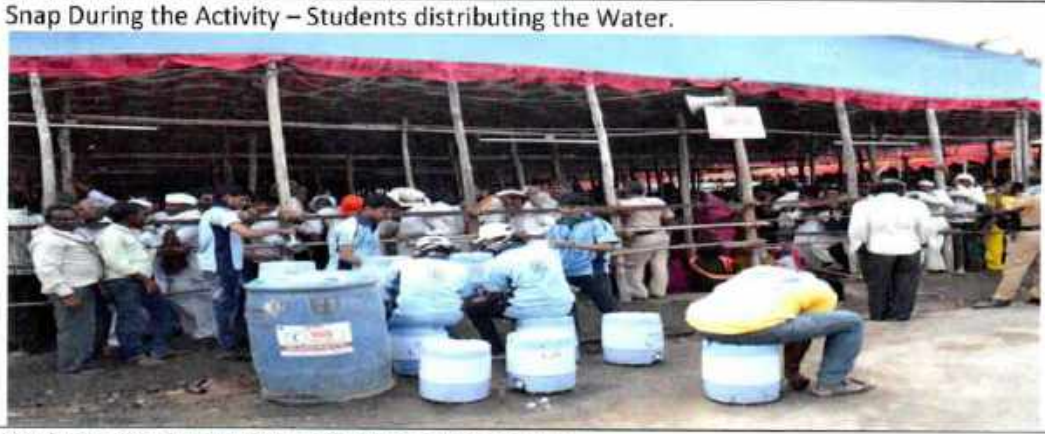
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** Water Distribution Camp During *"Ashadhi-Wari"*
- **Date:** 26.07.2015 to 28.07.2015
- **No. of Participants:** 190
- **Brief report:** Our college NSS unit has organized Water Distribution Camp During *"Ashadhi-Wari"* from 26.07.2015 to 28.07.2015. For this event total 190 students were participated from different departments. During this activity students distributed the water to devotees standing in the queue and also carried out the counseling in terms of cleanliness. Through this activity students got awareness about the need of Social Work.

Snap During the Activity – Students distributing the Water.



Students distributing the water at another centre.

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity : "POLICE MITRA" During "Ashadhi Ekadashi" and "Magh Wari".**
- **Date:** 26/07/2015 to 28/07/2015, 18/02/2016 to 19/02/2016
- **No. of Participants :** 300
- **Brief report:** Our college NSS unit has worked as **"POLICE MITRA" During "Ashadhi Ekadashi" and "Magh Wari"** in the month of July, 2015 and Feb. 2016. For this event total 300 students participated from different departments. During this activity students worked in coordination with Police Department to maintain the discipline. Through this activity students understood the importance of discipline and ways of maintaining it.

Snap During Activity (Students are helping Police)

Guidance By Police People to Students

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity :** Swachha Bharat Pandharwada
- **Date:**01.08.2015 to 15.08.2015
- **No. of Participants :** 100
- **Brief report:** Our college NSS unit has organized Swaccha Bharat Abhiyan on the occasion of Swaccha Bharat Pakhwada (15 Days) in the month of August, 2015. For this event total 100 students participated from different departments. This activity made the students to understand the need of cleaning.

Snap During Activity (Cleaning by Girl Students)

Snap During Activity (Cleaning by Boys and Staff-members)

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity:** Blood Donation Camp
- **Date:** 15.09.2015 and 19.02.2016
- **No. of Participants** : 350
- **Brief report:** Our college NSS unit has organized Blood Donation Camp on the occasion of Engineers Day on 15/09/2015 and Chhatrapati Shivaji Maharaj Jayanti on 19.02.2016. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Pandharpur Blood Bank Pandharpur. For this event total 350 students were participated from different departments and donated blood. Through this activity students understand the importance of donating blood.

Blood Donation Camp Inauguration (Shiv Jayanti)

Blood Donation by students (Engineers Day)

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity :** NSS special camp at Kacharedwadi, Tal: Mangalwedha
- **Date:** 21.12.2015 to 27.12.2015
- **No. of Participants :** 70
- **Brief report:** Our college NSS unit has organized NSS special camp at Kacharedwadi from 21.12.2015 to 27.12.2015. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Gram Panchayat Kacharedwadi near Mangalwedha. For this event total 70 students were participated from different departments. Students have performed different social activities like swachhata abhiyan, tree plantation, street play act etc. in the Kacharedwadi village during special camp. With this activity students got connect with villagers as social connect.

Snap During Activity (Cleaning by Girl Students)

Snap During Activity (To save water act)

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity :** Poster Competition Event on the Occasion of International Womens Day
- **Date:** 08/03/2016
- **No. of Participants :** 50
- **Brief report:** Our college NSS unit has organized Poster Competition Event on the Occasion of International Womens Day in the month of March, 2016. For this event total 50 students participated from different departments. Through this activity students understand the importance of gender equality in the society.

Snap During Activity – Students Watching the Posters

Snap During Activity (Judging the Posters by Faculty Members)

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity :** World Water Week
- **Date:** 16.03.2016 to 22.03.2016
- **No. of Participants :** 50
- **Brief report:** Our college NSS unit has organized World Water Week in the month of March, 2016 from 16.03.2016 to 22.03.2016. For this event total 50 students participated from different departments. Through this activity students understand the importance water and need of its conservation.

Snap During Activity – Students Creating Awareness

Snap During Activity – Rally Organized by Students

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** International yoga day
- **Date:** 21.06.2016
- **No. of Participants**:500
- **Brief report**: Our college NSS unit has organized yoga session on the occasion of International yoga day on 21.06.2016. This event was organized by SVERIs College of Engineering Pandharpur. For this event total 500 students were participated from different departments. Through this activity students understand the importance about the physical, mental and spiritual benefits that can be derived by practicing yoga.

International yoga day inauguration

Snap during yoga session at Pandharpur

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

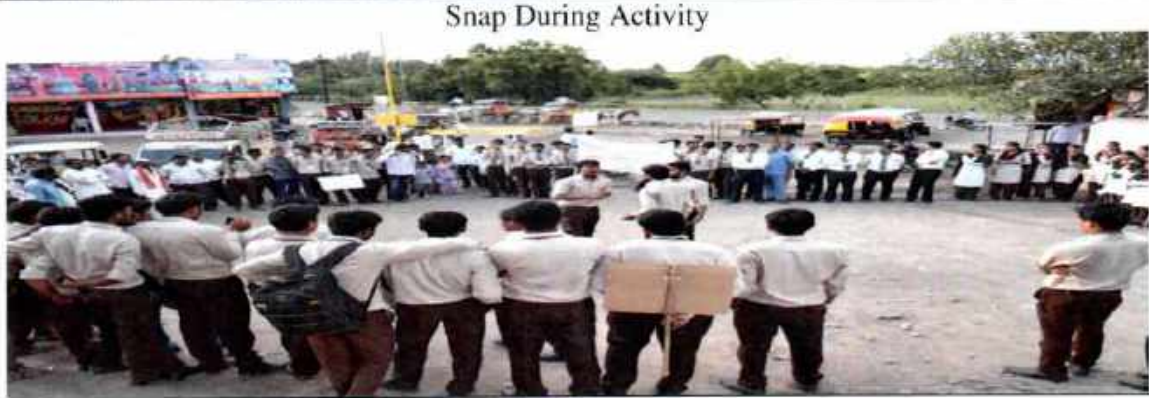
NSS Activity Report

- **Name of the Activity:** Swachh Bharat Pakhawada
- **Date:** 01.08.2016 to 15.08.2016
- **No. of Participants:** 100
- **Brief report:** Our college NSS unit has organized Swaccha Bharat Abhiyan on the occasion of Swacchata Pakhwada (15 Days) in the month of August, 2016. This event was organized jointly by SVERIs College of Engineering Pandharpur and Gopalpur Gram Panchayat Gopalpur. For this event total 100 students were participated from different departments. Through this activity students learn about cleanliness, hygiene, sanitation and the various diseases that are caused due to poor hygienic conditions.

Snap During Activity

Snap During Activity

Snap During Activity



NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity:** Blood Donation Camp at SVERI Campus on Independence Day
- **Date:** 15.08.2016
- **No. of Participants**: 250
- **Brief report**: Our college NSS unit has organized Blood Donation Camp on the occasion of Independence Day on 15.08.2016. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Pandharpur Blood Bank Pandharpur. For this event total 250 students were participated from different departments and donated blood. Through this activity students understand that an adequate amount of blood is needed in all health care facilities to meet the urgent need for patients facing trauma and other lifesaving procedures, such as blood transfusions – which saves millions of lives each year.

Blood Donation Camp Inauguration	Blood Donation by students

Borade

NSS Programme Officer

COLLEGE OF ENGINEERING * PANDHARPUR

B. Range

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity**: Tree plantation at Gopalpur
- **Date:** 20.08.2016
- **No. of Participants**: 50
- **Brief report**: Our college NSS unit has organized NSS special camp at Gopalpur Tree plantation on 20.08.2016. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Gram Panchayat Gopalpur near Pandhapur. For this event total 50 students were participated from different departments. Students have performed Tree Plantation activity in the Gopalpur village. Through this activity students got awareness about the importance of balanced ecosystem, importance of tree plantation.

Snap during Tree plantation

Barcode

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity:** NSS Special Camp at Khed Bhalvani
- **Date:** 18.12.2016 to 24.12.2016
- **No. of Participants**: 150
- **Brief report**: Our college NSS unit has organized NSS special camp at Khed Bhalvani from 18.12.2016 to 24.12.2016. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Gram Panchayat Khed Bhalvani near Pandhapur. For this event total 150 students were participated from different departments. Students have performed different social activities like swachhata abhiyan, tree plantation, street play act etc. at Khed Bhalvani village during special camp. This activity helps the student to grow individually and also as a group. It makes the students confident, develop leadership skills, and gain knowledge about different people from different walks of life.

Swachhata Abhiyan at Khed Bhalvani

Swachhata Abhiyan Activity by students

Borsode

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

B. Patil

Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** Blood Donation Camp at SVERI Campus of Shiv Jayanti
- **Date:** 19.02.2017
- **No. of Participants**: 200
- **Brief report**: Our college NSS unit has organized Blood Donation Camp on the occasion of Chhatrapati Shivaji Maharaj Jayanti on 19.02.2017. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Pandharpur Blood Bank Pandharpur. For this event total 200 students were participated from different departments and donated blood. Through this activity students understand the importance of donating blood.

Blood Donation Camp Inauguration

Blood Donation by Staff

Blood Donation Banner

Blood Donation by student

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** International Yoga Day
- **Date:** 21.06.2017
- **No. of Participants**: 500
- **Brief report**: Our college NSS unit organized 'Yoga Shibir' on the occasion of International Yoga Day on 21.06.2017. This camp was organized by SVERIs College of Engineering Pandharpur. For this event around 500 students participated from different Departments. Through this activity students understood the importance of healthy lifestyle which includes physical and mental fitness.

Inauguration of International Yoga Day

Snap during the Yoga Shibir

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** Water distribution camp and Police Mitra during "Ashadhi Wari"
- **Date:** 02/07/2017 to 04/07/2017
- **No. of Participants**: 200
- **Brief report**: Our college NSS unit organized 'Water distribution camp and Police Mitra' activity during 'Ashadhi Wari' in July 2017. This activity was organized by SVERI's College of Engineering, Pandharpur. For this event around 200 students participated from different Departments. Through this activity students understood the need of humanity and also the role of Police Department during huge gatherings.

Water Distribution during Ashadhi Wari

Police Mitra activity during Ashadhi Wari

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** Blood Donation Camp
- **Date:** 15.08.2017
- **No. of Participants**: 300
- **Brief report**: Our college NSS unit organized 'Blood Donation Camp' on the occasion of Independence Day i. e. 15.08.2017. This camp was organized by SVERI's College of Engineering Pandharpur. For this event around 300 students participated from different Departments. Through this activity students understood the importance blood donation for saving human lives.

Inauguration of Blood Donation Camp

Snap during Blood Donation Camp

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity:** Swachh Bharat Pakhwada
- **Date:** 01.09.2017 to 15.09.2017
- **No. of Participants**: 100
- **Brief report**: Our college NSS unit organized 'Swachh Bharat Pakhwada' activity in Village Gopalpur during September 2017. This activity was organized by SVERI's College of Engineering, Pandharpur. For this event around 100 students participated from different Departments. Through this activity students understood the importance of cleanliness in the society and associated health benefits.

Swachh Bharat Pakhwada in Gopalpur (September 2017)

Swachh Bharat Pakhwada in Gopalpur (September 2017)

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** Swachh Bharat Abhiyan at Gopalpur
- **Date:** 27/09/2017
- **No. of Participants**: 50
- **Brief report**: Our college NSS unit organized 'Swachh Bharat Abhiyan' activity in Village Gopalpur on 27/09/2017. This activity was organized by SVERI's College of Engineering, Pandharpur. For this event around 50 students participated from different Departments. Through this activity students understood the importance of cleanliness in the society and associated health benefits.

Swachh Bharat Abhiyan at Gopalpur

Swachh Bharat Abhiyan at Gopalpur

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity:** NSS special camp at Ozewadi, Pandharpur
- **Date:** 22/12/2017 to 28/12/2017
- **No. of Participants**: 150
- **Brief report**: Our college NSS unit organized 'Special NSS Camp' activity in Village Ozewadi during December 2017. This activity was organized by SVERI's College of Engineering, Pandharpur. For this event around 150 students participated from different Departments. Through this activity students understood the importance of cleanliness in the society and associated health benefits.

NSS special camp at Ozewadi (December 2017)

NSS Special camp at Ozewadi (December 2017)

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.(02186)- 282223, 9503103892
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
ISO 9001-2008 Certified Institute, Accredited by NBA, NAAC, TCS, Pune & The Institution of Engineers (India), Kolkata E-mail : coe@sveri.ac.in Website: www.sveri.ac.in

NSS Activity Report

- **Name of the Activity:** International Yoga Day
- **Date:** 21.06.2018
- **No. of Participants**: 500
- **Brief report**: Our college NSS unit organized 'Yoga Shibir' on the occasion of International Yoga Day on 21.06.2018. This camp was organized by SVERIs College of Engineering Pandharpur. For this event around 500 students participated from different Departments. Through this activity students understood the importance of healthy lifestyle which includes physical and mental fitness.

Inauguration of International Yoga Day

Snap during the Yoga

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , NAAC, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Nirmal Wari Nisarg Wari Abhiyan
- **Date:** 22.07.2018
- **No. of Participants**: 300
- **Brief report**: Our college NSS unit has organized Nirmal Wari Nisarg Wari Abhiyan on the occasion of Aashdi Wari on 22.7.2018. This event was jontly organized by SVERIs College of Engineering Pandharpur and PAH Soloapur University Solapur. For this event total 300 students were participated from different departments. Through this activity students understand the importance of cleanliness.

Nirmal Wari Nisarg Wari Abhiyan on 22.07.2018

Nirmal Wari Nisarg Wari Abhiyan at River Side

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity: MAHAWACKATHON-18.09.2018**
- **Date:** 18.09.2018
- **No. of Participants**: 50
- **Brief report**: Our college NSS unit has organized MAHAWACKATHON on 18.09.2018. Through this activity, people will understand rules and regulations of traffic rules. For this event total 50 students were participated from different departments. Through this activity students understand the importance of traffic rules and safety.

MAHAWACKATHON at college campus-18.09.2018

MAHAWACKATHON Rally at college campus to Gopalpur Road

NSS Programme Officer

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , NAAC, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Swachhata Hich Seva
- **Date:** 15.9.2018 – 2.10.2018
- **No. of Participants:** 150
- **Brief report:** Our college NSS unit has organized Swachhata Hich Seva (15 Days) in the month of Sept.-Oct., 2018. SVERI's College of Engineering has organized this event at Korti-Pandharpur. For this event total 150 students were participated from different departments. Through this activity students understand the importance of cleanliness of surrounding and nearby villages.

Swachhata Hich Seva (15.9.2018 – 2.10.2018)

Swachhata Hich Seva at Korti Village

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's

COLLEGE OF ENGINEERING, PANDHARPUR

Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

NSS Activity Report

- **Name of the Activity:** Surgical strike day
- **Date:** 29.9.2018
- **No. of Participants**: 100
- **Brief report**: Our college NSS unit has organized surgical strike day on the occasion of one year completion of surgical strike on 29.09.2018. For this event total 100 students were participated from different departments. Through this activity student gets motivated to awaken patriotism and to know the contribution of Indian Army.

SURGICAL STRIKE DAY CELEBRATED BY SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR (29.09.2018)

Felicitation of Chief Guest Rtd. Colonel Bonge

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Mahatma Gandhi Jayanti street play on Swachata
- **Date:** 02.10.2018
- **No. of Participants:** 50
- **Brief report:** Our college NSS unit has organized Mahatma Gandhi Jayanti street play on Swachata on the occasion of Mahatma Gandhi Jayanti on 02.10.2018. For this event total 50 students were participated from different departments. Through this activity students understand the importance of cleanliness.

Mahatma Gandhi Jayanti street play on Swachata (02.10.2018)

Mahatma Gandhi Jayanti street play

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** NSS Special Camp
- **Date:** 22.12.2018 – 28.12.2018
- **No. of Participants**: 180
- **Brief report**: Our college NSS unit has organized NSS special camp at Sonke from 22.12.2018 – 28.12.2018. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Gram Panchayat Sonke near Pandhapur. For this event total 180 students were participated from different departments. Students have performed different social activities like swachhata abhiyan, tree plantation, street play act etc. in the Sonke village during special camp. Through this activity students are aware about the importance of balanced ecosystem, social connect and joy of helping.

Snap during NSS Special Camp at Gram Panchayat Sonke

Group Snap at NSS Camp

NSS Programme Officer

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Marathi Language Promotion (15 days)
- **Date:** 01.01.2019 – 15.01.2019
- **No. of Participants**: 150
- **Brief report**: Our college NSS unit has organized Marathi Language Promotion (15 days) on 01.01.2019 – 15.01.2019. For this event total 150 students were participated from different departments. Under this activity three activities are conducted. Elocution Competition in Marathi Language, Essay Writing Competition on Importance of Marathi Language & Marathi Book Exhibition. Through this activity students understand the history of Marathi language.

Elocution Competition in Marathi Language

Marathi Book Exhibition

NSS Programme Officer

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

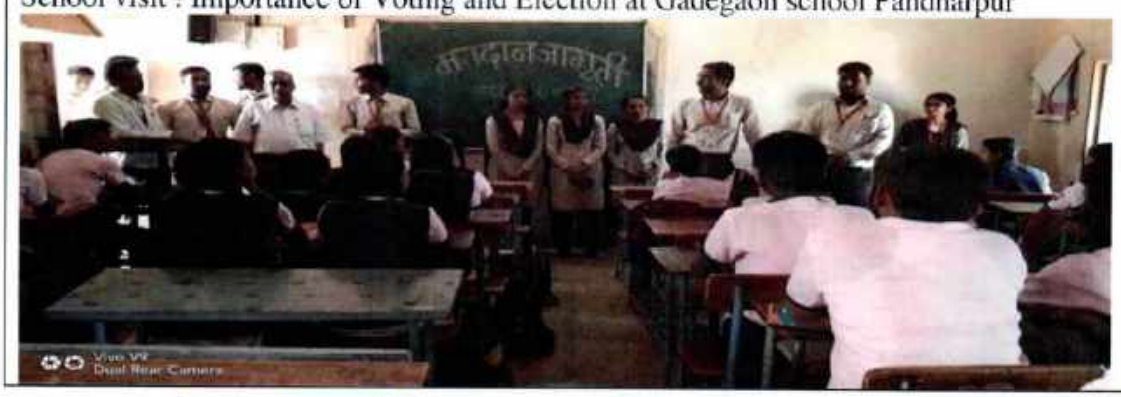
SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Lokshahi Pandharwada
- **Date:** 26.01.2019- 10.02.2019
- **No. of Participants**: 150
- **Brief report**: Our college NSS unit has organized Lokshahi Pandharwada on 26.01.2019- 10.02.2019. Under these activity three activities are carried out such as Voter Day Rally from Tehsil office to Shivaji Chowk Pandharpur, School visit: Importance of Voting and Election at Gadegaon school Pandharpur to increase awareness of election, Group discussion and debate competition regarding democracy election and good governance. For this event total 150 students were participated from different departments. Through this activity students understand the importance democracy election and good governance.

Voter Day Rally from Tehsil office to Shivaji Chowk Pandharpur

School visit : Importance of Voting and Election at Gadegaon school Pandharpur



NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Blood Donation Camp
- **Date:** 15.08.2018 & 19.02-2019
- **No. of Participants**: 250
- **Brief report**: Our college NSS unit has organized Blood Donation Camp times. First on the occasion of Independence Day 15.08.2018. Second on the occasion of Chhatrapati Shivaji Maharaj Jayanti 19.02.2019. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Pandharpur Blood Bank Pandharpur. For this event total 250 students were participated from different departments and donated blood. Through this activity students understand the importance of donating blood.

Blood Donation Camp on 15.08.2018

Blood Donation Camp on 19.02.2019

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Tree Plantation activity
- **Date:** 16.05.2019
- **No. of Participants**: 80
- **Brief report**: Our college NSS unit has organized Tree Plantation Activity within college campus dated on 16.05.2019. This Activity was organized by SVERIs College of Engineering Pandharpur. For this event total 80 students were participated from different departments. Students were actively participating in tree plantation. Through this activity students are aware about the importance of balanced ecosystem and tree plantation.

Snap during Tree Plantation activity

Snap during Tree Plantation activity alongside of road

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

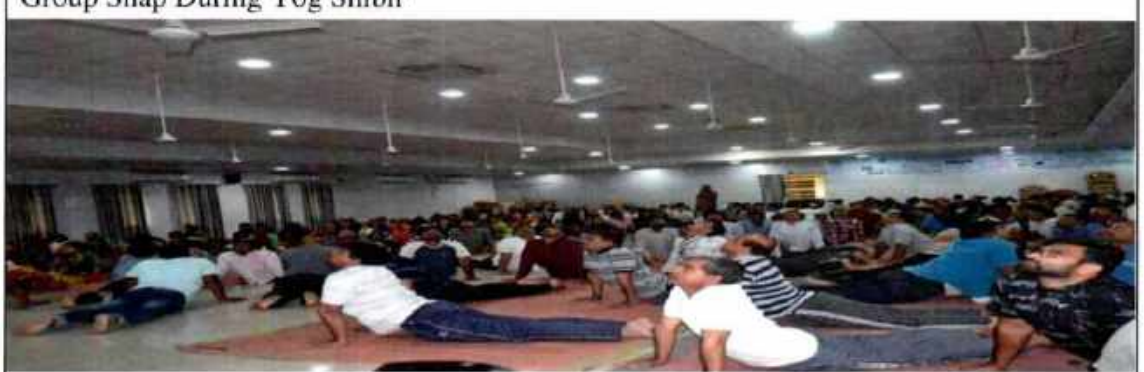
SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** International Yoga Day
- **Date:** 21.06.2019
- **No. of Participants**: 500
- **Brief report**: Our college NSS unit organized yog camp on the occasion of International Yoga Day Dated on 21.06.2019. This camp was organized by SVERIs College of Engineering Pandharpur. For this event, 500 Students and Staffs were participated and doing various Asan like surya namaskar, Bramari etc. Through this activity students are understood the importance of Healthy life style which includes physical and mental fitness.

Snap during Inauguration of International Yoga Day

Group Snap During Yog Shibir



NSS Programme Officer

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Swach wari swasth wari nirmal wari harit wari
- **Date:** 11.07.2019 to 13.07.2019
- **No. of Participants**: 511
- **Brief report**: Our college NSS unit organized Swach wari swasth wari nirmal wari harit wari at Pandharpur from 11.07.2019 to 13.07.2019. This camp was organized by SVERI'S College of Engineering Pandharpur. For this event total 511 students were participated from different departments. Students was doing various activity like cleanness, Janjagurti etc. Through this activity students are aware about the importance of cleanness and tree plantation.

Swachhta around Loard Vithal Temple

Swachhta around along side of river

Street Play Act of tree plantation during wari

Newspaper Cutting

तुफान / क्रांती

कीर्तनात रंगला हरित वारीचा गजर

NSS Programme Officer

Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Jal Shakti Abhiyan
- **Date:** 22.07.2019
- **No. of Participants**: 50
- **Brief report**: Our college NSS unit organized Jal Shakti Abhiyan at our college premises dated on 22.07.2019. This Activity was organized by SVERIs College of Engineering Pandharpur. For this cent total 50 students were participated from different departments. Students have perfomed street play in the college campus. Through this activity students are aware about the importance of water in day today life.

Street Play act

Street Play 1

Street Play act 2

Street Play act 3

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Swachh Bharat Pakhwada
- **Date:** 01/08/2019 to 15/08/2019
- **No. of Participants**: 100
- **Brief report**: Our college NSS unit organized 'Swachh Bharat Pakhwada' activity in Village Gopalpur during August 2019. This activity was organized by SVERI's College of Engineering, Pandharpur. For this event around 100 students participated from different Departments. Through this activity students understood the importance of cleanliness in the society and associated health benefits.

Swachh Bharat Pakhwada at Gopalpur

Swachh Bharat Pakhwada at Gopalpur

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Sanvidhan Day special
- **Date:** 27.11.2019
- **No. of Participants**: 80
- **Brief report**: our college has organized the function on sanvidhan day to know rule from sanvidhan. For the same some experts Advocate are invited in campus for their speech. For this function 80 students were present. Through this function students are aware with sanvidhan.

Sanvidhan day celebration

स्वेरीत संविधान दिन साजरा

पंढरपूर :पंढरपूर- गोपाळपूर(ता. पंढरपूर) येथील स्वेरी तथा श्री विठ्ठल एज्युकेशन अॅण्ड रिसर्च इन्स्टिटयूटमध्ये 'संविधान दिन' साजरा करण्यात आला.

स्वेरीचे संस्थापक सचिव व इंजिनिअरिंगचे प्राचार्य डॉ. बी.पी. रोंगे यांच्या मार्गदर्शनाखाली व पटनूर सांगितले. तसेच उपस्थितांनी संविधान दिनाची प्रतिज्ञा घेतली. प्रशासन अधिकारी डॉ. रणजीत शिंदे यांनी देखील विद्यार्थ्यांना 'संविधान दिन' विषयी मार्गदर्शन केले. पाचेगाची स्वेरीचे केंद्रप्रमुख इन्चार्ज प्रा. एम.एम. पवार, सेमीकिकल इंजिनिअरिंगचे विभागप्रमुख डॉ. सचिन सोनवणे.

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , NAAC, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Sadbhavana Diwas Celebration
- **Date:** 20.08.2019
- **No. of Participants**: 100
- **Brief report**: Our college NSS unit has organized "Sadbhavana Diwas Celebration" on 20.08.2019.This Activity was organized by SVERIs College of Engineering Pandharpur. For this activity 100 students were participated from different departments. Through this activity students are understood the importance of national integration and the role of Humanity to understand each other.

Banner

Sadbhavana Diwas Celebration

NSS Programme Officer

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Blood Donation Camp
- **Date:** 15.08.2019
- **No. of Participants**: 300
- **Brief report**: Our college NSS unit organized NSS "Blood Donation Camp" on the occasion of Independence Day on 15.08.2019. This camp was organized by SVERI'S College of Engineering Pandharpur. For this event total 300 students were participated for the Blood Donation Camp. Through this activity students are understood about the importance of Blood Donation for saving Human Lives.

Inauguration of Blood Donation Camp

Snap During Blood Donation Camp

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Celebration of 150th Mahatma Gandhi Jayanti
- **Date:** 2.10.2019
- **No. of Participants**: All staff and student
- **Brief report**: Our college has organized an enlighten function for the students on the occasion of 150th jayanti of Mahatma Gandhi. On the the occasion we arranged the guest speaker who kept various aspect of Gandhi's life in front of the students. For these events all students were present. Through this event students aware of Gandhi's part in freedom of our country.

Celebration of 150th Mahatma Gandhi Jayanti

Speaker enlightening students

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** NSS Special Camp
- **Date:** 22.12.2019 to 29.12.2019
- **No. of Participants**: 170
- **Brief report**: Our college NSS unit has organized NSS special camp at Ranjani from 22.12.2019 to 29.12.2019. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Gram Panchayat Ranjani near Pandhapur. For this event total 170 students were participated from different departments. Students have perfomed different social activities like swachhata abhiyan, tree plantation, street play act etc. in the Ranjani village during special camp. Through this activity students are aware about the importance of balanced ecosystem, Social connect and contribution towards society.

Snap during swachhata abhiyan activity at Gram Panchayat Ranjani

Group Snap at NSS Camp

NSS Programme Officer

Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , NAAC, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** HIVAIDs Awareness session jointly organized by Red Ribbon Club, Gov. Hospital, Pandharpur.
- **Date:** 21.1.2020
- **No. of Participants**: 150
- **Brief report**: our college has organized jointly with Red Ribbon Club Gov. hospital Pandharpur. In this program important information about HIV disease is given by expert doctors. Through this program students are aware about HIV disease and there precautions.

HIVAIDs Awareness session

Inauguration of HIVAIDs Awareness session

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Rangoli Competion on importance of voting
- **Date:** 22.1.2020
- **No. of Participants**: 25
- **Brief report**: Our College has organized a Rangoli completion on the subject importance of voting. A student has shown their creativity thro ugh the excellent rangoli art and also gives massage on importance of voting. Total 25 students participated in the competition. Through this event students improve their creativity and also aware of importance of voting.

Rangoli Completion on importance of voting

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity**: Mini Marathon jointly organized by Pandharpur Tahasil Office, Pandharpur
- **Date:** 23.1.2020
- **No. of Participants**: 500
- **Brief report**: our college has organized jointly with tehsil office Pandharpur "Mini Marathon" on 23.1.2020. In this event total 500 students have participated. We are announced prizes for the winners. Through this event students are aware of importance of health and voter awareness.

NSS Programme Officer

Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to P. A. H. Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Voter Day Celebration (Voter day rally)
- **Date:** 25.01.2020
- **No. of Participants**: 100
- **Brief report**: Our college NSS unit has organized Voter Day Rally and Mini Marathon on the occasion of Voters Day on 25.01.2020. This event was organized jointly by SVERIs College of Engineering Pandharpur and Pandharpur Tahsil Office Pandharpur. For this event total 100 students were participated from different departments. Through this activity students understand the importance of vote in our democracy.

Snap Before Rally at Pandharpur Tahsil Office Pandharpur

Snap during Rally at Pandharpur

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal
College of Engineering,
PANDHARPUR

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

NSS Activity Report

- **Name of the Activity:** Shiv Jayanti and Blood Donation Camp
- **Date:** 19.02.2019
- **No. of Participants**: 153
- **Brief report**: Our college NSS unit has organized Blood Donation Camp on the occasion of Chhatrapati Shivaji Maharaj Jayanti on 19.02.2019. This camp was organized jointly by SVERIs College of Engineering Pandharpur and Pandharpur Blood Bank Pandharpur. For this event total 100 students were participated from different departments and donated blood. Through this activity students understand the importance of donating blood.

Blood Donation Camp Inaugurated by Hon. Shekhar Charegaonkar

Blood Donation by students

NSS Programme Officer

COLLEGE OF ENGINEERING PANDHARPUR

Principal

PRINCIPAL,
College of Engineering,
PANDHARPUR

Faculty Development towards Universal Human Values (UHV) initiative of AICTE

UHV Guidelines by AICTE

Phase I: Familiarising Policy Makers

A one-day meeting of NCC-IP Chairman / Convener with VC/Director/Principal is being organized by NCCIP for this.

Phase II: Preparing Faculty

Every institution is expected to prepare UHV Faculty in the ratio of 1:20 (1 faculty per 20 newly admitted students). Faculty from every teaching department are to be prepared and to teach UHV-I and UHV-II.. The following Faculty Development Programs (FDP) are being conducted throughout the country for this with the support from AICTE HQ and Regional Offices:

- 3-day FDP-SI (UHV) or 5-day online UHV FDP – Orientation to UHV for SIP
- 8-day UHV FDP – Details of UHV, essential for qualifying to teach UHV-I or UHV-II

For FDP Registration, please follow the link:

http://www.fdp-si.aicte-india.org/verifiedProgramDetailsList.php

For coordinating the value education activities, every institution is expected to make a UHV Cell with the Director/Principal as the chairperson and UHV trained senior faculty as members.

Phase III: Conducting the Student Induction Program

Every institution is expected to conduct the 3-week SIP under the guidance of the Director/Principal or Dean Students or a senior faculty member. For this, the institution is expected to make a SIP Cell [also known as Institute Induction Program Cell (IIPC)].

The SIP Cell will be responsible for planning, and then actively and successful implementation of the three-weeks mandatory Student Induction Program.

Please G012 SIP Handbook v2 for details.

Assessing the Implementation and Impact

AICTE will conduct periodic assessment to ascertain the implementation and impact of these activities.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- COEPR/2021-2022/0.0/34 Date:- 22/09/2021

OFFICE ORDER
Universal Human Values (UHV) Cell

As per the directives from AICTE, Universal Human Values (UHV) Cell is established in our Institute, as per the details given below:

Sr. No.	Name of the Member and Department	Designation in the Committee
1.	Dr. B. P. Ronge (Principal)	Chairperson
2.	Dr. R. N. Haridas (F.Y. B. Tech.)	Coordinator
3.	Prof. A. A. Shinde (Mech. Engg.)	Member
4.	Prof. S. M. Karve (E & TC Engg.)	Member
5.	Prof. D. D. Daphale (Electrical Engg.)	Member
6.	Prof. Ms. G. S. Sardeshmukh (CSE Dept.)	Member
7.	Prof. Ms. S. S. Patil (Civil Engg.)	Member
8.	Prof. Ms. S. A. Jagtap (MBA)	Member

The UHV Cell will work on preparation of UHV faculty members.

All the staff members are informed to take the note of the above and act accordingly.

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

CC:
1) All Committee Members
2) Campus In-charge
3) Deans
4) HODs
5) ftp
6) Website
7) Registrar
8) Office copy

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, **District**: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, **Toll Free No.**: 1800-3000-4131 **e-mail.**: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, **NAAC** Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- COEPR/2021-2022/0.0/133 Date:- 22/09/202

OFFICE ORDER
Students' Induction Program (SIP) Cell

As per the directives from AICTE, Students' Induction Program (SIP) Cell, also known as Institute Induction Program Cell (IIPC) is established in our Institute, as per the details given below:

Sr. No.	Name of the Member and Department	Designation in the Committee
1.	Prof. K. B. Patil	Chairperson (Dean Students)
2.	Dr. H. H. Pawar (F.Y. B. Tech.)	Coordinator
3.	Prof. A. B. Chounde(F.Y. B. Tech.)	Member
4.	Prof. S. D. Bhosale(F.Y. B. Tech.)	Member
5.	Prof. R. P. Nagane(F.Y. B. Tech.)	Member
6.	Prof. A. A. Shinde (DSY All Branches Coordinator)	Member

The SIP Cell will be responsible for planning, and actively and successful implementation of three weeks mandatory Students' Induction Program.

All the staff members are informed to take the note of the above and act accordingly.

B. Ronge

(Dr. B. P. Ronge)
PRINCIPAL

CC:

1) All Committee Members
2) Campus In-charge
3) Deans
4) HODs
5) ftp
6) Website
7) Registrar
8) Office copy

SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Tal.- Pandharpur- 413 304,Dist.- Solapur (Maharashtra)
Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in
(Approved by A.I.C.T.E., New Delhi and affiliated to Solapur University, Solapur)
NBA Accredited all Eligible UG Programmes and , **NAAC**, Accredited Institute,
Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute

Name of the Department:-F. Y. B. Tech.

Universal Human Values Course Completion Report

Sr. No.	Name of the Faculty	Course Duration
1	Dr. S. A. Lendave	27.09.2021 to 01.10.2021
2	Dr. R. N. Haridas	13.05.2020 to 17.05.2020
3	Dr. M. M. Awatade	18.10.2021 to 22.10.2021
4	Dr. H. H. Pawar	13.06.2019 to 16.06.2019
5	Dr. D. S. Choudhari	13.05.2020 to 17.05.2020
6	Mr. R. P. Nagane	27.09.2021 to 01.10.2021
7	/Prof. A. V. Malge	27.09.2021 to 01.10.2021
8	Mr. S.U. Bhanavase	18.10.2021 to 22.10.2021
9	Mr. P. B. Jare	08.11.2021 to 12.11.2021
10	Ms. N. B. Hande	27.09.2021 to 01.10.2021
11	Ms. S. R. Zadbuke	18.10.2021 to 22.10.2021
12	Mr. U. L. Anuse	04.10.2021 to 08.10.2021
13	Mr. Y. M. Khedkar	27.09.2021 to 01.10.2021
14	Mr. B. T. Gadade	04.10.2021 to 08.10.2021
15	Mr. S. D. Bhosale	13.06.2019 to 16.06.2019
16	Mr. A. B. Chounde	06.09.2021 to 10.09.2021
17	/Ms. A.M. Lotake	18.10.2021 to 22.10.2021
18	Ms. P. S. Honmute	15.09.2021 to 19.09.2021
19	Mr. P. D. Babar	27.09.2021 to 01.10.2021
20	Ms. Bhakti Ajinath Kalbhor	18.10.2021 to 22.10.2021
21	Ms. Rohini HaridasPatil	18.10.2021 to 22.10.2021
22	Mr. A. B. Randive	18.10.2021 to 22.10.2021

Sign of Dept. UHV Coordinator

Sign of H.O.D.

HEAD
Dept. of First Year Engg.
C.O.E. Pandharpur

F.No AICTE/FDP-SI/OnlineWorkshop/201/91820

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

Certificate of Participation

This is to certify that Dr. Satish Abhanga Lendave from SVERIs College of Engineering, Pandharpur has participated and successfully completed the 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 27 September, 2021 to 1 October, 2021.

Dr. Rajneesh Arora
Chairman
National Coordination Committee for Induction Program

Prof. Rajive Kumar
Member Secretary, AICTE

F.No AICTE/FDP-SI/OnlineWorkshop/217/92056

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

Certificate of Participation

This is to certify that Mr. Amol Bandu Chounde from SVERIs College of Engineering, Pandharpur has participated and successfully completed the 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 6 September, 2021 to 10 September, 2021.

Dr. Rajneesh Arora
Chairman
National Coordination Committee for Induction Program

Prof. Rajive Kumar
Member Secretary, AICTE

F.No AICTE/FDP-SI/OnlineWorkshop/217/94059

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

Certificate of Participation

This is to certify that Mrs. Anuja Makrand Lotake from Sveri College of Engineering Pandharpur, Solapur has participated and successfully completed the 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 18th October, 2021 to 22nd October, 2021.

Dr. Rajneesh Arora
Chairman
National Coordination Committee for Induction Program

Prof. Rajive Kumar
Member Secretary, AICTE

F.No AICTE/FDP-SI/OnlineWorkshop/201/91835

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

Certificate of Participation

This is to certify that Ms. Hande Neelam Bhima from College of Engineering, Pandharpur has participated and successfully completed the 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 27 September, 2021 to 1 October, 2021.

Dr. Rajneesh Arora
Chairman
National Coordination Committee for Induction Program

Prof. Rajive Kumar
Member Secretary, AICTE

F.No AICTE/FDP-SI/OnlineWorkshop/201/91838

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

Certificate of Participation

This is to certify that Prof. Rahul Pandurang Nagane from SVERIs College of Engineering, Pandharpur has participated and successfully completed the 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 27 September, 2021 to 1 October, 2021.

Dr. Rajneesh Arora
Chairman
National Coordination Committee for Induction Program

Prof. Rajive Kumar
Member Secretary, AICTE

F.No AICTE/FDP-SI/OnlineWorkshop/217/97485

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

Certificate of Participation

This is to certify that Mr. Shankar Uttam Bhanavase from Sveris College of Engineering, Pandharpur has participated and successfully completed the 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 18th October, 2021 to 22nd October, 2021.

Dr. Rajneesh Arora
Chairman
National Coordination Committee for Induction Program

Prof. Rajive Kumar
Member Secretary, AICTE

Curriculum of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

1.3.1. List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Mechanical Engineering		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2019-20	S.Y.B.Tech .(MECH)	Environmental Science
	T.E. (MECH)	Self-Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E. (MECH)	Industrial Quality Management, Software Engineering & cyber security
2018-19	S.E. (MECH)	Environmental Science
	T.E. (MECH)	Self-Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E. (MECH)	Industrial Quality Management, Software Engineering & cyber security
2017-18	S.E. (MECH)	Environmental Science
	T.E. (MECH)	Self-Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E. (MECH)	Industrial Quality Management, Software Engineering & cyber security
2016-17	S.E. (MECH)	Environmental Science
	T.E. (MECH)	Self-Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E. (MECH)	Industrial Quality Management, Software Engineering & cyber security

2015-16	S.E. (MECH)	Environmental Science
	T.E. (MECH)	Self-Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E. (MECH)	Industrial Quality Management, Software Engineering & cyber security

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

NAAC Accredited-2015, 'B' Grade (CGPA 2.62)

Name of the Faculty: Science & Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: MACHANICAL ENGINEERING

Name of the Course: S.Y. B. Tech. (Sem.- III & IV)

(Syllabus to be implemented from June, 2019)

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System structure of S.Y. B. Tech. ***Mechanical Engineering*** *W.E.F. 2019-20*

Semester 3

Theory Courses

Course code	*Name of Theory Course*	*Hrs./week*				*Credits*	*Examination Scheme*			
		L	*T*	*P*	D		*ISE*	*ESE*	*ICA*	*Total*
ME211	Applied Thermodynamics	3	-	-	-	3	30	70	-	100
ME212	Mechanics of Materials	3	-	-	-	3	30	70	-	100
ME213	Manufacturing Processes	3	-	-	-	3	30	70	-	100
ME214	Machine Drawing & CAD	3	-	-	-	3	30	70	-	100
ME215	Professional Elective-I	3	-	-	-	3	30	70	-	100
	Sub Total	**15**	**-**	**-**	**-**	**15**	**150**	**350**	**-**	**500**
MEV21	Environmental Sciences	1	-	-	-	-	-	-	-	-

Semester 3: Laboratory / Tutorial Courses

Course code	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME211	Applied Thermodynamics	-	-	-	-	-	-	-	-	-	-
ME212	Mechanics of Materials	-	1	-	-	1	-	-	-	25	25
ME213	Manufacturing Processes	-	-	2	-	1	-	-	25	25	50
ME214	Machine Drawing & CAD	-	-	-	4	2	-	50	-	50	100
ME215	Professional Elective-I	-	-	2	-	1	-	-	-	25	25
	Sub Total	**-**	**-**	**-**	**-**	**5**	**-**	**50**	**25**	**125**	**200**
	Grand Total	**15**	**01**	**04**	**04**	**20**	**150**	**425**		**125**	**700**

Abbreviations: *L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

Professional Elective-I: A. Microprocessors in Automations **B.** Internal Combustion Engines **C**. Composite Materials

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System structure of S.Y. B. Tech. ***Mechanical Engineering*** *W.E.F. 2019-20*

Semester 4

Course code	*Name of Theory Course*	*Hrs./week*				*Credits*	*Examination Scheme*			
		L	T	P	**D**		ISE	ESE	ICA	Total
ME221	Engineering Mathematics –III	3	-	-	-	3	30	70	-	100
ME222	Manufacturing Technology	3	-	-	-	3	30	70	-	100
ME223	Fluid Mechanics & Fluid Machines	3	-	-	-	3	30	70	-	100
ME224	Kinematics & Theory of Machines	3	-	-	-	3	30	70	-	100
ME225	Professional Elective-II	3	-	-	-	3	30	70	-	100
	Sub Total	**15**	**-**	**-**	**-**	**15**	**150**	**350**	**-**	**500**
MEV22	Environmental Sciences	1	-	-		-	-	-	-	-

Semester 4: Laboratory / Tutorial Courses

Course code	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME221	Engineering Mathematics –III	-	1	-	-	1	-	-	-	25	25
ME222	Manufacturing Technology	-	2	-	-	1	-	-	-	25	25
ME223	Fluid Mechanics & Fluid Machines	-	-	2	-	1	-	-	-	25	25
ME224	Kinematics & Theory of Machines	-	-	2	-	1	-	-	25	25	50
ME225	Professional Elective-II	-	-	2	-	1	-	-	-	25	25
ME 226	Mechanical Workshop-I	-	-	2	-	1	-	-	-	50	50
ME 227	Electrical Technology	-	-	2		1	-	-	25	25	50
	Sub Total	**-**	**01**	**12**	**-**	**07**	**-**	**50**		**200**	**250**
	Grand Total	**15**	**01**	**12**	**-**	**22**	**150**	**400**		**200**	**750**

Abbreviations: *L - Lectures, P –Practical, T- Tutorial, ISE - in Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-II: **A**. Mechatronic Systems **B.** Power Plant Engineering **C.** Solid Mechanics

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPURUNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

T.E. (Mechanical Engineering)
w. e. f. Academic Year 2018-19

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Structure of CBCS Curriculum for Third Year (Mechanical Engineering) w .e. f .2018-19

Semester I : Theory Courses

Course code	*Name of Theory Course*	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME311	Theory of Machine -II	3	-	-	-	3	30	70	-	100
ME312	Metrology and Mechanical Measurement	3	-	-	-	3	30	70	-	100
ME313	Metallurgy	3	-	-	-	3	30	70	-	100
ME314	Machine Design -I	3	-	-	-	3	30	70	-	100
ME315	Professional Elective -III	3	-	-	-	3	30	70	-	100
SLH31	Self Learning Course I -HSS	-	-	-	-	2	-	50		50
	Sub Total	**15**	**-**	**-**	-	**17**	**150**	**400**		**550**

Semester I: Laboratory / Tutorial Courses

Course code	*Name of Laboratory /Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME311	Theory of Machine -II	-	-	2	-	1	-	-	25	25	50
ME312	Metrology and Mechanical Measurement	-	-	2	-	1	-	-	-	25	25
ME313	Metallurgy	-	-	2	-	1	-	-	25	25	50
ME314	Machine Design -I	-	-	2	-	1	-	-	-	25	25
ME315	Professional Elective -III	-	-	2	-	1	-	-	-	25	25
ME316	Advanced Computer Programming -I	1	-	2	-	2	-	-	-	50	50
ME317	Workshop Practices -IV	-	-	2	-	1	-	-	-	50	50
	Sub Total	-	-	14	-	8	-	-	50	225	275
	Grand Total	**16**	**-**	**14**	-	**25**	**150**	**450**		**225**	**825**

Abbreviations:*L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

Professional Elective –III: Machine Tool Design, Material Handling System, Fluid Machinery & Fluid Power

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Structure of CBCS Curriculum for Third Year (Mechanical Engineering) w. e. f 2018-19

Semester II : Theory Courses

Course code	*Name of Theory Course*	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME321	Heat and Mass Transfer	3	-	-	-	3	30	70	-	100
ME322	Internal Combustion Engine	3	-	-	-	3	30	70	-	100
ME323	CAD-CAM & CAE	3	-	-	-	3	30	70	-	100
ME324	Machine Design -II	3	-	-	-	3	30	70	-	100
ME325	Professional Elective -IV	3	-	-	-	3	30	70	-	100
ME326	Self Learning Course II-Technical	-	-	-	-	2	-	50	-	50
	Sub Total	**15**	**-**	**-**	**-**	**17**	**150**	**400**	**-**	**550**

Semester II: Laboratory / Tutorial Courses

Course code	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME321	Heat and Mass Transfer	-	-	2	-	1	-	25	-	25	50
ME322	Internal Combustion Engine	-	-	2	-	1	-	-	-	25	25
ME323	CAD-CAM & CAE	-	-	2	-	1	-	-	-	25	25
ME324	Machine Design -II	-	-	2	-	1	-	-	25	25	50
ME325	Professional Elective - IV	-	-	2	-	1	-	-	-	25	25
ME327	Advanced Computing Techniques'-II	1	-	2	-	2	-	-	-	50	50
ME328	Workshop Practice –V	-	-	2	-	1	-	25#	-	25	50
	Sub Total	-	**-**	14	-	08	-	75		200	275
	Grand Total	**16**	-	**14**	-	**25**	**150**	**475**		**200**	**825**

Abbreviations: *L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

Professional Elective – IV: Experimental Stress Analysis, Mechanical Vibration, Tool engineering # Indicates practical Examination only.

- **Note –**

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed.
2. Industrial Training (evaluated at B.E. Sem.-I) of minimum 15 days shall be completed in any vacation after S.E. Sem.-II, may be Maximum in two slots but before B.E. Sem.-I & the report shall be submitted and evaluated in B.E. Sem.-I.
3. Students shall select one Self Learning Module at T.E. Sem. I and T.E. Sem. II each from Humanities and Social Sciences and Technical Groups Respectively.
4. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology.
5. Minimum four assignments for Self Learning Modules at T.E. Sem.-I be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department.
6. **for TE Part I -**

A. Student can select a Self Learning Course from Solapur University, Solapur HSS Course List and appear for its examination as and when conducted by Solapur University, Solapur

OR

B. Student can enroll for National Programme on Technology Enhanced Learning (NPTEL) course, complete its assignments and appear for certificate examination as and when conducted by NPTEL.

For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur

More details about NPTEL are available at http://nptel.ac.in

7. ICA assessment shall be a continuous process based on student's performance in class tests, assignments, homework, subject Seminars, quizzes, laboratory books and their interaction and attendance for theory and laboratory sessions as applicable

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989
2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.
3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

SOLAPURUNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

S.E. (Mechanical Engineering) w.e.f. Academic Year 2017-18
T.E. (Mechanical Engineering) w.e.f. Academic Year 2018-19
B.E. (Mechanical Engineering) w.e.f. Academic Year 2019-20

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Structure of CBCS Curriculum for Third Year (Mechanical Engineering) wef 2019-20

Semester I : Theory Courses

Course code	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME411	Automatic Control Engineering	3	-	-	-	3	30	70	-	100
ME412	Refrigeration and Air Conditioning	3	-	-	-	3	30	70	-	100
ME413	Operations Research	3	-	-	-	3	30	70	-	100
ME414	Professional Elective-V	3	-	-	-	3	30	70	-	100
ME415	Free Elective-I	3	-	-	-	3	30	70	-	100
ME416	Project Work -I	-	-	-	-	-	-	-	-	-
ME417	Industrial Training	-	-	-	-	-	-	-	-	-
	Sub Total	**15**	**-**	**-**	**-**	**15**	**150**	**350**	**-**	**500**

Semester I : Laboratory / Tutorial Courses

Course code	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
								POE	OE		
ME411	Automatic Control Engineering	-	-	2	-	1	-	-	-	25	50
ME412	Refrigeration and Air Conditioning	-	-	2	-	1	-	-	25	25	25
ME413	Operations Research	-	-	2	-	1	-	-	-	25	25
ME414	Professional Elective-V	-	-	2	-	1	-	-	25	25	50
ME415	Free Elective-I	-	-	2	-	1	-	-	25	25	50
ME416	Project Work -I	-	-	6	-	3	-	-	-	25	25
ME417	Industrial Training	-	-	1	-	1	-	-	50	25	75
	Sub Total	-	-	17	-	09	-	-	125	-	300
	Grand Total	**16**	**-**	**17**	**-**	**24**	**150**	**475**		**175**	**800**

Abbreviations: *L - Lectures, P –Practical, T- Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-V: Finite Element Method, Piping Engineering, Production and Operational Management, Automobile Engineering, Costing and Cost Control

Free Elective-I: Industrial Robotics, Sugar Technology, Textile Engineering, Entrepreneurship Development, Process Equipments Design

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Structure of CBCS Curriculum for Third Year (Mechanical Engineering) wef 2019-20

Semester II : Theory Courses

Course code	*Name of Theory Course*	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME421	Industrial Engineering	3	-	-	-	3	30	70	-	100
ME422	Industrial and Quality Management	3	-	-	-	3	30	70	-	100
ME423	Professional Elective -VI	3	-	-	-	3	30	70	-	100
ME424	Free Elective-II	3	-	-	-	3	30	70	-	100
ME425	Project Work -II	-	-	-	-	-	-	-	-	
	Sub Total	12	-	-	-	12	120	280	-	400

Semester II: Laboratory / Tutorial Courses

Course code	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME421	Industrial Engineering	-	-	2	-	1	-	-	25	25	50
ME422	Industrial and Quality Management	-	-	2	-	1	-	-	-	25	25
ME423	Professional Elective -VI	-	-	2	-	1	-	25	-	25	50
ME424	Free Elective-II	-	-	2	-	1	-	25	25	25	75
ME425	Project Work -II	-	-	10	-	5	-	-	100	100	200
	Sub Total	-	-	18	-	9	-	200		200	400
	Grand Total	**12**	**-**	**18**	**-**	**21**	**120**	**480**		**200**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective VI: *Unconventional Machining, Mechatronics, Computational Fluid dynamics, Marketing Management, Process Engineering*

Free Elective II: *Software Engineering & Cyber Security, Agro Machine Engineering, Plastic Engineering, Economics for Engineers, Project Management.*

- **Note**:

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed.
2. Industrial Training (evaluated at B.E. Sem.-I) of minimum 30 days shall be completed in any vacation after S.E. Sem.-II, may be Maximum in two slots but before B.E. Sem.-I & the report shall be submitted and evaluated in B.E. Sem.-I
3. Appropriate subjects under Elective I & II may be added as per the requirement.
4. Project group for B.E. (Mechanical) Sem. I and Sem. II shall not be of more than **four** students.
5. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, and laboratory books and their interaction and attendance for theory and lab sessions as applicable.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

Name of the Faculty: Science & Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: Mechanical Engineering

Name of the Course: B.E. IV (Sem.–VII & VIII)

(Syllabus to be implemented from w.e.f. June 2019)

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

B.E. (Mechanical Engineering) Semester-II

ME422 Industrial and Quality Management

Teaching Scheme	**Examination Scheme**
Lectures – 3 Hours/week 3 Credits	**ESE–** 70 Marks
Practical – 2 Hour/week, 1 Credit	**ISE –** 30 Marks
	ISA- 25 Marks

Course Introduction:

This subject deals with introduction to general management principles and to functions of the management. The subject also includes the basic knowledge of different departments in an industrial organization.

The second section of this subject is related to quality management. The subject focuses on the basic concepts related to modern approach towards quality. It includes information of quality control tools and highlights the statistical control techniques used for process control in manufacturing industry.

Course Prerequisites:

1. Knowledge of industrial working environment through industrial training and Industrial visits.
2. Knowledge of metrology and measurements.
3. Knowledge of Communication, Applied Statistic

Course Objectives:

1. To give the students an overview of the general functions of Management applicable to industrial & other organizations

2. To give insight to the philosophy & techniques of quality management applicable to industry

Course Outcomes: At the end of this course, student will be able to

1. Describe and explain various management functions.
2. Enlist general principles of management and apply them in practice.
3. Describe concepts related to total quality management
4. Enumerate different statistical quality control tools and apply them for quality management.

Section I

Unit 1– Introduction to Management, Planning: No of lectures – 05

Prerequisite:

1. Knowledge of industrial working environment through industrial training and Industrial visits.
2. Aware about Profession Ethics/Manners in Industry.

Objectives:

1. To acquire knowledge about basic concepts of management functions and system approach.
2. To understand importance of planning, decision making, Social responsibility and ethics, etc. in Management.

Outcomes:

After completing this unit, student will be able to

1. Use various planning and decision making techniques in industrial environment.
2. Describe social responsibility and able to follow ethical practices in industrial management

PROPOSED STRUCTURE a nd draft syllabus

Unit Content:

Nature & purpose of Management. System approach to Management, Functions of Managers, Social responsibility & Ethics in Managing.

Planning: Meaning, Types of plans, steps in planning, planning process, decision making.

Content Delivery
Methods: Chalk and
Talk

Unit 2– Organising and Staffing No of lectures – 06

Prerequisite: Knowledge of basic functions of management.

Objectives:

1. To acquire knowledge about basic concepts related to organizing and staffing.

2. To understand importance of organization structure

Outcomes:

After completing this unit, student will be able

1. Apply the principles of organizing..
2. Describe and apply staffing and performance appraisal process.

Unit Content:

Organizing: Nature & purpose of organizing, Organization structure, Span & levels,

Departmentation, Authority delegation, decentralization.

Staffing: Definition, Human resource management. Selection, , Training & development, Performance appraisal.

Content Delivery Methods: Chalk and Talk

Unit 3– Leading and Controlling No of lectures – 06

Prerequisite:

1. Knowledge of basic concepts of management.
2. Knowledge of Planning, Organizing and Staffing.

PROPOSED STRUCTURE and draft syllabus

Objectives:

1. To acquire knowledge about human factors in management and theories of motivation.
2. To understand importance communication and its process in organization.

Outcomes:

After completing this unit, student will be able to

1. Explain role of human factors in management and different of theories of motivation.
2. Describe leadership styles, and communication process in organization

Unit Content:

Leading: Human factors in managing, Motivation, Theories, 'Carrot & Stick', Maslow's theory,

Leadership: Concept, styles, communication: process. Types- oral, written & nonverbal communication.

Controlling: Process of controlling, control techniques.

Content Delivery Methods:

Chalk and Talk

Unit 4–Introduction to Basic Departments in Industrial Organization No of lectures –03

Prerequisite:

1. Knowledge of industrial working environment through industrial training and Industrial visits.
2. Knowledge of basic concepts of management.

Objectives:

1. To acquire knowledge of basic departments in Industrial Organization

Outcomes:

After completing this unit, student will be able to

1. Explain role, nature and functions of Basic Departments in Industrial Organization

RUCTURE and draft syl as

Unit Content:

Production /Operations Management, Marketing Management, Financial Management: Role, Nature and Functions of each department.

Content Delivery Methods:
Chalk and Talk

Section II

Unit 5– Introduction to Quality No of lectures – 03

- **Prerequisite:** Basic knowledge of design and manufacturing processes.
  Basic knowledge of costing

Objectives:

1. To understand concept of quality and elements of quality.
2. To understand concepts of quality of design and quality of conformance.
3. To get knowledge of costs related to quality

Outcomes:

After completing this unit, student will be able to

1. describe various elements of quality
2. analyze all costs associated with quality.
3. Distinguish between quality of design and quality of conformance.

Unit Content:

Definition of Quality, Elements of quality, quality specifications. Factors affecting quality of design & quality of conformance, quality control, quality costs.

Content Delivery Methods: Chalk and Talk

and draft syllabus

Unit 6– Total Quality Management . No of lectures – 07

Prerequisite: Basic knowledge of quality, different meaning of quality. Working of an industry, basic mathematics.

Objectives:

1. To get the knowledge of different quality gurus and their contributions such as Involvement of employees, continuous improvement customer satisfaction etc.
2. To get knowledge of different tools of quality control

Outcomes:

After completing this unit, student will be able to

1. Describe contributions of different quality gurus
2. To explain role employee's involvement, customer satisfaction, continuous improvement etc, in quality management.
3. Apply different tools of quality control for solving the problems in industry.

Unit Content:

Quality Gurus, Customer satisfaction, continuous process improvement, employee involvement, supplier partnership, Tools of quality control: Check sheets, graphs, Pareto analysis, cause & effect diagram, Scatter diagram, control charts.

Content Delivery Methods:

Black board, chalk, talk and power point presentation.

Unit 7–Statistical Process Control **No.** of lectures – 05

Prerequisite: Basic knowledge of statistics, tools and techniques.

Objectives:

1. To impart knowledge of statistical tools such as control charts, sampling techniques
2. To get knowledge of statistical process control and sampling inspection in quality control

Outcomes:

After completing this unit, student will be able to

1. Use the statistical techniques of control charts and acceptance sampling for statistical process control and quality control in manufacturing processes.

Unit Content:

Introduction to SPC, Control charts for variable & attributes, interpretation & applications of X,R,P & C charts, Process capability. Acceptance sampling, Sampling plans- types single & double, Operating characteristic curve, Producer & consumer risks. (Numerical treatment)

Content Delivery Methods:

Black board, chalk, talk.

Unit 8– Introduction to Various Techniques and Tools No of lectures – 05

Prerequisite: Introductory knowledge of total quality management

Objectives:

1. To acquaint the students to various modern concepts and tools being used in quality manage

Outcomes:

After completing this unit, student will be able to

1. Describe various recent concepts and tools being used for quality management in industry.

PROPOSED STRUCTURE and draft syllabus

Unit Content:
Introduction to Benchmarking, Quality Management Systems, Environmental Management System, Quality function deployment, Six Sigma, FMEA, Total Productive Maintenance, Quality Engineering, etc.

Content Delivery Methods: Black board, chalk, talk.

Term Work:
Minimum 8 assignments based on each topic out of which 2 case studies related to industry / Establishments.

Assignment should include seminar, visit report, survey, analysis & numerical problems, etc.

Text Books:

1. Essentials of Management – Koontz Weihrich By TMH
2. Principles of Management & Administration – D. Chandra Bose. PHI
3. Statistical Quality Control – M. Mahajan By DhanpatRai & Co.
4. Total Quality Management – Besterfield & Others PHI

Reference Books:

1) Principles of Management – Tripathy, Reddy by TMH

Punyashlok Ahilyadevi Holkar Solapur University, Solapur B.E.

(Mechanical Engineering) Semester- II

ME424 (A) Free Elective-II

Software Engineering & Cyber Security

Teaching Scheme	**Examination Scheme**
Lectures – 3 Hours/week, 3 Credits	**ESE–** 70 Marks
Practical – 1 Hour/week, 1 Credit	**ISE –** 30 Marks
	ISA- 25 Marks
	OE- 25 Marks

Course Introduction:

Software engineering is an engineering approach for software development. We can alternatively view it as a systematic collection of past experience. The experience is arranged in the form of methodologies and guidelines. A small program can be written without using software engineering principles. But if one wants to develop a large software product, then software engineering principles are indispensable to achieve a good quality software cost effectively. These definitions can be elaborated with the help of a building construction analogy.

Despite the threat of viruses and malware almost since the dawn of computing, awareness of the security and sanctity of data with computer systems didn't gain traction until the explosive growth of the internet, whereby the exposure of so many machines on the web provided a veritable playground for hackers to test their skills – bringing down websites, stealing data, or committing fraud. It's something we now call cybercrime. Combating this is a multi-disciplinary affair that spans hardware and software through to policy and people – all of it aimed at both preventing cybercrime occurring in the first place, or minimizing its impact when it does. This is the practice of cyber security. There is no silver bullet, however; cyber security is a constantly evolving, constantly active process just like the threats it aims to prevent.

Course Objectives:

The Course should enable the student

1. To be acquainted with the software Project development life cycle models.
2. To design and develop correct and robust software products.
3. To analyze business requirements pertaining to software development.
4. To be acquainted with Cyber security norms.

Course Outcomes:

At the end of the course students will be able to

1. Select a proper software life cycle model for design and development.
2. Prepare a prototype model
3. Focus on the fundamentals of developing a Software Project.
4. Get Software Requirement Specification from client, analyze, design and estimate the cost of development of a Software Project

SECTION-I

Unit 1: Introduction to Software Engineering (5Hrs.)

• **Prerequisite:**

• **Objectives:**

1. To understand Software Development Life Cycle and life cycle models
2. To understand Software Requirement Analysis and Specification

• **Outcomes: After completing this unit, students will be able to-**

1. Describe Software Development Life Cycle and life cycle models
2. Describe Software Requirement Analysis and Specification

• **Unit content:** Software Development Life Cycle, Life cycle models: Water fall model, Spiral model, Prototype model, Agile process model. Software Requirement Analysis and Specification: Value of Good SRS, Requirement Process, Requirements specification.

• **Content Delivering Methods:** Board, Chalk & talk, Computational facility, Power Point Presentation, Animations.

Unit 2: Design and Planning a Software Project (10 Hrs.)

• **Prerequisite:**

• **Objectives:**

1. To understand the design concepts like coupling, cohesion etc.
2. To understand function and object oriented design

• **Outcomes: After completing this unit, students will be able to-**

1. Implement the design concepts like coupling, cohesion etc.
2. Apply concepts like function and object oriented design

• **Unit content:** Design Concepts: Coupling, Cohesion, Open Closed Principle, Function-Oriented Design, Object Oriented Design, Detailed Design, Verification, Metrics and Planning.

• **Content Delivering Methods:** Board, Chalk & talk, Computational facility, Power Point Presentation, Animations.

Unit 3: Agile Project Management and Testing (5Hrs.)

• **Prerequisite:**

• **Objectives:**

1. To understand the Adaptive Project Management Life cycle.
2. To understand testing methods

• **Outcomes: After completing this unit, students will be able to-**

1. Apply the Adaptive Project Management Life cycle.
2. Implement various testing methods.

• **Unit content:** Introduction to APM, Implementation, Iterative Project Management Life Cycle, Adaptive Project Management Life Cycle, Adaptive & Integrating the APM toolkit. Testing Concepts, Testing Process , Black-Box Testing, White-Box Testing, Object Oriented Software testing methods, Functional testing, Unit testing, System testing, User satisfaction testing.

• **Content Delivering Methods:** Board, Chalk & talk, Computational facility, Power Point Presentation, Animations.

SECTION-II

Unit 4: Introduction to Computer Security (8 Hrs)

• **Prerequisite:**

• **Objectives:**

1. To understand the Secure System Planning and administration.
2. To understand Security policy requirements, accountability, assurance and documentation requirements

• **Outcomes: After completing this unit, students will be able to-**

1. Describe the Secure System Planning and administration.
2. Describe Security policy requirements, accountability, assurance and documentation requirements

• **Unit content:** Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity. Secure System Planning and administration, Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

• **Content Delivering Methods:** Board, Chalk & talk, Computational facility, Power Point Presentation, Animations.

Unit 5: Information security policies and procedures: (4Hrs)

• **Prerequisite:**

• **Objectives:**

1. To understand corporate policies
2. To understand process of developing policies

• **Outcomes: After completing this unit, students will be able to-**

1. Use corporate policies
2. Implement process of developing policies

• **Unit content:** Corporate policies- Tier 1, Tier 2 and Tier3 policies -process management-planning and preparation-developing policies-asset classification policy-developing standards.

• **Content Delivering Methods:** Board, Chalk & talk, Computational facility, Power Point Presentation, Animations.

Unit 6: Information security: (8Hrs)

• **Prerequisite:**

• **Objectives:**

1. To understand Role of information security professionals
2. To understand Information handling Tools of information security

• **Outcomes: After completing this unit, students will be able to-**

1. Describe role of information security professionals
2. Apply Information handling Tools of information security

• **Unit content:** fundamentals-Employee responsibilities- information classification-Information handling Tools of information security- Information processing-secure program administration. Organizational and Human Security: Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals.

• **Content Delivering Methods:** Board, Chalk & talk, Computational facility, Power Point Presentation, Animations.

Text Books

1. Pankaj Jalote's Software Engineering, A Precise Approach(Wiley Precise Textbook,WILEY INDIA)
2. An Integrated Approach to Software Engineering- 3rdedition: Pankaj Jalote (Narosa Publishers)
3.Debby Russell and Sr. G.T Gangemi, "Computer Security Basics (Paperback)", 2ndEdition,O' Reilly Media, 2006.

References Books:

1. Effective Project Management Traditional,Agile,Extreme ,Robert K. Wysocki WILEY INDIA,6th edition
2. Ian Sommerville,software engineering, pearson education Asia, 6th edition
3. Software Engineering Fundamentals –Ali Behforooz and Frederick j. Hudson (Oxford University Press) . Thomas R. Peltier, “Information Security policies and procedures: A Practitioner’sReference”, 2nd Edition Prentice Hall, 2004.
4. Kenneth J. Knapp, “Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions”, IGI Global, 2009.
5. Thomas R Peltier, Justin Peltier and John blackley, ”Information Security Fundamentals”, 2nd Edition, Prentice Hall, 1996
6. Jonathan Rosenoer, “Cyber law: the Law of the Internet”, Springer-verlag, 1997
7. James Graham, “ Cyber Security Essentials” Averbach Publication T & F Group.

Term Work:

In Tutorial Session, Students of Different Batches should be assigned Different Case Studies to Design & Implement products.

SOLAPURUNIVERSITY,SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

S.E. (Mechanical Engineering) w.e.f. Academic Year 2017-18

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

CBCS Curriculum for Second Year (Mechanical Engineering) WEF 2017-18

Semester I: Theory Courses

Course code	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME211	Analysis of Mechanical Elements	3	-	-	-	3	30	70	-	100
ME212	Applied Thermodynamics	3	-	-	-	3	30	70	-	100
ME213	Engineering Mathematics -III	3	-	-	-	3	30	70	-	100
ME214	Manufacturing Processes	3	-	-	-	3	30	70	-	100
ME215	Machine Drawing	3	-	-	-	3	30	70	-	100
	Sub Total	**16**	**-**	**-**	-	**16**	**150**	**350**	**-**	**500**
MEV21	Environmental Sciences	1	-	-	-	-	-	-	-	-

Semester I: Laboratory / Tutorial Courses

Course code	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	POE	OE	ICA	Total
ME211	Analysis of Mechanical Elements	-	1	-	-	1	-	-	-	25	25
ME212	Applied Thermodynamics	-	-	2	-	1	-	-	25	25	50
ME213	Engineering Mathematics -III	-	1	-	-	1	-	-	-	25	25
ME214	Manufacturing Processes	-	-	2	-	1	-	-	-	25	25
ME215	Machine Drawing	-	-	-	4	2	-	-	25	50	75
ME216	Professional Elective-I	1	-	2	-	2	-	25	-	25	50
ME217	Workshop Practices -II	-	-	2	-	1	-	-	-	50	50
	Sub Total	-	-	-	-	8	-	25	50	225	300
	Grand Total	**16**	**02**	**08**	**04**	**24**	**150**	**425**		**225**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-I: Computer Programming in C ++, Dot Net, General Proficiency.

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

CBCS Curriculum for Second Year (Mechanical Engineering) WEF 2017-18

Semester II: Theory Courses

Course code	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME221	Theory of Machine-I	3	-	-	-	3	30	70	-	100
ME222	Machine Tools & Processes	3	-	-	-	3	30	70	-	100
ME223	Fluid Mechanics	3	-	-	-	3	30	70	-	100
ME224	Electrical and Electronic Technology	3	-	-	-	3	30	70	-	100
ME225	Professional Elective-II	3	-	-	-	3	30	70	-	100
	Sub Total	**16**	**-**	**-**	**-**	**16**	**150**	**350**	**-**	**500**
MEV22	Environmental Sciences	1	-	-		-	-	-	-	-

Semester II: Laboratory / Tutorial Courses

Course code	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
								POE	OE		
ME221	Theory of Machine-I	-	-	2	-	1	-	-	-	25	25
ME222	Machine Tools & Processes	-	-	2	-	1	-	-	-	25	25
ME223	Fluid Mechanics	-	-	2	-	1	-	-	25	25	50
ME224	Electrical Technology and Electronics	-	-	2	-	1	-	-	-	25	25
ME225	Professional Elective-II	-	-	2	-	1	-	-	-	25	25
ME226	Computer Aided Machine Drawing	1	-	2	-	2	-	50	-	50	100
ME 227	Workshop Practices -III	-	-	2	-	1	-	-	-	50	50
	Sub Total	**-**	**-**	**14**	**-**	**07**	**-**	**75**		**225**	**300**
	Grand Total	**16**	**-**	**14**	**-**	**23**	**150**	**425**		**225**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-II: Computational Techniques & Numerical Methods, Simulation Techniques

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPURUNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

T.E. (Mechanical Engineering)
w. e. f. Academic Year 2018-19

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Structure of CBCS Curriculum for Third Year (Mechanical Engineering) w .e. f .2018-19

Semester I : Theory Courses

Course code	*Name of Theory Course*	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME311	Theory of Machine -II	3	-	-	-	3	30	70	-	100
ME312	Metrology and Mechanical Measurement	3	-	-	-	3	30	70	-	100
ME313	Metallurgy	3	-	-	-	3	30	70	-	100
ME314	Machine Design -I	3	-	-	-	3	30	70	-	100
ME315	Professional Elective -III	3	-	-	-	3	30	70	-	100
SLH31	Self Learning Course I -HSS	-	-	-	-	2	-	50		50
	Sub Total	**15**	**-**	**-**	-	**17**	**150**	**400**		**550**

Semester I: Laboratory / Tutorial Courses

Course code	*Name of Laboratory /Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME311	Theory of Machine -II	-	-	2	-	1	-	-	25	25	50
ME312	Metrology and Mechanical Measurement	-	-	2	-	1	-	-	-	25	25
ME313	Metallurgy	-	-	2	-	1	-	-	25	25	50
ME314	Machine Design -I	-	-	2	-	1	-	-	-	25	25
ME315	Professional Elective -III	-	-	2	-	1	-	-	-	25	25
ME316	Advanced Computer Programming -I	1	-	2	-	2	-	-	-	50	50
ME317	Workshop Practices -IV	-	-	2	-	1	-	-	-	50	50
	Sub Total	-	-	14	-	8	-	-	50	225	275
	Grand Total	**16**	**-**	**14**	-	**25**	**150**	**450**		**225**	**825**

Abbreviations:*L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

Professional Elective –III: Machine Tool Design, Material Handling System, Fluid Machinery & Fluid Power

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Structure of CBCS Curriculum for Third Year (Mechanical Engineering) w. e. f 2018-19

Semester II : Theory Courses

Course code	*Name of Theory Course*	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME321	Heat and Mass Transfer	3	-	-	-	3	30	70	-	100
ME322	Internal Combustion Engine	3	-	-	-	3	30	70	-	100
ME323	CAD-CAM & CAE	3	-	-	-	3	30	70	-	100
ME324	Machine Design -II	3	-	-	-	3	30	70	-	100
ME325	Professional Elective -IV	3	-	-	-	3	30	70	-	100
ME326	Self Learning Course II-Technical	-	-	-	-	2	-	50	-	50
	Sub Total	**15**	**-**	**-**	**-**	**17**	**150**	**400**	**-**	**550**

Semester II: Laboratory / Tutorial Courses

Course code	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
ME321	Heat and Mass Transfer	-	-	2	-	1	-	25	-	25	50
ME322	Internal Combustion Engine	-	-	2	-	1	-	-	-	25	25
ME323	CAD-CAM & CAE	-	-	2	-	1	-	-	-	25	25
ME324	Machine Design -II	-	-	2	-	1	-	-	25	25	50
ME325	Professional Elective - IV	-	-	2	-	1	-	-	-	25	25
ME327	Advanced Computing Techniques'-II	1	-	2	-	2	-	-	-	50	50
ME328	Workshop Practice –V	-	-	2	-	1	-	25#	-	25	50
	Sub Total	-	**-**	14	-	08	-	75		200	275
	Grand Total	**16**	-	**14**	-	**25**	**150**	**475**		**200**	**825**

Abbreviations: *L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

Professional Elective – IV: Experimental Stress Analysis, Mechanical Vibration, Tool engineering # Indicates practical Examination only.

- **Note –**

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed.
2. Industrial Training (evaluated at B.E. Sem.-I) of minimum 15 days shall be completed in any vacation after S.E. Sem.-II, may be Maximum in two slots but before B.E. Sem.-I & the report shall be submitted and evaluated in B.E. Sem.-I.
3. Students shall select one Self Learning Module at T.E. Sem. I and T.E. Sem. II each from Humanities and Social Sciences and Technical Groups Respectively.
4. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology.
5. Minimum four assignments for Self Learning Modules at T.E. Sem.-I be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department.
6. **for TE Part I -**

A. Student can select a Self Learning Course from Solapur University, Solapur HSS Course List and appear for its examination as and when conducted by Solapur University, Solapur

OR

B. Student can enroll for National Programme on Technology Enhanced Learning (NPTEL) course, complete its assignments and appear for certificate examination as and when conducted by NPTEL.

For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur

More details about NPTEL are available at http://nptel.ac.in

7. ICA assessment shall be a continuous process based on student's performance in class tests, assignments, homework, subject Seminars, quizzes, laboratory books and their interaction and attendance for theory and laboratory sessions as applicable

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989
2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.
3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

B.E. (Mechanical Engineering) w.e.f. Academic Year 2017-2018

(CGPA)

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System Structure of B.E (Mechanical Engineering) wef 2017-18

Semester I: Theory Courses

Sr. No.	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
1	Automatic Control Engineering	3	-	-	-	3	30	70	-	100
2	Operations Research	3	-	-	-	3	30	70	-	100
3	Refrigeration and Air Conditioning	3	-	-	-	3	30	70	-	100
4	Professional Elective - 3	3	-	-	-	3	30	70	-	100
5	Free Elective - I	3	-	-	-	3	30	70	-	100
	Sub Total	**15**	**-**	**-**	**-**	**15**	**150**	**350**	**-**	**500**

Semester I: Laboratory / Tutorial Courses

Sr. No.	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
								POE	OE		
1	Automatic Control Engineering	-	-	2	-	1	-	-	-	25	25
2	Operations Research	-	-	2	-	1	-	-	-	25	25
3	Refrigeration and Air Conditioning	-	-	2	-	1	-	-	25	25	50
4	Professional Elective - 3	-	-	2	-	1	-	-	25	25	50
5	Free Elective - I	-	2	-	-	1	-	-	-	25	25
6	Industrial Training	-	-	1	-	1	-	-	25	50	75
7	Project Work– I	-	-	4	-	2	-	-	-	50	50
	Sub Total	-	-	-	-	8	-	-	75	225	300
	Grand Total	**15**	**02**	**13**		**23**	**150**	**425**		**225**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-3: Finite Element Methods, Automobile Engineering, Process Engineering

Free Elective –I: Industrial Robotics, Sugar Engineering, Textile Engineering, and Entrepreneurship Development

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System Structure of B.E (Mechanical Engineering) wef 2017-18

Semester II: Theory Courses

Sr. No.	*Name of Theory Course*	*Hrs./week*				*Credits*	*Examination Scheme*			
		L	T	P	D		ISE	ESE	ICA	Total
1	Industrial and Quality Management	3	-	-	-	3	30	70	-	100
2	Industrial Engineering	3	-	-	-	3	30	70	-	100
3	Professional Elective - 4	3	-	-	-	3	30	70	-	100
4	Free Elective - II	3	-	-	-	3	30	70	-	100
	Sub Total	**12**	**-**	**-**	**-**	**12**	**120**	**280**	**-**	**400**

Semester II: Laboratory / Tutorial Course

Sr. No.	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
1	Industrial and Quality Management	-	-	2	-	1	-	-	-	25	25
2	Industrial Engineering	-	-	2	-	1	-	-	-	25	25
3	Professional Elective - 4	-	-	2	-	1	-	-	25	25	50
4	Free Elective - II	-	2	-	-	1	-	-	25	25	50
5	Project Work – II	-	-	8	-	4	-	-	100	100	200
6	General Proficiency	2	-	-	-	2	-	-	-	50	50
	Sub Total	**2**	**2**	**14**	**-**	**10**	**-**	**150**			**400**
	Grand Total	**14**	**2**	**14**	**-**	**22**	**120**	**430**		**250**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-4: Mechatronics, Computational Fluid Dynamics, Production and Operation Management

Free Elective –II: Software Engineering & cyber security, Agro Machine Engineering, Plastic Engineering and Economics for Engineers

Note :

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed..

2. Project group for B.E. (Mechanical) Sem. I and Sem. II shall not be of more than **four** students.

3. Practical / Tutorial load indicates the load per batch.

4. ICA assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.

5. For Elective -: To offer a particular subject as an Elective, minimum 15 students should opt for the same. Appropriate Electives Subjects may be added when required.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Semester-II

1. Industrial & Quality Management

Teaching Scheme:

Lecturers: 3 Hrs/ Week

Practical: 2 Hrs/ Week

Examination Scheme:

ISE-30 Marks

ESE -70 Marks

ICA- 25 Marks

Course Objective:

1. To give the students an overview of the general functions of Management applicable to industrial & other organizations
2. To give insight to the philosophy & techniques of quality management applicable to industry

Course Outcome:

Students will be able to –

1. Demonstrate various management functions.
2. Apply statistical tools to industrial / organizational problems.

Section I

Industrial Management

Unit1. Introduction to Management, Planning: 05

Nature & purpose of Management. System approach to Management, Function of Managers, Social responsibility & Ethics in Managing. Planning: Meaning, Types of plans, steps in planning, planning process, decision making.

Unit 2.Organising and Staffing: 06

Organizing: Nature & purpose of organizing, Organization structure, Span & levels, Departmentation , Authority delegation, decentralization. Staffing: Definition, Human resource management & selection, Performance appraisal, Training & development.

Unit 3.Leading and Controlling: 06

Leading: Human factors in managing, Motivation, Theories, 'Carrot & Stick', Maslow's theory, Hierarchy of needs, leadership, styles, communication: process. Types- oral, written & nonverbal. Controlling: Process of controlling, control techniques.

Unit 4.Introduction to Basic Departments in Industrial Organization: 03

Production /Operations Management, Marketing Management, Financial Management: Role, Nature and Functions of each department.

Section II

Quality Management

Unit 5. Introduction to Quality: 03

Definition of Quality, Elements of quality, quality specifications. Factors affecting quality of design & quality of conformance, quality control, quality costs.

Unit 6. Total Quality Management: 07

Quality Gurus, Customer satisfaction, continuous process improvement, employee involvement, supplier partnership, Tools of quality control: Check sheets, graphs, Pareto analysis, cause & effect diagram, Scatter diagram, control charts.

Unit 7. Statistical Process Control: 06

Introduction to SPC, Control charts for variable & attributes, interpretation & applications of X,R,P & C charts, Process capability. Acceptance sampling, Sampling plans- types single & double, Operating characteristic curve, Producer & consumer risks. (Numerical treatment only on P & C charts and on sampling plans)

Unit 8. Introduction to Various Techniques and Tools: 04

Benchmarking, Quality Management Systems, Environmental Management System, Quality function deployment, Six Sigma, FMEA, Taguchi's Quality Engineering, etc.

Term Work

Minimum 8 assignments based on each topic out of which 2 case studies related to industry / establishments.

Assignment should include seminar, visit report, survey, analysis & numerical problems, etc.

Text Books Recommended

1. Essentials of Management – Koontz Weihrich By TMH
2. Principles of Management & Administration – D. Chandra Bose. PHI
3. Statistical Quality Control – M. Mahajan By DhanpatRai & Co.
4. Total Quality Management – Besterfield & Others PHI

Reference Books Recommended

1. Principles of Management – Tripathy, Reddy

Free Elective –II

4.1 Software Engineering & Cyber Security

Teaching Scheme:
Lectures: 3 Lectures / weeks

Tutorial: 2 Hours / week

Examination Scheme:
ISE*-30 Marks*
ESE*-70 Marks*
ICA- 25 Marks
Oral Exam: 25 Marks

Course Objectives:

The Course should enable the student

1. To be acquainted with the software Project development life cycle models.
2. To design and develop correct and robust software products.
3. To analyze business requirements pertaining to software development.
4. To be acquainted with Cyber security norms.

Course Outcomes:

At the end of the course

1. a student will be able to select a proper software life cycle model for design and development.
2. a student will be able to prepare a prototype model
3. a student will be able to focus on the fundamentals of developing a Software Project.
4. a student will be able to get Software Requirement Specification from client, analyze, design and estimate the cost of development of a Software Project.
5. a student will be acquainted with the Cyber security norms

SECTION-I

Unit 1: Introduction to Software Engineering (6Hrs.)

Software Development Life Cycle, Life cycle models : Water fall model, Spiral model, Prototype model, Agile process model. Software Requirement Analysis and Specification: Value of Good SRS, Requirement Process, Requirements specification.

Unit 2: Design and Planning a software Project (10 Hrs.)

Design Concepts: Coupling, Cohesion, Open Closed Principle, Function-Oriented Design, Object Oriented Design, Detailed Design, Verification, Metrics. Planning a Software Project**:** Effort estimation, Project Schedule and Staffing ,Quality planning: Quality Concepts, Qualitative quality management planning. CMM project management process, Risk Management Planning, Project Monitoring Plan, Detailed Scheduling.

Unit 3: Agile Project Management and Testing (6Hrs.)

Introduction to APM, Implementation, Iterative Project Management Life Cycle, Adaptive Project Management Life Cycle, Adaptive & Integrating the APM toolkit. Testing Concepts , Testing Process , Black-Box Testing, White-Box Testing, Object Oriented Software testing methods, Functional testing, Unit testing, System testing, User satisfaction testing.

SECTION-II

Unit 4: Introduction to Computer Security (8 Hrs)

Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity. Secure System Planning and administration, Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

Unit 5: Information security policies and procedures: (4Hrs)

Corporate policies- Tier 1, Tier 2 and Tier3 policies -process management-planning and preparation-developing policies-asset classification policy-developing standards.

Unit 6: Information security:: (8Hrs)

Fundamentals-Employee responsibilities- information classification-Information handling-Tools of information security- Information processing-secure program administration. Organizational and Human Security: Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals.

Text Books-

1. Pankaj Jalote's Software Engineering, A Precise Approach(Wiley Precise Textbook, WILEY INDIA)
2. An Integrated Approach to Software Engineering- 3rdedition: Pankaj Jalote (Narosa Publishers)
3. Debby Russell and Sr. G.T Gangemi, "Computer Security Basics (Paperback)", 2ndEdition,O' Reilly Media, 2006.

References Books:

1. Effective Project Management Traditional,Agile,Extreme ,Robert K. Wysocki WILEY INDIA,6th edition
2. Ian Sommerville,software engineering, pearson education Asia, 6th edition
3. Software Engineering Fundamentals –Ali Behforooz and Frederick j. Hudson (Oxford University Press) . Thomas R. Peltier, "Information Security policies and procedures: A Practitioner'sReference", 2nd Edition Prentice Hall, 2004.
4. Kenneth J. Knapp, "Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions", IGI Global, 2009.
5. Thomas R Peltier, Justin Peltier and John blackley, "Information Security Fundamentals", 2nd Edition, Prentice Hall, 1996
6. Jonathan Rosenoer, "Cyber law: the Law of the Internet", Springer-verlag, 1997
7. James Graham, "Cyber Security Essentials" Averbach Publication T & F Group.

Term Work:

In Tutorial Session, Students of Different Batches should be assigned Different Case Studies to Design & Implement products.

SOLAPURUNIVERSITY,SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

S.E. (Mechanical Engineering) w.e.f. Academic Year 2017-18

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

CBCS Curriculum for Second Year (Mechanical Engineering) WEF 2017-18

Semester I: Theory Courses

Course code	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME211	Analysis of Mechanical Elements	3	-	-	-	3	30	70	-	100
ME212	Applied Thermodynamics	3	-	-	-	3	30	70	-	100
ME213	Engineering Mathematics -III	3	-	-	-	3	30	70	-	100
ME214	Manufacturing Processes	3	-	-	-	3	30	70	-	100
ME215	Machine Drawing	3	-	-	-	3	30	70	-	100
	Sub Total	**16**	**-**	**-**	-	**16**	**150**	**350**	**-**	**500**
MEV21	Environmental Sciences	1	-	-	-	-	-	-	-	-

Semester I: Laboratory / Tutorial Courses

Course code	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	POE	OE	ICA	Total
ME211	Analysis of Mechanical Elements	-	1	-	-	1	-	-	-	25	25
ME212	Applied Thermodynamics	-	-	2	-	1	-	-	25	25	50
ME213	Engineering Mathematics -III	-	1	-	-	1	-	-	-	25	25
ME214	Manufacturing Processes	-	-	2	-	1	-	-	-	25	25
ME215	Machine Drawing	-	-	-	4	2	-	-	25	50	75
ME216	Professional Elective-I	1	-	2	-	2	-	25	-	25	50
ME217	Workshop Practices -II	-	-	2	-	1	-	-	-	50	50
	Sub Total	-	-	-	-	8	-	25	50	225	300
	Grand Total	**16**	**02**	**08**	**04**	**24**	**150**	**425**		**225**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-I: Computer Programming in C ++, Dot Net, General Proficiency.

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

CBCS Curriculum for Second Year (Mechanical Engineering) WEF 2017-18

Semester II: Theory Courses

Course code	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
ME221	Theory of Machine-I	3	-	-	-	3	30	70	-	100
ME222	Machine Tools & Processes	3	-	-	-	3	30	70	-	100
ME223	Fluid Mechanics	3	-	-	-	3	30	70	-	100
ME224	Electrical and Electronic Technology	3	-	-	-	3	30	70	-	100
ME225	Professional Elective-II	3	-	-	-	3	30	70	-	100
	Sub Total	**16**	**-**	**-**	**-**	**16**	**150**	**350**	**-**	**500**
MEV22	Environmental Sciences	1	-	-		-	-	-	-	-

Semester II: Laboratory / Tutorial Courses

Course code	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
								POE	OE		
ME221	Theory of Machine-I	-	-	2	-	1	-	-	-	25	25
ME222	Machine Tools & Processes	-	-	2	-	1	-	-	-	25	25
ME223	Fluid Mechanics	-	-	2	-	1	-	-	25	25	50
ME224	Electrical Technology and Electronics	-	-	2	-	1	-	-	-	25	25
ME225	Professional Elective-II	-	-	2	-	1	-	-	-	25	25
ME226	Computer Aided Machine Drawing	1	-	2	-	2	-	50	-	50	100
ME 227	Workshop Practices -III	-	-	2	-	1	-	-	-	50	50
	Sub Total	**-**	**-**	**14**	**-**	**07**	**-**	**75**		**225**	**300**
	Grand Total	**16**	**-**	**14**	**-**	**23**	**150**	**425**		**225**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-II: Computational Techniques & Numerical Methods, Simulation Techniques

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

Mechanical Engineering

Structure of T.E. (Mechanical Engineering) w. e. f. from - 2016-17

TE
NEW (CGPA)

SOLAPUR UNIVERSITY, SOLAPUR.

Faculty of Engineering & Technology (Revised from 2014-2015)

Credit System structure of T.E. Mechanical W.E.F. 2016-2017

Semester I

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Theory of Machine –II	3	–	–	3	30	70	–	100
Heat and Mass Transfer	3	–	–	3	30	70	–	100
Metallurgy	3	–	–	3	30	70	–	100
Machine Design – I	3	–	–	3	30	70	–	100
Professional Elective - I	3	–	–	3	30	70	–	100
Self Learning (HSS)	–	–	–	2	–	50	–	50
Sub Total	15	–	–	17	150	400	–	550
Laboratory/ Workshop								
	–	–	–	–	–	ESE	–	–
						POE / OE		
Theory of Machine –II	–	–	2	1	–	– / 25	25	50
Heat and Mass Transfer	–	–	2	1	–	25 / –	25	50
Metallurgy	–	–	2	1	–	– / 25	25	50
Machine Design – I	–	–	2	1	–	– / –	25	25
Professional Elective - I	–	–	2	1	–	– / –	25	25
Advanced Computer Programming	1	–	2	2	–	– / –	25	25
Workshop Practice – IV	–	–	2	1	–	– / –	25	25
Sub Total	1	–	14	8	–	75	175	250
Grand Total	16	–	14	25	150	475	175	800

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)
Note: '#' indicates Practical exam only.

B Pawar

T.E. –Mechanical - Part-I
8.0 Self Learning (HSS)

Examination Scheme
Theory Paper : 50 Marks

Note: Syllabus is common for all branches of Engineering Faculty.

T.E.(Mech.)Part-II

Metrology & Mechanical Measurements

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

FACULTY OF ENGINEERING & TECHNOLOGY

MECHANICAL ENGINEERING

Syllabus Structure for

B.E. (Mechanical Engineering) w.e.f. Academic Year 2017-2018

(CGPA)

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System Structure of B.E (Mechanical Engineering) wef 2017-18

Semester I: Theory Courses

Sr. No.	Name of Theory Course	Hrs./week				Credits	Examination Scheme			
		L	T	P	D		ISE	ESE	ICA	Total
1	Automatic Control Engineering	3	-	-	-	3	30	70	-	100
2	Operations Research	3	-	-	-	3	30	70	-	100
3	Refrigeration and Air Conditioning	3	-	-	-	3	30	70	-	100
4	Professional Elective - 3	3	-	-	-	3	30	70	-	100
5	Free Elective - I	3	-	-	-	3	30	70	-	100
	Sub Total	**15**	**-**	**-**	**-**	**15**	**150**	**350**	**-**	**500**

Semester I: Laboratory / Tutorial Courses

Sr. No.	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
								POE	OE		
1	Automatic Control Engineering	-	-	2	-	1	-	-	-	25	25
2	Operations Research	-	-	2	-	1	-	-	-	25	25
3	Refrigeration and Air Conditioning	-	-	2	-	1	-	-	25	25	50
4	Professional Elective - 3	-	-	2	-	1	-	-	25	25	50
5	Free Elective - I	-	2	-	-	1	-	-	-	25	25
6	Industrial Training	-	-	1	-	1	-	-	25	50	75
7	Project Work– I	-	-	4	-	2	-	-	-	50	50
	Sub Total	-	-	-	-	8	-	-	75	225	300
	Grand Total	**15**	**02**	**13**		**23**	**150**	**425**		**225**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-3: Finite Element Methods, Automobile Engineering, Process Engineering

Free Elective –I: Industrial Robotics, Sugar Engineering, Textile Engineering, and Entrepreneurship Development

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System Structure of B.E (Mechanical Engineering) wef 2017-18

Semester II: Theory Courses

Sr. No.	*Name of Theory Course*	*Hrs./week*				*Credits*	*Examination Scheme*			
		L	T	P	D		ISE	ESE	ICA	Total
1	Industrial and Quality Management	3	-	-	-	3	30	70	-	100
2	Industrial Engineering	3	-	-	-	3	30	70	-	100
3	Professional Elective - 4	3	-	-	-	3	30	70	-	100
4	Free Elective - II	3	-	-	-	3	30	70	-	100
	Sub Total	**12**	**-**	**-**	**-**	**12**	**120**	**280**	**-**	**400**

Semester II: Laboratory / Tutorial Course

Sr. No.	*Name of Laboratory / Tutorial Course*	*Hrs./week*				*Credits*	*Examination Scheme*				
		L	*T*	*P*	D		*ISE*	*ESE*		*ICA*	*Total*
								POE	*OE*		
1	Industrial and Quality Management	-	-	2	-	1	-	-	-	25	25
2	Industrial Engineering	-	-	2	-	1	-	-	-	25	25
3	Professional Elective - 4	-	-	2	-	1	-	-	25	25	50
4	Free Elective - II	-	2	-	-	1	-	-	25	25	50
5	Project Work – II	-	-	8	-	4	-	-	100	100	200
6	General Proficiency	2	-	-	-	2	-	-	-	50	50
	Sub Total	**2**	**2**	**14**	**-**	**10**	**-**	**150**			**400**
	Grand Total	**14**	**2**	**14**	**-**	**22**	**120**	**430**		**250**	**800**

Abbreviations: *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

Professional Elective-4: Mechatronics, Computational Fluid Dynamics, Production and Operation Management

Free Elective –II: Software Engineering & cyber security, Agro Machine Engineering, Plastic Engineering and Economics for Engineers

Note :

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed..

2. Project group for B.E. (Mechanical) Sem. I and Sem. II shall not be of more than **four** students.

3. Practical / Tutorial load indicates the load per batch.

4. ICA assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.

5. For Elective -: To offer a particular subject as an Elective, minimum 15 students should opt for the same. Appropriate Electives Subjects may be added when required.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Semester-II

1. Industrial & Quality Management

Teaching Scheme:

Lecturers: 3 Hrs/ Week

Practical: 2 Hrs/ Week

Examination Scheme:

ISE-30 Marks

ESE -70 Marks

ICA- 25 Marks

Course Objective:

1. To give the students an overview of the general functions of Management applicable to industrial & other organizations
2. To give insight to the philosophy & techniques of quality management applicable to industry

Course Outcome:

Students will be able to –

1. Demonstrate various management functions.
2. Apply statistical tools to industrial / organizational problems.

Section I

Industrial Management

Unit1. Introduction to Management, Planning: 05

Nature & purpose of Management. System approach to Management, Function of Managers, Social responsibility & Ethics in Managing. Planning: Meaning, Types of plans, steps in planning, planning process, decision making.

Unit 2.Organising and Staffing: 06

Organizing: Nature & purpose of organizing, Organization structure, Span & levels, Departmentation , Authority delegation, decentralization. Staffing: Definition, Human resource management & selection, Performance appraisal, Training & development.

Unit 3.Leading and Controlling: 06

Leading: Human factors in managing, Motivation, Theories, 'Carrot & Stick', Maslow's theory, Hierarchy of needs, leadership, styles, communication: process. Types- oral, written & nonverbal. Controlling: Process of controlling, control techniques.

Unit 4.Introduction to Basic Departments in Industrial Organization: 03

Production /Operations Management, Marketing Management, Financial Management: Role, Nature and Functions of each department.

Section II

Quality Management

Unit 5. Introduction to Quality: 03

Definition of Quality, Elements of quality, quality specifications. Factors affecting quality of design & quality of conformance, quality control, quality costs.

Unit 6. Total Quality Management: 07

Quality Gurus, Customer satisfaction, continuous process improvement, employee involvement, supplier partnership, Tools of quality control: Check sheets, graphs, Pareto analysis, cause & effect diagram, Scatter diagram, control charts.

Unit 7. Statistical Process Control: 06

Introduction to SPC, Control charts for variable & attributes, interpretation & applications of X,R,P & C charts, Process capability. Acceptance sampling, Sampling plans- types single & double, Operating characteristic curve, Producer & consumer risks. (Numerical treatment only on P & C charts and on sampling plans)

Unit 8. Introduction to Various Techniques and Tools: 04

Benchmarking, Quality Management Systems, Environmental Management System, Quality function deployment, Six Sigma, FMEA, Taguchi's Quality Engineering, etc.

Term Work

Minimum 8 assignments based on each topic out of which 2 case studies related to industry / establishments.

Assignment should include seminar, visit report, survey, analysis & numerical problems, etc.

Text Books Recommended

1. Essentials of Management – Koontz Weihrich By TMH
2. Principles of Management & Administration – D. Chandra Bose. PHI
3. Statistical Quality Control – M. Mahajan By DhanpatRai & Co.
4. Total Quality Management – Besterfield & Others PHI

Reference Books Recommended

1. Principles of Management – Tripathy, Reddy

Free Elective –II

4.1 Software Engineering & Cyber Security

Teaching Scheme:
Lectures: 3 Lectures / weeks

Tutorial: 2 Hours / week

Examination Scheme:
ISE*-30 Marks*
ESE*-70 Marks*
ICA- 25 Marks
Oral Exam: 25 Marks

Course Objectives:

The Course should enable the student

1. To be acquainted with the software Project development life cycle models.
2. To design and develop correct and robust software products.
3. To analyze business requirements pertaining to software development.
4. To be acquainted with Cyber security norms.

Course Outcomes:

At the end of the course

1. a student will be able to select a proper software life cycle model for design and development.
2. a student will be able to prepare a prototype model
3. a student will be able to focus on the fundamentals of developing a Software Project.
4. a student will be able to get Software Requirement Specification from client, analyze, design and estimate the cost of development of a Software Project.
5. a student will be acquainted with the Cyber security norms

SECTION-I

Unit 1: Introduction to Software Engineering (6Hrs.)

Software Development Life Cycle, Life cycle models : Water fall model, Spiral model, Prototype model, Agile process model. Software Requirement Analysis and Specification: Value of Good SRS, Requirement Process, Requirements specification.

Unit 2: Design and Planning a software Project (10 Hrs.)

Design Concepts: Coupling, Cohesion, Open Closed Principle, Function-Oriented Design, Object Oriented Design, Detailed Design, Verification, Metrics. Planning a Software Project**:** Effort estimation, Project Schedule and Staffing ,Quality planning: Quality Concepts, Qualitative quality management planning. CMM project management process, Risk Management Planning, Project Monitoring Plan, Detailed Scheduling.

Unit 3: Agile Project Management and Testing (6Hrs.)

Introduction to APM, Implementation, Iterative Project Management Life Cycle, Adaptive Project Management Life Cycle, Adaptive & Integrating the APM toolkit. Testing Concepts , Testing Process , Black-Box Testing, White-Box Testing, Object Oriented Software testing methods, Functional testing, Unit testing, System testing, User satisfaction testing.

SECTION-II

Unit 4: Introduction to Computer Security (8 Hrs)

Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity. Secure System Planning and administration, Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

Unit 5: Information security policies and procedures: (4Hrs)

Corporate policies- Tier 1, Tier 2 and Tier3 policies -process management-planning and preparation-developing policies-asset classification policy-developing standards.

Unit 6: Information security:: (8Hrs)

Fundamentals-Employee responsibilities- information classification-Information handling-Tools of information security- Information processing-secure program administration. Organizational and Human Security: Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals.

Text Books-

1. Pankaj Jalote's Software Engineering, A Precise Approach(Wiley Precise Textbook, WILEY INDIA)
2. An Integrated Approach to Software Engineering- 3rdedition: Pankaj Jalote (Narosa Publishers)
3. Debby Russell and Sr. G.T Gangemi, "Computer Security Basics (Paperback)", 2ndEdition,O' Reilly Media, 2006.

References Books:

1. Effective Project Management Traditional,Agile,Extreme ,Robert K. Wysocki WILEY INDIA,6th edition
2. Ian Sommerville,software engineering, pearson education Asia, 6th edition
3. Software Engineering Fundamentals –Ali Behforooz and Frederick j. Hudson (Oxford University Press) . Thomas R. Peltier, "Information Security policies and procedures: A Practitioner'sReference", 2nd Edition Prentice Hall, 2004.
4. Kenneth J. Knapp, "Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions", IGI Global, 2009.
5. Thomas R Peltier, Justin Peltier and John blackley, "Information Security Fundamentals", 2nd Edition, Prentice Hall, 1996
6. Jonathan Rosenoer, "Cyber law: the Law of the Internet", Springer-verlag, 1997
7. James Graham, "Cyber Security Essentials" Averbach Publication T & F Group.

Term Work:

In Tutorial Session, Students of Different Batches should be assigned Different Case Studies to Design & Implement products.

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
Mechanical Engineering

Structure of S.E. (Mechanical Engineering) w.e.f. from2013-14

Semester-I

Sr. No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Analysis of Mechanical Elements	3	1			4	100	25			125
2	Applied Thermodynamics	3		2		5	100	25	25		150
3	Engineering Mathematics-III	3	1			4	100	25			125
4	Machine Tools and Processes	3		2		5	100	25			125
5	Machine Drawing	3			4	7	100	50			150
6	Computer Programming in C++	1		2		3		25		50	75
7	Workshop Practice- II			2		2		25		#25	50
Total		**16**	**2**	**8**	**4**	**30**	**500**	**200**	**25**	**75**	**800**
8	Environmental Science	1				1					

Semester-II

Sr. No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Theory of Machine – I	3		2		5	100	25			125
2	Manufacturing Processes	3		2		5	100	25			125
3	Fluid Mechanics	3		2		5	100	25	25		150
4	Numerical Methods	3		2		5	100	25			125
5	Electrical and Electronics Technology	3		2		5	100	25			125
6	Computer Aided Machine Drawing	1		2		3		50		50	100
7	Workshop Practice – III			2		2		50			50
Total		**16**		**14**		**30**	**500**	**225**	**25**	**50**	**800**
8	Environmental Science	1				1					

'#' indicates practical examination only

Notes:

1. The Practical batch shall be of 20 students. After formation of batches, if the number of students remaining is more than 9, a new batch shall be formed.
2. Practical / Tutorial load indicates the load per batch.
3. TW: Term work assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.
4. Industrial Training (B.E. Part 1) of minimum 30 days in one/two slot shall be completed in any vacation after SE Part-II but before BE Part-I & the report shall be submitted in BE Part-I.
5. For the subject '**Electrical and Electronics Technology'**, answer to the two sections must be written in separate answer books.

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

Mechanical Engineering

Structure of T.E. (Mechanical Engineering) w. e. f. from - 2016-17

TE
NEW (CGPA)

SOLAPUR UNIVERSITY, SOLAPUR.

Faculty of Engineering & Technology (Revised from 2014-2015)

Credit System structure of T.E. Mechanical W.E.F. 2016-2017

Semester I

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Theory of Machine –II	3	–	–	3	30	70	–	100
Heat and Mass Transfer	3	–	–	3	30	70	–	100
Metallurgy	3	–	–	3	30	70	–	100
Machine Design – I	3	–	–	3	30	70	–	100
Professional Elective - I	3	–	–	3	30	70	–	100
Self Learning (HSS)	–	–	–	2	–	50	–	50
Sub Total	15	–	–	17	150	400	–	550
Laboratory/ Workshop								
	–	–	–	–	–	ESE	–	–
						POE / OE		
Theory of Machine –II	–	–	2	1	–	– / 25	25	50
Heat and Mass Transfer	–	–	2	1	–	25 / –	25	50
Metallurgy	–	–	2	1	–	– / 25	25	50
Machine Design – I	–	–	2	1	–	– / –	25	25
Professional Elective - I	–	–	2	1	–	– / –	25	25
Advanced Computer Programming	1	–	2	2	–	– / –	25	25
Workshop Practice – IV	–	–	2	1	–	– / –	25	25
Sub Total	1	–	14	8	–	75	175	250
Grand Total	16	–	14	25	150	475	175	800

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)
Note: '#' indicates Practical exam only.

B Pawar

T.E. –Mechanical - Part-I
8.0 Self Learning (HSS)

Examination Scheme
Theory Paper : 50 Marks

Note: Syllabus is common for all branches of Engineering Faculty.

T.E.(Mech.)Part-II

Metrology & Mechanical Measurements

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
Mechanical Engineering
Structure of B.E. (Mechanical Engineering) w.e.f. from2015-16

Semester-I

Sr. No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Automatic Control Engineering	3		2		5	100	25			150
2	Operations Research	3		2		5	100	25			125
3	Refrigeration and Air Conditioning	3		2		5	100	25	25		125
4	Professional Elective - 3	3		2		5	100	25	25		150
5	Free Elective - I	3	2			5	100	25			125
6	Industrial Training			1		1		50	25		75
7	Project Work– I			4		4		50			50
Total		**15**	2	13		**30**	**500**	**225**	**75**	-	**800**

Professional Elective III	Finite Element Methods	Automobile Engineering	Process Engineering

Free Elective I	Industrial Robotics	Sugar Engineering	Textile Engineering	Entrepreneurship Development

Semester-II

Sr.No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Industrial and Quality Management	3		2		5	100	25			125
2	Industrial Engineering	3		2		5	100	25			125
3	Professional Elective - 4	3		2		5	100	25	25		150
4	Free Elective - II	3	2			5	100	25	25		150
5	Project Work – II			8		8		100	100		200
6	General Proficiency	2				2		50			50
Total		**14**	2	14		**30**	**400**	**250**	**150**	-	**800**

Professional Elective IV	Mechatronics	Computational Fluid Dynamics	Production and Operation Management

Free Elective II	Software Engineering & cyber security	Agro Machine Engineering	Plastic Engineering	Economics for Engineers

w.e.f. academic year 2015-16

Note –

1. The Practical batch shall be of 15 students. After formation of batches, if the number of students remaining is more than 7 a new batch shall be formed.
2. Project group shall not be of more than four students.
3. Practical / Tutorial load indicates the load per batch.
4. TW: Term work assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.
5. For Elective -: To offer a particular subject as an Elective, minimum 15 students should opt for the same. Appropriate Electives Subjects may be added when required.

Semester-II

1. Industrial & Quality Management

Teaching Scheme:

Lecturers: 3 Hrs/ Week

Practical: 2 Hrs/ Week

Examination Scheme:

Theory: 100 Marks

Term work: 25 Marks

Course Objective :

1. To give the students an overview of the general functions of Management applicable to industrial & other organizations
2. To give insight to the philosophy & techniques of quality management applicable to industry

Course Outcome :

Students will be able to –

1. Demonstrate various management functions.
2. Apply statistical tools to industrial / organizational problems.

Section I

Industrial Management

Unit1. Introduction to Management, Planning: **05**

Nature & purpose of Management. System approach to Management, Function of Managers, Social responsibility & Ethics in Managing.

Planning: Meaning, Types of plans, steps in planning, planning process, decision making.

Unit 2.Organising and Staffing: **06**

Organizing: Nature & purpose of organizing, Organization structure, Span & levels, Departmentation , Authority delegation, decentralization.

Staffing: Definition, Human resource management & selection, Performance appraisal, Training & development.

Unit 3.Leading and Controlling: **06**

Leading: Human factors in managing, Motivation, Theories, 'Carrot & Stick', Maslow's theory, Hierarchy of needs, leadership, styles, communication: process. Types- oral, written & nonverbal.

Controlling: Process of controlling, control techniques.

Unit 4.Introduction to Basic Departments in Industrial Organization: 03

Production /Operations Management, Marketing Management, Financial Management: Role, Nature and Functions of each department.

Section II

Quality Management

Unit 5. Introduction to Quality: 03

Definition of Quality, Elements of quality, quality specifications. Factors affecting quality of design & quality of conformance, quality control, quality costs.

Unit 6. Total Quality Management: 07

Quality Gurus, Customer satisfaction, continuous process improvement, employee involvement, supplier partnership, Tools of quality control: Check sheets, graphs, Pareto analysis, cause & effect diagram, Scatter diagram, control charts.

Unit 7. Statistical Process Control: 06

Introduction to SPC, Control charts for variable & attributes, interpretation & applications of X,R,P & C charts, Process capability. Acceptance sampling ,Sampling plans- types single & double, Operating characteristic curve, Producer & consumer risks. (Numerical treatment only on P & C charts and on sampling plans)

Unit 8. Introduction to Various Techniques and Tools: 04

Benchmarking, Quality Management Systems, Environmental Management System, Quality function deployment, Six Sigma, FMEA, Taguchi's Quality Engineering, etc.

Term Work

Minimum 8 assignments based on each topic out of which 2 case studies related to industry / establishments.

Assignment should include seminar, visit report, survey, analysis & numerical problems, etc.

Text Books Recommended

1. Essentials of Management – Koontz Weihrich By TMH
2. Principles of Management & Administration – D. Chandra Bose. PHI
3. Statistical Quality Control – M. Mahajan By DhanpatRai & Co.

4. Total Quality Management – Besterfield & Others PHI

Reference Books Recommended

1. Principles of Management – Tripathy, Reddy by TMH

Free Elective –II

4.1 Software Engineering & Cyber Security

Teaching Scheme :
Lectures : 3 Lectures / weeks
Tutorial : 2 Hours / week

Examination Scheme:
Theory Exam.: 100 Marks
Term work : 25 Marks
Oral Exam: 25 Marks

Course Objectives:

The Course should enable the student

1. To be acquainted with the software Project development life cycle models.
2. To design and develop correct and robust software products.
3. To analyze business requirements pertaining to software development.
4. To be acquainted with Cyber security norms.

Course Outcomes :

At the end of the course

1. a student will be able to select a proper software life cycle model for design and development.
2. a student will be able to prepare a prototype model
3. a student will be able to focus on the fundamentals of developing a Software Project.
4. a student will be able to get Software Requirement Specification from client, analyze, design and estimate the cost of development of a Software Project
5. a student will be acquainted with the Cyber security norms

SECTION-I

Unit 1: Introduction to Software Engineering (6Hrs.)

Software Development Life Cycle, Life cycle models : Water fall model, Spiral model, Prototype model, Agile process model. Software Requirement Analysis and Specification: Value of Good SRS, Requirement Process, Requirements specification.

Unit 2: Design and Planning a software Project (10 Hrs.)

Design Concepts: Coupling, Cohesion, Open Closed Principle, Function-Oriented Design, Object Oriented Design, Detailed Design, Verification, Metrics. Planning a Software Project**:** Effort estimation, Project Schedule and Staffing ,Quality planning: Quality Concepts, Qualitative quality management planning. CMM project management process, Risk Management Planning, Project Monitoring Plan, Detailed Scheduling.

Unit 3: Agile Project Management and Testing (6Hrs.)

Introduction to APM, Implementation, Iterative Project Management Life Cycle, Adaptive Project Management Life Cycle, Adaptive & Integrating the APM toolkit. Testing Concepts , Testing Process , Black-Box Testing, White-Box Testing, Object Oriented Software testing methods, Functional testing, Unit testing, System testing, User satisfaction testing.

SECTION-II

Unit 4: Introduction to Computer Security (8 Hrs)

Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity. Secure System Planning and administration, Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

Unit 5: Information security policies and procedures: (4Hrs)

Corporate policies- Tier 1, Tier 2 and Tier3 policies -process management-planning and preparation-developing policies-asset classification policy-developing standards.

Unit 6: Information security:: (8Hrs)

fundamentals-Employee responsibilities- information classification-Information handling-Tools of information security- Information processing-secure program administration. Organizational and Human Security: Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals.

Text Books-

1. Pankaj Jalote's Software Engineering, A Precise Approach(Wiley Precise Textbook, WILEY INDIA)

2. An Integrated Approach to Software Engineering- 3rdedition: Pankaj Jalote (Narosa Publishers)

3.Debby Russell and Sr. G.T Gangemi, "Computer Security Basics (Paperback)", 2ndEdition,O' Reilly Media, 2006.

References Books:

1. Effective Project Management Traditional,Agile,Extreme ,Robert K. Wysocki WILEY INDIA,6th edition
2. Ian Sommerville,software engineering, pearson education Asia, 6th edition
3. Software Engineering Fundamentals –Ali Behforooz and Frederick j. Hudson (Oxford University Press) . Thomas R. Peltier, "Information Security policies and procedures: A Practitioner'sReference", 2nd Edition Prentice Hall, 2004.

4. Kenneth J. Knapp, “Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions”, IGI Global, 2009.
5. Thomas R Peltier, Justin Peltier and John blackley, ”Information Security Fundamentals”, 2nd Edition, Prentice Hall, 1996
6. Jonathan Rosenoer, “Cyber law: the Law of the Internet”, Springer-verlag, 1997
7. James Graham, “ Cyber Security Essentials” Averbach Publication T & F Group.

Term Work:

In Tutorial Session, Students of Different Batches should be assigned Different Case Studies to Design & Implement products.

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
Mechanical Engineering

Structure of S.E. (Mechanical Engineering) w.e.f. from2013-14

Semester-I

Sr. No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Analysis of Mechanical Elements	3	1			4	100	25			125
2	Applied Thermodynamics	3		2		5	100	25	25		150
3	Engineering Mathematics-III	3	1			4	100	25			125
4	Machine Tools and Processes	3		2		5	100	25			125
5	Machine Drawing	3			4	7	100	50			150
6	Computer Programming in C++	1		2		3		25		50	75
7	Workshop Practice- II			2		2		25		#25	50
Total		**16**	**2**	**8**	**4**	**30**	**500**	**200**	**25**	**75**	**800**
8	Environmental Science	1				1					

Semester-II

Sr. No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Theory of Machine – I	3		2		5	100	25			125
2	Manufacturing Processes	3		2		5	100	25			125
3	Fluid Mechanics	3		2		5	100	25	25		150
4	Numerical Methods	3		2		5	100	25			125
5	Electrical and Electronics Technology	3		2		5	100	25			125
6	Computer Aided Machine Drawing	1		2		3		50		50	100
7	Workshop Practice – III			2		2		50			50
Total		**16**		**14**		**30**	**500**	**225**	**25**	**50**	**800**
8	Environmental Science	1				1					

'#' indicates practical examination only

Notes:

1. The Practical batch shall be of 20 students. After formation of batches, if the number of students remaining is more than 9, a new batch shall be formed.
2. Practical / Tutorial load indicates the load per batch.
3. TW: Term work assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.
4. Industrial Training (B.E. Part 1) of minimum 30 days in one/two slot shall be completed in any vacation after SE Part-II but before BE Part-I & the report shall be submitted in BE Part-I.
5. For the subject '**Electrical and Electronics Technology'**, answer to the two sections must be written in separate answer books.

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **any one** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

Mechanical Engineering

Structure of T.E. (Mechanical Engineering) w.e.f. from2014-15

Semester-I

Sr.No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Theory of Machine –II	3		2		5	100	25	25		150
2	Heat and Mass Transfer	3		2		5	100	25		25	150
3	Metallurgy	3		2		5	100	25	25		150
4	Machine Design – I	3		2		5	100	25			125
5	Professional Elective - I	3		2		5	100	25			125
6	Advanced Computer Programming-I	1		2		3		25			25
7	Workshop Practice – IV			2		2		25			25
8	Self Learning (HSS)						50				50
Total		**16**		**14**		**30**	**550**	**175**	**50**	**25**	**800**

Professional Elective I	Machine Tool Design	Fluid Machinery and Fluid Power	Material Handling Systems

Semester-II

Sr.No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Metrology and Mechanical Measurements	3		2		5	100	25			125
2	Internal Combustion Engine	3		2		5	100	25			125
3	CAD/CAM	3		2		5	100	25			125
4	Machine Design – II	3		2		5	100*	25	25		150
5	Professional Elective –II	3		2		5	100	25			125
6	Advanced Computing Techniques-II	1		2		3		25			25
7	Workshop Practice- V			2		2		25		#50	75
8	Self Learning (Technical)							50			50
Total		**16**		**14**		**30**	**500**	**225**	**25**	**50**	**800**

'#' indicates practical examination only

'*' indicates Open Book theory Examination

Professional Elective II	1)Experimental Stress Analysis	2)Power Plant and Energy Engineering	3)Tool Engineering	4) Mecanical Vibration

T.E. –Mechanical - Part-I
8.0 Self Learning (HSS)

Examination Scheme
Theory Paper : 50 Marks

Note: Syllabus is common for all branches of Engineering Faculty.

T.E.(Mech.)Part-II

Metrology & Mechanical Measurements

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
Mechanical Engineering
Structure of B.E. (Mechanical Engineering) w.e.f. from2015-16

Semester-I

Sr. No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Automatic Control Engineering	3		2		5	100	25			150
2	Operations Research	3		2		5	100	25			125
3	Refrigeration and Air Conditioning	3		2		5	100	25	25		125
4	Professional Elective - 3	3		2		5	100	25	25		150
5	Free Elective - I	3	2			5	100	25			125
6	Industrial Training			1		1		50	25		75
7	Project Work– I			4		4		50			50
Total		**15**	2	13		**30**	**500**	**225**	**75**	-	**800**

Professional Elective III	Finite Element Methods	Automobile Engineering	Process Engineering

Free Elective I	Industrial Robotics	Sugar Engineering	Textile Engineering	Entrepreneurship Development

Semester-II

Sr.No.	Subject	Teaching / Week					Examination Scheme				
		L	T	P	Dr	Total	TP	TW	OE	POE	Total
1	Industrial and Quality Management	3		2		5	100	25			125
2	Industrial Engineering	3		2		5	100	25			125
3	Professional Elective - 4	3		2		5	100	25	25		150
4	Free Elective - II	3	2			5	100	25	25		150
5	Project Work – II			8		8		100	100		200
6	General Proficiency	2				2		50			50
Total		**14**	2	14		**30**	**400**	**250**	**150**	-	**800**

Professional Elective IV	Mechatronics	Computational Fluid Dynamics	Production and Operation Management

Free Elective II	Software Engineering & cyber security	Agro Machine Engineering	Plastic Engineering	Economics for Engineers

w.e.f. academic year 2015-16

Note –

1. The Practical batch shall be of 15 students. After formation of batches, if the number of students remaining is more than 7 a new batch shall be formed.
2. Project group shall not be of more than four students.
3. Practical / Tutorial load indicates the load per batch.
4. TW: Term work assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.
5. For Elective -: To offer a particular subject as an Elective, minimum 15 students should opt for the same. Appropriate Electives Subjects may be added when required.

Semester-II

1. Industrial & Quality Management

Teaching Scheme:

Lecturers: 3 Hrs/ Week

Practical: 2 Hrs/ Week

Examination Scheme:

Theory: 100 Marks

Term work: 25 Marks

Course Objective :

1. To give the students an overview of the general functions of Management applicable to industrial & other organizations
2. To give insight to the philosophy & techniques of quality management applicable to industry

Course Outcome :

Students will be able to –

1. Demonstrate various management functions.
2. Apply statistical tools to industrial / organizational problems.

Section I

Industrial Management

Unit1. Introduction to Management, Planning: **05**

Nature & purpose of Management. System approach to Management, Function of Managers, Social responsibility & Ethics in Managing.

Planning: Meaning, Types of plans, steps in planning, planning process, decision making.

Unit 2.Organising and Staffing: **06**

Organizing: Nature & purpose of organizing, Organization structure, Span & levels, Departmentation , Authority delegation, decentralization.

Staffing: Definition, Human resource management & selection, Performance appraisal, Training & development.

Unit 3.Leading and Controlling: **06**

Leading: Human factors in managing, Motivation, Theories, 'Carrot & Stick', Maslow's theory, Hierarchy of needs, leadership, styles, communication: process. Types- oral, written & nonverbal.

Controlling: Process of controlling, control techniques.

Unit 4.Introduction to Basic Departments in Industrial Organization: 03

Production /Operations Management, Marketing Management, Financial Management: Role, Nature and Functions of each department.

Section II

Quality Management

Unit 5. Introduction to Quality: 03

Definition of Quality, Elements of quality, quality specifications. Factors affecting quality of design & quality of conformance, quality control, quality costs.

Unit 6. Total Quality Management: 07

Quality Gurus, Customer satisfaction, continuous process improvement, employee involvement, supplier partnership, Tools of quality control: Check sheets, graphs, Pareto analysis, cause & effect diagram, Scatter diagram, control charts.

Unit 7. Statistical Process Control: 06

Introduction to SPC, Control charts for variable & attributes, interpretation & applications of X,R,P & C charts, Process capability. Acceptance sampling ,Sampling plans- types single & double, Operating characteristic curve, Producer & consumer risks. (Numerical treatment only on P & C charts and on sampling plans)

Unit 8. Introduction to Various Techniques and Tools: 04

Benchmarking, Quality Management Systems, Environmental Management System, Quality function deployment, Six Sigma, FMEA, Taguchi's Quality Engineering, etc.

Term Work

Minimum 8 assignments based on each topic out of which 2 case studies related to industry / establishments.

Assignment should include seminar, visit report, survey, analysis & numerical problems, etc.

Text Books Recommended

1. Essentials of Management – Koontz Weihrich By TMH
2. Principles of Management & Administration – D. Chandra Bose. PHI
3. Statistical Quality Control – M. Mahajan By DhanpatRai & Co.

4. Total Quality Management – Besterfield & Others PHI

Reference Books Recommended

1. Principles of Management – Tripathy, Reddy by TMH

Free Elective –II

4.1 Software Engineering & Cyber Security

Teaching Scheme :
Lectures : 3 Lectures / weeks
Tutorial : 2 Hours / week

Examination Scheme:
Theory Exam.: 100 Marks
Term work : 25 Marks
Oral Exam: 25 Marks

Course Objectives:

The Course should enable the student

1. To be acquainted with the software Project development life cycle models.
2. To design and develop correct and robust software products.
3. To analyze business requirements pertaining to software development.
4. To be acquainted with Cyber security norms.

Course Outcomes :

At the end of the course

1. a student will be able to select a proper software life cycle model for design and development.
2. a student will be able to prepare a prototype model
3. a student will be able to focus on the fundamentals of developing a Software Project.
4. a student will be able to get Software Requirement Specification from client, analyze, design and estimate the cost of development of a Software Project
5. a student will be acquainted with the Cyber security norms

SECTION-I

Unit 1: Introduction to Software Engineering (6Hrs.)

Software Development Life Cycle, Life cycle models : Water fall model, Spiral model, Prototype model, Agile process model. Software Requirement Analysis and Specification: Value of Good SRS, Requirement Process, Requirements specification.

Unit 2: Design and Planning a software Project (10 Hrs.)

Design Concepts: Coupling, Cohesion, Open Closed Principle, Function-Oriented Design, Object Oriented Design, Detailed Design, Verification, Metrics. Planning a Software Project**:** Effort estimation, Project Schedule and Staffing ,Quality planning: Quality Concepts, Qualitative quality management planning. CMM project management process, Risk Management Planning, Project Monitoring Plan, Detailed Scheduling.

Unit 3: Agile Project Management and Testing (6Hrs.)

Introduction to APM, Implementation, Iterative Project Management Life Cycle, Adaptive Project Management Life Cycle, Adaptive & Integrating the APM toolkit. Testing Concepts , Testing Process , Black-Box Testing, White-Box Testing, Object Oriented Software testing methods, Functional testing, Unit testing, System testing, User satisfaction testing.

SECTION-II

Unit 4: Introduction to Computer Security (8 Hrs)

Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity. Secure System Planning and administration, Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

Unit 5: Information security policies and procedures: (4Hrs)

Corporate policies- Tier 1, Tier 2 and Tier3 policies -process management-planning and preparation-developing policies-asset classification policy-developing standards.

Unit 6: Information security:: (8Hrs)

fundamentals-Employee responsibilities- information classification-Information handling-Tools of information security- Information processing-secure program administration. Organizational and Human Security: Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals.

Text Books-

1. Pankaj Jalote's Software Engineering, A Precise Approach(Wiley Precise Textbook, WILEY INDIA)

2. An Integrated Approach to Software Engineering- 3rdedition: Pankaj Jalote (Narosa Publishers)

3.Debby Russell and Sr. G.T Gangemi, "Computer Security Basics (Paperback)", 2ndEdition,O' Reilly Media, 2006.

References Books:

1. Effective Project Management Traditional,Agile,Extreme ,Robert K. Wysocki WILEY INDIA,6th edition
2. Ian Sommerville,software engineering, pearson education Asia, 6th edition
3. Software Engineering Fundamentals –Ali Behforooz and Frederick j. Hudson (Oxford University Press) . Thomas R. Peltier, "Information Security policies and procedures: A Practitioner'sReference", 2nd Edition Prentice Hall, 2004.

4. Kenneth J. Knapp, “Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions”, IGI Global, 2009.
5. Thomas R Peltier, Justin Peltier and John blackley, ”Information Security Fundamentals”, 2nd Edition, Prentice Hall, 1996
6. Jonathan Rosenoer, “Cyber law: the Law of the Internet”, Springer-verlag, 1997
7. James Graham, “ Cyber Security Essentials” Averbach Publication T & F Group.

Term Work:

In Tutorial Session, Students of Different Batches should be assigned Different Case Studies to Design & Implement products.

1.3.1.List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Computer Science and Engineering		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2019-20	S.Y.B.Tech .(CSE)	Environmental Studies
	T.E.(CSE)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E.(CSE)	Information and Cyber Security
2018-19	S.E.(CSE)	Environmental Studies
	T.E.(CSE)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E.(CSE)	Information and Cyber Security
2017-18	S.E.(CSE)	Environmental Studies
	T.E.(CSE)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E.(CSE)	Information and Cyber Security
2016-17	S.E.(CSE)	Environmental Studies
	T.E.(CSE)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E.(CSE)	Information and Cyber Security

1.3.1.List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Computer Science and Engineering		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2015-16	S.E.(CSE)	Environmental Studies
	T.E.(CSE)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
	B.E.(CSE)	Information and Cyber Security

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF SCIENCE & TECHNOLOGY
Structure of Second Year B.Tech. (CSE) wef. 2019-2020

Semester – III

Course Code	Theory Course Name	Hrs./Week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
CS211	Applied Mathematics-I	3	1	--	4	30	70	25	125
CS212	Discrete Mathematical Structures	3	1	--	4	30	70	25	125
CS213	Data Communication	3	--	--	3	30	70	--	100
CS214	Digital Techniques	3	--	--	3	30	70	--	100
CS215	Computer Graphics	3	--	--	3	30	70	--	100
CS216	Advanced C Concepts	2	--	--	2	25	--	--	25
	Sub Total	18	2	--	20	175	350	50	575
	Laboratory / Workshop								
							ESE		
							POE		
CS213	Data Communication	--	--	2	1	--	50	25	75
CS214	Digital Techniques	--	--	2	1	--	50	25	75
CS215	Computer Graphics	--	--	2	1	--	--	25	25
CS216	Advanced C Concepts	--	--	4	2	--	50	25	75
	Sub Total	--	--	10	5	--	150	100	250
	Grand Total	**18**	**2**	**10**	**25**	**175**	**500**	**150**	**825**
ENV21	**Environmental Studies**	1	--	--	--	--	--	--	--

Semester – IV

Course Code	Theory Course Name	Hrs./Week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
CS221	Applied Mathematics-II	3	1	--	4	30	70	25	125
CS222	Theory of Computation	4	1	--	5	30	70	25	125
CS223	Microprocessors	3	--	--	3	30	70	--	100
CS224	Data Structures	3	--	--	3	30	70	--	100
CS225	Computer Networks	3	--	--	3	30	70	--	100
CS226	Object Oriented Programming through C++	2	--	--	2	25	--	--	25
	Sub Total	**18**	**2**	**--**	**20**	**175**	**350**	**50**	**575**
	Laboratory / Workshop								
							ESE		
							POE		
CS223	Microprocessors	--	--	2	1	--	50	25	75
CS224	Data Structures	--	--	4	2	--	50	25	75
CS225	Computer Networks	--	--	2	1	--	--	25	25
CS226	Object Oriented Programming through C++	--	--	2	1	--	50	25	75
	Sub Total	**--**	**--**	**10**	**5**	**--**	**150**	**100**	**250**
	Grand Total	**18**	**2**	**10**	**25**	**175**	**500**	**150**	**825**
ENV22	**Environmental Studies**	1	--	--	--				

Abbreviations: L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Exam.,
ESE- End Semester Exam, ICA - Internal Continuous Assessment, ISE - Internal Tests,
ESE - University Examination (Theory &/ POE &/Oral examination)
Note: '#' indicates Practical exam only.

पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥
PDF Reader Trial

Note :

Semester III and Semester IV – The Structure of S.Y. B.Tech (CSE) and S.Y. B.Tech (IT) is same. Therefore, paper will be common for both the programs.

1. Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.
2. Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining students exceeds 9, then a new batch shall be formed.
3. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
4. Student shall select one Self Learning Module at Third year Semester V and Semester VI.
5. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable.
6. Appropriate Professional Electives Subjects may be added when required.
7. Project group for B.E. (Computer Science and Engineering) Part I and Part II shall not be of more than **five** students.

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ
।। विद्यया संपन्नता ।।

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

COMPUTER SCIENCE & ENGINEERING

Structure & syllabus for

T.E. (Computer Science & Engineering)
w.e.f. Academic Year 2018-19

Choice Based Credit System

Choice Based Credit System Syllabus Structure of T.E.Computer Science and Engineering W.E.F. 2018-2019 ***Semester I***

Course Code	Theory Course / Name	Hrs./Week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
CS311	Operating System Concepts	3	--	---	3	30	70	--	100
CS312	System Programming	3	--	---	3	30	70	--	100
CS313	Database Engineering	4	--	---	4	30	70	-	100
CS314	Design and Analysis of Algorithms	3	1	---	4	30	70	25	125
CS315	Computer Organization	3	1	---	4	30	70	25	125
CS316	Java Programming	2	---	---	2	25	--	--	25
SLH31	Self Learning Module 1	--	---	---	2	--	50	--	50
	Sub Total	**18**	**02**		**22**	**175**	**400**	**50**	**625**
	Laboratory								
							ESE		
							POE	OE	
CS311	Operating System Concepts	---		2	1	---	50	--	25	75
CS312	System Programming	---		2	1	---	---	--	25	25
CS313	Database Engineering	---		2	1	---	50	--	25	75
CS316	Java Programming	---		4	2	---	50	--	25	75
	Sub Total	**---**	**---**	**10**	**5**		**150**		**100**	**250**
	Grand Total	**18**	**02**	**10**	**27**	**175**	**550**		**150**	**875**

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

Choice Based Credit System Syllabus Structure of T.E.Computer Science and Engineering W.E.F. 2018-2019 ***Semester II***

Course Code	Theory Course / Name	Hrs./Week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
CS321	Compiler Construction	4	--	--	4	30	70	--	100
CS322	Unix Operating System	3	--	--	3	30	70	--	100
CS323	Mobile Computing	3	1	--	4	30	70	25	125
CS324	Software Engineering	3	1	--	4	30	70	25	125
CS325	Mobile Application Development	3	--	_	3	30	70	--	100
CS 326	Programming in C# net	2	--	--	2	25	---	--	25
SLH 32	Self Learning Module 2	--	--	--	2		50	--	50
	Sub Total	**18**	**02**		**22**	**175**	**400**	**50**	**625**
	Laboratory								
							ESE		
							POE	**OE**	
CS321	Compiler Construction	--	--	2	1	---	--	---	25	25
CS322	Unix Operating System	--	--	2	1	---	---	---	25	25
CS325	Mobile Application Development	--	--	2	1	---	50	---	25	75
CS326	Programming in C# net	--	--	2	1	---	50	---	25	75
CS327	Mini Project	--	--	2	1	---	50	---	---	50
	Sub Total	**---**	**--**	**10**	**5**	**---**	**150**		**100**	**250**
	Grand Total	**18**	**02**	**10**	**27**	**175**	**550**		**150**	**875**

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

w. e. f. Academic Year 2018-19

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989
2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.
3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I
INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)

ii. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

P.A.H. SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

COMPUTER SCIENCE & ENGINEERING

Structure for

F.E. (All Branches) w.e.f. Academic Year 2016-17
S.E. (Computer Science & Engineering) w.e.f. Academic Year 2017-18
T.E. (Computer Science & Engineering) w.e.f. Academic Year 2018-19
B.E. (Computer Science & Engineering) w.e.f. Academic Year 2019-20

Choice Based Credit System

Semester I

Course Code	Theory Course Name	Hrs./week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
CS411	Advanced Computer Architecture	3	1	--	4	30	70	25	125
CS412	Distributed Systems	3	--	--	3	30	70	--	100
CS413	Modern Database Systems	4	--	--	4	30	70	--	100
CS 414A to CS 414C	Elective –I	3	--	--	3	30	70	--	100
CS 415A to CS 415C	Elective-II	3	1	--	4	30	70	25	125
CS416	# Programming with Python	2	--	--	2	--	--	25	25
	Sub Total	**18**	**02**		**20**	**150**	**350**	**75**	**575**
	Laboratory						**POE** **OE**		
CS412	Distributed Systems	--	--	2	1	--	-- --	25	25
CS413	Modern Database Systems	--	--	2	1	--	50 --	25	75
CS416	Programming with Python	--	--	2	1	--	50 --	--	50
CS417	Project Phase-I	--	--	4	2	--	50 --	25	75
CS418	Vocational Training	--	--		1	--	-- --	25	25
	Sub Total				6		**150** **--**	**100**	**250**
	Grand Total	**18**	**02**	**10**	**26**	**150**	**500**	**175**	**825**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)

Semester II

Course Code	Theory Course Name	Hrs./week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
CS421	Management Information System	3	1	--	4	30	70	25	125
CS422	Information and Cyber Security	3	--	--	3	30	70	--	100
CS423A to CS423C	Elective-III	3	1	--	4	30	70	25	125
CS424A to CS424C	Elective-IV	3	--	--	3	30	70	--	100
CS425	# Web Technology	2	--	--	2	25	--	--	25
	Sub Total	**14**	**02**	**--**	**16**	**145**	**280**	**50**	**475**
	Laboratory						**POE** **OE**		
CS422	Information and Cyber Security	--	--	2	1	--	50 --	25	75
CS425	Web Technology	--	--	4	2	--	50 --	25	75
CS424	Elective-IV	--	--	2	1		-- --	25	25
CS426	Project Phase-II	--	--	6	3	--	100 --	75	175
	Sub Total		--		**7**		**200**	**150**	**350**
	Grand Total	**14**	**02**	**14**	**23**	**145**	**480**	**200**	**825**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR
B.E. (COMPUTER SCIENCE & ENGINEERING)
Semester II

CS 422 – INFORMATION and CYBER SECURITY

Teaching Scheme	**Examination Scheme**
Lectures: 3 Hours/Week, 3 credits	ESE : 70 Marks
Practical : 2 Hour/Week, 1 credit	ISE: 30 Marks
	ICA : 25 Marks
	POE : 50 Marks

COURSE OBJECTIVES:

1. Extensive overview of cyber security issues, tools and techniques in cyber security domains.
2. Provide concepts of computer security, cryptography, secure protocols, detection and other security techniques
3. Provide understanding in essential techniques in protecting Information Systems, IT infrastructure
4. Introduce block chain technology.

COURSE OUTCOME:

At the end of this course, students will be able to

1. Apply security technologies and policies to protect digital information.
2. Identify & evaluate Information security threats &vulnerabilities in information system and apply security measures to real time scenario
3. Demonstrate the use of standards and cyber laws to enhance information security in the development process and infrastructure protection
4. Describe block chain technology

SECTION – I

Unit 1: Symmetric Ciphers **(5)**

Overview – Services, Mechanism and Attacks, OSI Security Architecture, A model for Network security, Classical Encryption techniques – Symmetric Cipher model, Substitution. Techniques, Transposition techniques, Rotor Machines.

Unit 2: Block Cipher and Data Encryption Standard **(6)**

Simplified DES, Block Cipher principles, The Data Encryption Standard, The strength of DES, Differential and Linear Cryptanalysis, Block Cipher design principles, Block Cipher Mode of Operation.

Unit 3 : Public Key Cryptography **(5)**

Public Key Cryptography and RSA – Principles of Public Key Cryptosystems, The RSA Algorithm, Key management - Other public key cryptosystems – Key Management, Diffie-Hellman Key Exchange.

Unit 4 : Message Authentication and HASH Functions: **(5)**

Authentication requirements, Authentication Functions, Message Authentication Codes, Hash Functions, security of Hash Functions and MACS Digital Signatures. Authentication Protocols– Digital Signatures, Authentication Protocols, Digital Signature Standard.

SECTION – II

Unit 5: IP Security and E-Mail Security **(7)**

IP Security Overview, IP Security Architecture, Authentication Header, Encapsulating Security payload, Combining Security Associations, Key Management, Secure Socket Layer and Transport Layer Security.

Electronic Mail Security – Secure Electronic Transaction, Pretty Good Privacy, S/MIME

Unit 6: Introduction to block chain **(7)**

Overview of block chain, public ledgers, bit coin, smart contracts, block in a block chain, transactions, DISTRIBUTED CONSENSUS, public vs private clock chain, understanding cyrptocurrency in block chain, permissioned model of block chain, overview of security aspect of block chain

Unit 7: Cyber law and forensic **(7)**

Introduction, Cyber security regulation, role of International law, the state and private sector in cyberspace, cyber security standards, the Indian cyberspace

Introduction to forensic, cyber evidence, web attack investigation, internet crime investigation, internet forensics

Internal Continuous Assessment (ICA) :

It should consist of the 08-10 practical based on following guidelines

1) Implementation of Substitution Cipher
2) Implementation of Poly alphabetic Cipher (Vigenere Cipher and Vernam Cipher)
3) Implementation of Transposition Cipher
4) Implementation of Play fair Cipher
5) Implementation of Secure file transfer in Client/Server environment (use any one of above method for encryption and decryption).
6) Write a program to simulate RSA algorithm.
7) Install and understand docker container
8) Create and deploy a block chain network
9) Study different cybercrimes and implement a system to detect any one cyber crime

Text Book:

1. Williams Stallings–Cryptography and Network security principles and practices. Pearson Education (LPE) (Unit I to V)
2. Melanie Swan :Blockchain: Blueprint for a New Economy :2015
3. Neena godbole “information system security”

Reference Books:

1. Behroz A. Forozan, Debdeep Mukhopadhyay, “Cyber and Network Security” McGraw Hill Education, 2nd Edition.
2. Atul Kahate, “Cyptography and Network Security” McGraw Hill Education 3rd Edition
3. Schneir, Bruce, “Applied Cryptography: Protocols and Algorithms”

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

COMPUTER SCIENCE AND ENGINEERING

Syllabus Structure for

S.E. (Computer Science & Engineering) w.e.f. Acad. Year 2017-18

T.E. (Computer Science & Engineering) w.e.f. Acad. Year 2018-19

B.E. (Computer Science & Engineering) w.e.f. Acad. Year 2019-20

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology
Second Year Computer Science and Engineering

Choice Based Credit System Syllabus Structure of S.E.Computer Science and EngineeringW.E.F. 2017-2018 ***Semester I***

Course Code	***Theory Course Name***	***Hrs./week***			***Credits***	***Examination Scheme***			
		L	***T***	***P***		***ISE***	***ESE***	***ICA***	***Total***
CS 211	Applied Mathematics - I	3	1	_	4	30	70	25	125
CS 212	Discrete Mathematical Structures	3	1	_	4	30	70	25	125
CS 213	Data Communication	3	-	_	3	30	70	-	100
CS 214	Digital Techniques	3	-	_	3	30	70	-	100
CS 215	Computer Graphics	3	_	_	3	30	70	-	100
CS 216	Advanced C Concepts	3	_	_	3	--	--	-	--
	Sub Total	18	2	_	20	150	350	50	550
ENV 21	**Environmental Studies**	1							
	Laboratory								
							ESE		
							POE	***OE***	
CS 213	Data Communication	_	_	2	1	_	50	--	25	75
CS 214	Digital Techniques	_	_	2	1	_	50	_	25	75
CS 215	Computer Graphics	--	--	2	1	--		--	25	25
CS 216	Advanced C Concepts	_	_	4	2	_	50	_	25	75
	Sub Total	--	-	10	5	_	150		100	250
	Grand Total	**18**	**2**	**10**	**25**	**150**	**500**		**150**	**800**

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

COMPUTER SCIE[illegible]ND ENGINEERING

Syllabus Structure and detailed syllabus of

T.E. (Computer Science & Engineering)

w.e.f. Academic Year 2016-17

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR
Computer Science and Engineering

Structure of T. E. (Computer Science & Engineering) w. e. f. 2016-17

SOLAPUR UNIVERSITY, SOLAPUR.

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of T.E. Computer Science and Engineering W.E.F. 2016-2017

Semester I

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Operating System Concepts	3	1	-	4	30	70	--	100
System Programming	3	-	2	4	30	70	25	125
Computer Networks	4	-	-	4	30	70	--	100
Design and Analysis of Algorithm	3	1	-	4	30	70	25	125
Computer Organization	3	-	-	3	30	70	25	125
Self Learning (HSS)	-	-	-	2	-	50	-	50
Sub Total	16	2	2	21	150	400	75	625
Laboratory/Workshop								
						ESE / POE		
Operating System Concepts	-	-	2	1	-	50	25	75
Computer Networks	-	--	2	1	-	50	25	75
# Lab – Java Programming	2	--	4	4	-	50	25	75
Sub Total	2	-	8	6	-	**150**	**75**	**225**
Grand Total	18	2	10	27	150	550	150	850

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)
Note: 1) '#' indicates Practical exam only.

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR.

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of T.E. Computer Science and Engineering W.E.F. 2016-2017

Semester II

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Compiler Construction	3	-	2	4	30	70	25	125
Unix Operating System	3	-	2	4	30	70	25	125
Mobile Computing	3	1	-	4	30	70	25	125
Database Engineering	4	-	-	4	30	70	--	100
Software Engineering	3	1	-	4	30	70	25	125
Self Learning Module-II (HSS/Technical)	--	-	-	-	-	50	-	50
Sub Total	16	2	4	20	150	400	100	650
Laboratory/Workshop								
						ESE		
						POE	OE	
Database Engineering	--	--	2	1	--	50	-	25	75
# Lab - Programming in C#.net	2	--	2	3	--	50	-	25	75
# Mini project	--	--	2	1	--	--	25	25	50
Sub Total	2	--	6	5	--	125		75	200
Grand Total	18	2	10	25	150	525		175	850

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)
Note: 1) '#' indicates Practical exam only.

Dr R B kulkarni

PDF Reader Trial

Subjects for Self Learning for Humanities and Social Sciences (HSS)

1. Economics
2. Psychology
3. Philosophy
4. Sociology
5. Humanities

Subjects for Self Learning for Technical Subjects

1. Computer Modeling and Simulation
2. Software licenses and practices
3. Network set up & management tools

Note:

1. The term-work will be assessed based on continuous internal evaluation including class tests, assignments, performance in laboratories, Interaction in class, quizzes and group discussions as applicable.
2. The batch size for practical/tutorials be of 15 students. On forming the batches, if the strength of remaining students exceeds 7 students, then a new batch may be formed.
3. Mini Project shall consist of developing small software based on tools & technologies learnt in SE and TE.
4. Project group for T.E.(CSE) Part II Mini Project shall be of 4 / 5 students.
5. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I.
6. Student shall select one Self Learning Module from HSS at T.E. Part I and oneself learning module either from HSS or from technical at T.E. Part II.
7. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes under faculty of Engineering and Technology.

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)
Note: 1) '#' indicates Practical exam only.

PDF Reader Trial

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2015-2016)

Credit System structure of B.E. Computer Science & Engineering (W.E.F. 2017-201 8)(CGPA) *Semester I*

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Advanced Computer Architecture	3	_	_	3	30	70	25	125
Distributed systems	3	_	_	3	30	70		100
Modern Database systems	4	-	_	4	30	70		100
Elective-I	3		_	3	30	70	25	125
Elective - II	3		_	3	30	70	25	125
Sub Total	16		_	16	150	350	75	575
Laboratory								
						ESE		
						POE	OE	
Distributed systems	_	_	2	1	_		--	25	25
Modern Database systems	_	_	4	2	_	50		**25**	75
Lab-I Project phase I	--	--	4	2	--	_	50	50	100
Lab-II Python	2	_	2	3	_	_	_	50	50
Vocational Training	_	_	_	1	_	_	_	25	25
Sub Total	--	-	12	9		100		175	275
Grand Total	**18**		**12**	**25**	**150**	**450**		**250**	**850**

Note: Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment
ESE - University Examination (Theory &/ POE &/Oral examination)

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2015-2016)

Credit System structure of B.E. Computer Science & Engineering (W.E.F. 2017-2018) (CGPA) *Semester II*

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Management Information System	3	_	_	3	30	70	25	125
Information & Cyber Security	3	_	_	3	30	70	-	100
Eletive-III	3		_	3	30	70	25	125
Elective – IV	3		_	3	30	70	25	125
Sub Total	12		_	12	120	280	75	475
Laboratory/Workshop								
						ESE		
						POE	OE	
Information & Cyber Security	_	_	2	1	_	25		25	50
Lab I-Web Technology	2	_	4	3	_	50	_	25	75
Lab II-Project Phase II	_	_	6	3	_	100	_	100	200
Lab III –Open Source Tehnology	2	_	2	3	_	_		50	50
Sub Total		_	14	10	_	175		200	375
Grand Total	**16**		**14**	**22**	**120**	**455**		**275**	**850**

Note: Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ESE - University Examination (Theory &/ POE &/Oral examination)

PDF Reader Trial

Elective – I

1. Human Computer Interaction
2. Digital signal Processing
3. Software Testing & Quality Assurance
4. Business Intelligence

Elective – II

1. Object Oriented Modeling & Design
2. Wireless Ad hoc networks
3. Intelligent Systems
4. Mobile Application Development

Elective – III

1. Data Warehousing & Mining
2. Image Processing
3. Information Retrieval
4. Cloud Computing

Elective – IV

1 Storage Area Network
2 Web 2.0 & Rich Internet Application
3 Artificial Neural network
4 Big Data Analytics

Note –

- Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 7, then a new batch shall be formed.
- Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
- For project, the group shall be about 4 /5 students.
- Minimum strength of the students for Electives be 15..
- The term-work will be assessed based on continuous internal evaluation including class tests, assignments, performance in laboratories, Interaction in class, quizzes, group discussions as applicable
- A new elective may be introduced at SEMESTER I / II on any advanced topic in Computer Science and Engineering with prior permission from University.

SOLAPUR UNIVERSITY, SOLAPUR.

S.E.
NEW [CGPA]

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S.E. Computer Sci. & Engg. W.E.F. 2015-2016

Semester I

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Applied Mathematics-I	3	1	_	4	30	70	25	125
Discrete Mathematical Structures	3	1	_	4	30	70	25	125
Advanced C concepts	3	-	_	3	30	70	-	100
Digital Techniques	4	-	_	4	30	70		100
Computer Graphics	3	-	_	3	30	70	-	100
Sub Total	16	2	_	18	150	350	50	550
Laboratory/Workshop								
_	_	_	_	_	_	ESE: POE / OE	_	_
Advanced C concepts	-	_	4	2	_	50 / -	25	75
Digital Techniques	-	_	2	1	_	50 / _	25	75
Computer Graphics	-	_	2	1	_	- / _	25	25
Lab - Visual Basic	2	_	2	3	_	50 / _	25	75
Sub Total	2	-	10	7	_	150	100	250
Grand Total	**18**	**2**	**10**	**25**	**150**	**500**	**150**	**800**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)

Note: 1) '#' indicates Practical exam only. 2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Dr R B Kulkarni.

PDF Reader Trial

S.E. New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR.

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S.E. Computer Sci. & Engg. W.E.F. 2015-2016

Semester II

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Applied Mathematics – II	3	1	–	4	30	70	25	125
Theory of Computation	3	1	–	4	30	70	25	125
Microprocessors	4	-	–	4	30	70	-	100
Data Communication	3	-	–	3	30	70	-	100
Data Structures	3	-	–	3	30	70	-	100
Sub Total	16	2	–	18	150	350	50	550
Laboratory/Workshop								
						ESE		
–	–	–	–	–	–	POE	OE	–	–
Microprocessors	–	–	2	1	–	50	–	25	75
Data Communication	–	–	2	1	–	-	–	25	25
Data Structures	–	–	4	2	–	50	-	25	75
Lab - Object Oriented Design & Programming through C++	2	–	2	3	–	50	–	25	75
Sub Total	2	–	10	7	–	150		100	250
Grand Total	**18**	2	**10**	**25**	**150**	**500**		**150**	**800**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment
ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination)
Note: 1) '#' indicates Practical exam only. 2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Dr. R B [illegible]

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

COMPUTER SCIE[illegible]ND ENGINEERING

Syllabus Structure and detailed syllabus of

T.E. (Computer Science & Engineering)

w.e.f. Academic Year 2014-15

SOLAPUR UNIVERSITY, SOLAPUR
Computer Science and Engineering

Structure of T. E. (Computer Science & Engineering) w.e.f. July 2014
Semester – I

Sr. No	Name of the Subject	Teaching Scheme			Examination Scheme				Total
		L	T	P	Paper	T/W	OE	POE	
1	Operating System Concepts	3	1	2	100	25	-	50	175
2	System Programming	3	-	2	100	25	-	-	125
3	Computer Networks	4	-	2	100	25	-	50	175
4	Design and Analysis of Algorithm	3	1	-	100	25	-	-	125
5	Computer Organization	3	-	-	100	25	-	-	125
6	Lab – Java Programming	2		4	-	25	-	50	75
7	Self Learning (HSS)				50				50
	Total	**18**	**2**	**10**	**550**	**150**		**150**	**850**

Semester -II

Sr. No	Name of the Subject	Teaching Scheme			Examination Scheme				Total
		L	T	P	Paper	T/W	OE	POE	
1	Compiler Construction	3	-	2	100	25	-	-	125
2	Unix Operating System	3	-	2	100	25			125
3	Mobile Computing	3	1	-	100	25	-	-	125
4	Database Engineering	4	-	2	100	25	-	50	175
5	Software Engineering	3	1	-	100	25	-	-	125
6	Lab - Programming in C#.net	2	-	2	-	25	-	50	75
7	Mini project	-	-	2	-	25	25	-	50
8	Self Learning (HSS /Technical)				50				50
	Total	**18**	**2**	**10**	**550**	**175**	**25**	**100**	**850**

Subjects for Self Learning for Humanities and Social Sciences (HSS)	**Subjects for Self Learning for Technical Subjects**
1. Economics 2. Psychology 3. Philosophy 4. Sociology 5. Humanities	1. Computer Modeling and Simulation 2. Software licenses and practices 3. Network set up & management tools

Note:

1. The term-work will be assessed based on continuous internal evaluation including class tests, assignments, performance in laboratories, Interaction in class, quizzes and group discussions as applicable.
2. The batch size for practical/tutorials be of 15 students. On forming the batches, if the strength of remaining students exceeds 7 students, then a new batch may be formed.
3. Mini Project shall consist of developing small software based on tools & technologies learnt in SE and TE.
4. Project group for T.E.(CSE) Part II Mini Project shall be of 4 / 5 students
5. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
6. Student shall select one Self Learning Module from HSS at T.E. Part I and oneself learning module either from HSS or from technical at T.E. Part II
7. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes under faculty of Engineering and Technology.

SOLAPUR UNIVERSITY, SOLAPUR

T.E. (Computer Science & Engineering)

Semester-I

7. Self Learning (HSS)

Examination Scheme

Theory: 50 Marks

Refer to the syllabus common to all programmes under faculty of engineering.

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

COMPUTER SCIENCE & ENGINEERING

Structure & syllabus for

B.E. (Computer Science & Engineering)

w.e.f. Academic Year 2015-16

SOLAPUR UNIVERSITY, SOLAPUR

Computer Science and Engineering

Structure of B. E. (Computer Science & Engineering.) w.e.f. July 2015

SEMESTER – I

Sr. No	Name of the Subject	Teaching Scheme			Examination Scheme				Total
		L	T	P	Paper	T/W	OE	POE	
1	Advanced Computer Architecture	3	-	-	100	25	-	-	125
2	Distributed Systems	3	-	2	100	25	-	-	125
3	Modern Database Systems	4	-	4	100	25	-	50	175
4	Elective – I	3	-	-	100	25	-	-	125
5	Elective – II	3	-	-	100	25			125
6	Vocational Training	-	-	-	-	25	-	-	25
7	Lab I - Project Phase I	-	-	4	-	50	-	50	100
8	Lab-II - Python	2		2		50		-	50
	Total	**18**	**-**	**12**	**500**	**250**	**-**	**100**	**850**

SEMESTER -II

Sr. No	Name of the Subject	Teaching Scheme			Examination Scheme				Total
		L	T	P	Paper	T/W	OE	POE	
1	Management Information System	3	--		100	25			125
2	Information & Cyber Security	3	--	2	100	25		25	150
3	Elective -III	3	--		100	25			125
4	Elective – IV	3	--		100	25			125
5	Lab I - Web Technology	2	--	4		25		50	75
7	Lab II - Project Phase II		--	6		100		100	200
8	Lab-III -Open Source Technology	2	--	2		50			50
	Total	**16**	**-**	**14**	**400**	**275**		**175**	**850**

Elective – I 1. Human Computer Interaction 2. Digital Signal Processing 3. Software Testing & Quality Assurance 4. Business Intelligence	**Elective – II** 1. Object Oriented Modeling & Design 2. Wireless Ad hoc Networks 3. Intelligent Systems 4. Mobile Application Development
Elective – III 1. Data Warehousing & Mining 2. Image Processing 3. Information Retrieval 4. Cloud Computing	**Elective – IV** 1. Storage Area Network 2. Web 2.0 & Rich Internet Application 3. Artificial Neural Network 4. Big Data Analytics

SOLAPUR UNIVERSITY, SOLAPUR

B. E. (COMPUTER SCIENCE & ENGINEERING)

SEMESTER - II

2. INFORMATION AND CYBER SECURITY

Teaching Scheme
Lecture : 3 Hrs/Week
Practical : 2 Hrs/Week

Examination Scheme
Theory: 100 Marks
Term Work : 25 Marks
POE: 25 Marks

COURSE OBJECTIVES :

1) Provide an understanding of principal concepts, major issues, technologies, and basic approaches in information security.
2) Provide concept-level hands-on experience in specific topic area.
3) Provide the ability to examine and analyze real-life security cases.

COURSE OUTCOME :

1) Recognize common attack patterns, evaluate vulnerability of an information system and establish a plan for risk management.
2) Demonstrate how to detect and reduce threats in Web security, how to secure a wireless network
3) Evaluate the authentication and encryption needs of an information system.
4) Explain the Public Key Infrastructure process
5) Evaluate a company's security policies and procedures

SECTION – I

Unit 1: Symmetric Ciphers **(5 Hrs.)**

Overview – Services, Mechanism and Attacks, OSI Security Architecture, A model for Network security, Classical Encryption techniques – Symmetric Cipher model, Substitution. Techniques, Transposition techniques, Rotor Machines.

Unit 2: Block Cipher and Data Encryption Standard **(6 Hrs.)**

Simplified DES, Block Cipher principles, The Data Encryption Standard, The strength of DES, Differential and Linear Cryptanalysis, Block Cipher design principles, Block Cipher Mode of Operation.

Unit 3 : Public Key Cryptography **(5 Hrs.)**

Public Key Cryptography and RSA – Principles of Public Key Cryptosystems, The RSA Algorithm, Key management - Other public key cryptosystems – Key Management, Diffie-Hellman Key Exchange.

Unit 4 : Message Authentication and HASH Functions: **(5 Hrs.)**

Authentication requirements, Authentication Functions, Message Authentication Codes, Hash Functions, security of Hash Functions and MACS Digital Signatures. Authentication Protocols– Digital Signatures, Authentication Protocols, Digital Signature Standard.

SECTION – II

Unit 5: IP Security and E-Mail Security (7 Hrs.)

IP Security Overview, IP Security Architecture, Authentication Header, Encapsulating Security payload, Combining Security Associations, Key Management, Secure Socket Layer and Transport Layer Security.

Electronic Mail Security – Secure Electronic Transaction, Pretty Good Privacy, S/MIME

Unit 6 : Introduction to Cybercrime: (5 Hrs.)

Introduction, Cybercrime: Definition and Origins of the Word, Cybercrime and Information Security, Who are cybercriminals? Classifications of Cybercrimes, Cybercrimes: The Legal Perspectives and Indian Perspective.

Unit 7 : Tools and Methods used in Cybercrime: (7 Hrs.)

Introduction, Proxy Servers and Anonymizers, Phishing, Password Cracking, Key loggers and Spywares, Virus and Worms, Trojan Horses and Backdoors, Steganography, DoS and DDoS Attacks, SQL injection, Buffer overflow.

Text Book:

1) Williams Stallings–Cryptography and Network security principles and practices. Pearson Education (LPE) (Unit I to V)
2) Nina Godbbole --Information systems security-Security management, metrics, frameworks and best practices(WILEY) (Unit VI and VII)

Reference Books:

1) Behroz A. Forozan, Debdeep Mukhopadhyay, "Cyber and Network Security" McGraw Hill Education, 2nd Edition.
2) Atul Kahate, "Cyptography and Network Security" McGraw Hill Education 3rd Edition
3) Schneir, Bruce, "Applied Cryptography: Protocols and Algorithms"

Practical List:

It should consist of the 08-10 practical based on following guidelines

1) Implementation of Substitution Cipher
2) Implementation of Poly alphabetic Cipher (Vigenere Cipher and Vernam Cipher)
3) Implementation of Transposition Cipher
4) Implementation of Play fair Cipher
5) Implementation of Secure file transfer in Client/Server environment (use any one of above method for encryption and decryption).
6) Write a program to simulate RSA algorithm.
7) Write a program to simulate any Authentication system.
8) Write a program to simulate the PGP.
9) Study different cybercrimes and implement a system to detect any one cyber crime
10) Study and implementation of proxy servers, Keyloggers, Detection of phishing attacks.
11)

1.3.1. List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Electronics & Tele-communication Engineering		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2019-20	S.Y.B.Tech .(ENTC)	Environmental Science
	T.E.(ENTC)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
2018-19	S.E.(ENTC)	Environmental Science
	T.E.(ENTC)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
2017-18	S.E.(ENTC)	Environmental Science
	T.E.(ENTC)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
2016-17	S.E.(ENTC)	Environmental Science
	T.E.(ENTC)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values
2015-16	S.E.(ENTC)	Environmental Science
	T.E.(ENTC)	Self Learning-HSS courses:- 1) Economics, 2) Intellectual Property Rights for Technology Development and Management.3) Introduction to Sociology. 4) Stress and Coping. 5) Professional Ethics & Human Values

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

Name of the Faculty: Science & Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: ELECTRONICS & TELECOMMUNICATION ENGINEERING

Name of the Course: S.Y. B. Tech. (Sem- III & IV)

(Syllabus to be implemented from w.e.f. June 2019)

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

FACULTY OF SCIENCE & TECHNOLOGY

Electronics & Telecommunication Engineering

Programme Educational Objectives and Outcomes

A. Program Educational Objectives

1. To make students competent for professional career in Electronics, Telecommunication and allied fields.
2. To build strong fundamental knowledge amongst student to pursue higher education and continue professional development in Electronics, Telecommunication and allied fields.
3. To imbibe professional ethics, develop team spirit and effective communication skills to be successful leaders and managers with a holistic approach.
4. To nurture students to be sensitive for ethical, societal & environmental issues while conducting their professional work.

B. Program Outcomes

Engineering Graduate will be able to –

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of t h e engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

C. Program Specific Outcomes

1. Graduates will be able to attain a **solid foundation** in Electronics and Communication Engineering with an ability to function in multidisciplinary environment.
2. Graduates will be able to use **techniques and skills** to design, analyze, synthesize, and simulate Electronics and Communication Engineering components and systems.
3. Graduate will be capable of **developing programs** in Assembly, High level and HDL languages using contemporary tools for software development.

सोलापूर विद्यापीठ
॥ विद्या संपन्नता ॥

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Faculty of Science & Technology

(Revised from 2018-19)

C.B.C.S. Structure of S.Y. B.Tech. Electronics & Telecommunication Engineering W.E.F. 2019-20

Semester I

Course Code	***Theory Course Name***	***Hrs./week***			***Credits***	***Examination Scheme***			
		L	***T***	***P***		***ISE***	***ESE***	***ICA***	***Total***
ET211	Engineering Mathematics – III	3	1	--	4	30	70	25	125
ET212	Electronic Circuit Analysis and Design	4	--	--	4	30	70	25	125
ET213	Network Theory and Analysis	4	--	--	4	30	70	25	125
ET214	Digital Techniques	4	--	--	4	30	70	25	125
ET215	Analog Communication	3	--	--	3	30	70	25	125
Sub Total		18	1	--	19	150	350	125	625
ENV21	Environmental Science	1	--	--	--	--	--	--	--
Course Code	***Laboratory Course Name***								
							ESE		
							POE	***OE***	
ET212	Electronic Circuit Analysis and Design	--	--	2	1	--	50*	--	--	50
ET213	Network Theory and Analysis	--	--	2	1	--	--	--	--	--
ET214	Digital Techniques	--	--	2	1	--	50	--	--	50
ET215	Analog Communication	--	--	2	1	--	25	--	--	25
E216	Electronics Software Lab-I	--	1	2	2	--	--	--	50	50
Sub Total		--	1	10	6	--	125		50	175
Grand Total		**19**	**2**	**10**	**25**	**150**	**475**		**175**	**800**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE-End Semester Exam, OE-Oral Examination, POE- Practical Oral Examination, ICA- Internal Continuous Assessment

Note: *

- Practical and Oral Examination of Electronics Circuit Analysis and Design includes some of the practical from subject of Network Theory and Analysis

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Faculty of Science & Technology

(Revised from 2018-19)

C.B.C.S. Structure of S.Y. B. Tech. Electronics & Telecommunication Engineering W.E.F. 2019-20

Semester II

Course Code	***Theory Course Name***	***Hrs./week***			***Credits***	***Examination Scheme***			
		L	***T***	***P***		***ISE***	***ESE***	***ICA***	***Total***
ET221	Control System	3	--	--	3	30	70	25	125
ET222	Analog Integrated Circuits	4	--	--	4	30	70	25	125
ET223	Principles of Digital Communication	4	--	--	4	30	70	25	125
ET224	Signals and Systems	3	1	--	4	30	70	25	125
ET225	Data Structures	4	--	--	4	30	70	25	125
Sub Total		18	1	--	19	150	350	125	625
ENV22	Environmental Science	1	--	--	--	--	--	--	--
Course Code	***Laboratory Course Name***								
							ESE		
							POE	***OE***	
ET221	Control System	--	--	2	1	--	--	--	--	--
ET222	Analog Integrated Circuits	--	--	2	1	--	50	--	--	50
ET223	Principles of Digital Communication	--	--	2	1	--	25	--	--	25
ET225	Data Structures	--	--	2	1	--	50	--	--	50
ET226	Electronic Software Lab-II	--	1	2	2	--	--	--	50	50
Sub Total		--	1	10	6	--	125		50	175
Grand Total		**19**	**2**	**10**	**25**	**150**	**475**		**175**	**800**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, OE-Oral Examination, POE- Practical Oral Examination, ICA- Internal Continuous Assessment

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

ELECTRONICS & TELECOMMUNICATION ENGINEERING

Syllabus for

T.E. (Electronics & Telecommunication Engineering)

w.e.f. Academic Year 2018-19

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

Electronics & Telecommunication Engineering

Programme Educational Objectives and Outcomes

Program Educational Objectives (PEO'S)

1. To prepare students to give good theoretical background with sound practical knowledge,enable them to analyze and solve Electronics and Telecommunication Engineering problems byapplying basic principles of mathematics, science and engineering using modern tools andtechniques.

2. To make students to test hardware components and software for offering solution to real lifesituations.

3. To inculcate students to be sensitive to ethical, societal and environmental issues whilepursuing their professional duties.

4. To build strong fundamental knowledge amongst students to pursue higher education and toenhance research and continue professional development in Electronics, Communication andIT industries with attitude for lifelong learning.

5. To nurture students with technical and communication skills in order to be able to function onmultidisciplinary fields and make them aware of contemporary issues at national andinternational levels.

6. To develop students for team-works and managerial skills leading to entrepreneurship andleadership.

Program Outcomes (PO's)

Engineering Graduate will be able to –

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineeringfundamentals, and an engineering specialization to the solution of complex engineeringproblems.
2. **Problem analysis**: Identify, formulate, review research literature, andanalyze complexengineering problems reaching substantiated conclusions using first principles ofmathematics,natural sciences, and engineeringsciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and designsystemcomponentsorprocessesthatmeetthespecifiedneedswithappropriateconsideration for the public health and safety, and the cultural, societal, andenvironmentalconsiderations.
4. **Conductinvestigationsofcomplexproblems**:Useresearch-basedknowledgeandresearchmethodsincludingdesignofexperiments,analysisandinterpretation ofdata,andsynthesisoftheinformation to provide validconclusions.

5. **Moderntoolusage**:Create,select,andapplyappropriatetechniques,resources,andmodernenginee ring and IT tools including prediction and modeling to complex engineering activities withanunderstanding of thelimitations.
6. **Theengineerandsociety**:Applyreasoninginformedbythecontextualknowledgetoassesssocietal, health, safety, legal and cultural issues and the consequent responsibilities relevant to theprofessional engineeringpractice.
7. **Environment and sustainability**: Understand the impact of the professional engineeringsolutionsin societal and environmental contexts, and demonstrate the knowledge of, and need forsustainabledevelopment.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms ofthe engineeringpractice.
9. **Individualandteamwork**:Functioneffectivelyasanindividual,andasamemberorleaderindiverse teams, and in multidisciplinarysettings.
10. **Communication**: Communicate effectively on complex engineering activities with theengineeringcommunity and with society at large, such as, being able to comprehend and write effectivereportsand design documentation, make effective presentations, and give and receive clearinstructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of t h e engineeringandmanagementprinciplesandapplythesetoone'sownwork,asamemberandlead er in a team, to manage projects and in multidisciplinaryenvironments.
12. **Life-longlearning**:Recognizetheneedfor,andhavethepreparationandabilitytoengageinindependent and life-long learning in the broadest context of technologicalchange.

Program Specific Outcomes (PSOs)

1. **Solid Foundation:**Graduates will be able to attain a solid foundation in Electronics and Communication Engineering with an ability to function in multidisciplinary environment.
2. **Techniques and Skills:**Graduates will be able to use techniques and skills to design, analyze, synthesize, and simulate Electronics and Communication Engineering components and systems.
3. **Developing Programs:**Graduate will be capable of developing programs in Assembly, High level and HDL languages using contemporary tools for software development.

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology

CBCS *structure of T.E. Electronics & Telecommunication Engineering W.E.F. 2018-19*

Semester I

Course Code	*Theory Course Name*	*Hrs./week*			*Credits*	*Examination Scheme*			
		L	*T*	*P*		*ISE*	*ESE*	*ICA*	*Total*
ET311	Electro Magnetic Engg. & Radiating System	3	1	--	4	30	70	--	100
ET312	Principles of Digital Communication	4	--	--	4	30	70	--	100
ET313	Software Engineering & Project Management System	3	--	--	3	30	70	--	100
ET314	Digital Signal Processing	4	--	--	4	30	70	--	100
ET315	Microcontroller – I (8051)	4	--	--	4	30	70	--	100
SLH31	Self Learning Course I -HSS	--	--	--	2	--	50	--	50
Sub Total		18	1	--	21	150	400	--	550
Course Code	*LaboratoryCourse Name*								
							ESE		
							POE	*OE*	
ET311	Electro Magnetic Engg. & Radiating System	--	--	2	1	--	--	--	25	25
ET312	Principles of Digital Communication	--	--	2	1	--	50	--	25	75
ET314	Digital Signal Processing	--	--	2	1	--	25	--	25	50
ET315	Microcontroller – I (8051)	--	--	2	1	--	50	--	25	75
ET316	Electronic Software Lab-III	--	1	2	2	--	--	--	50	50
Sub Total		--	2	10	6	--	125		150	275
Grand Total		**18**	**2**	**10**	**27**	**150**	**525**		**150**	**825**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ESE - University Examination (Theory &/ POE &/Oral examination)

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology

CBCS *structure of T.E. Electronics & Telecommunication Engineering W.E.F. 2018-19*

Semester II

Course Code	***Theory Course Name***	***Hrs./week***			***Credits***	***Examination Scheme***			
		L	***T***	***P***		***ISE***	***ESE***	***ICA***	***Total***
ET321	Radar & Microwave Engineering	4	_	_	4	30	70	-	100
ET322	Microcontroller-II (PIC)	4	_	_	4	30	70	-	100
ET323	Electronics Applications & System Design	4	1	_	5	30	70	-	100
ET324	Optical Communication	3	_	_	3	30	70	-	100
ET325	Mobile Communication	3	1	_	4	30	70	25	125
ET327	Self Learning Course II- Technical	_	_	_	2	--	50	_	50
Sub Total		18	2	_	22	150	400	--	575
Course Code	***LaboratoryCourse Name***								
							ESE		
							POE	***OE***	
ET321	Radar & Microwave Engineering	_	_	2	1	_	_	_	25	25
ET322	Microcontroller-II (PIC)	_	_	2	1	_	50	_	25	75
ET323	Electronics Applications & System Design	_	_	2	1	_	_	#50	25	75
ET324	Optical Communication	_	_	2	1	_	_	25	25	50
ET327	Mini Hardware Project	_	_	2	1	_	_	_	25	25
Sub Total			_	10	5	_	125		150	250
Grand Total		**18**	2	**10**	**27**	**150**	**525**		**150**	**825**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ESE - University Examination (Theory &/ POE &/Oral examination)

- **Note** –

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining student exceeds 7, then a new batch shall be formed.

2. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I

3. Student shall select one Self Learning Course at T.E. Part I and T.E. Part II each from 'Humanities & Social Sciences (HSS) ' and 'Technical' Group respectively

4. Curriculum for Humanities and Social Sciences (HSS) Self Learning Courses is common for all under graduate programmes of faculty of Engineering and Technology

5. For TE Part I -

A. Student can select a Self Learning Course from Solapur University, Solapur HSS Course List and appear for its examination as and when conducted by Solapur University, Solapur

OR

B. Student can enroll for National Programme on Technology Enhanced Learning (NPTEL) course, complete its assignments and appear for certificate examination as and when conducted by NPTEL.

For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur

More details about NPTEL are available at http://nptel.ac.in

6. Minimum four assignments for Self Learning Modules at T.E. Part I and T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department

7. Project group for T.E.(E&TC) Part II Mini Hardware Project shall not be of more than **three** student

8. Project group for B.E.(E&TC) Part I and Part II shall not be of more than **three** student.

9. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable.

10. # indicates Oral Examination of Electronics Applications & System Design is combined with Mini Hardware Project.

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

w. e. f. Academic Year 2018-19

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989
2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.
3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

ELECTRONICS & TELECOMMUNICATION ENGINEERING

Syllabus for

S.E. (Electronics & Telecommunication Engineering)
W.e.f. Academic Year 2017-18

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

CBCS *structure of S.E. Electronics & Telecommunication Engineering*

W.E.F. 2017-2018 Semester I

Course Code	Theory Course Name	Hrs./week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
ET211	Engineering Mathematics – III	3	1	_	4	30	70	25	125
ET212	Electronics Circuit Analysis and Design-I	4	_	_	4	30	70	-	100
ET213	Network Theory & Analysis	4	-	_	4	30	70	-	100
ET214	Digital Techniques	4	_	_	4	30	70	-	100
ET215	Analog Communication	3	_	_	3	30	70	-	100
	Sub Total	18	1	_	19	150	350	25	525
	Laboratory								

							ESE			
							POE	OE		
ET212	Electronics Circuit Analysis and Design-I	_	_	2	1	_	50*	--	25	75
ET213	Network Theory & Analysis	_	_	2	1	_	_	_	25	25
ET214	Digital Techniques	--	--	2	1	--	50	--	25	75
ET215	Analog Communication	_	_	2	1	_	50	_	25	75
ET216	Electronic Software Lab-I	--	1	2	2	_	--	_	50	50
ENV21	Environmental Science-I	1	-	--	--	--	--	--	--	--
	Sub Total	--	1	10	6	_	150		150	300
	Grand Total	**18**	**2**	**10**	**25**	**150**	**500**		**175**	**825**

Note: Abbreviations: L- Lectures, P-Practical, T-Tutorial, ISE-In-Semester Exam, ESE-End Semester Exam, ICA- Internal Continuous Assessment,ESE - University Examination (Theory &/ POE &/Oral examination)

Note: 1) *- Practical and Oral Examination of Electronics Circuit Analysis and Design – I includes some of the practical from Network Theory and Analysis

2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology

CBCS structure of S.E. Electronics & Telecommunication Engineering
W.E.F. 2017-2018 Semester II

Course Code	Theory Course Name	Hrs./week			Credits	Examination Scheme			
		L	T	P		ISE	ESE	ICA	Total
ET221	Electronics Circuit Analysis and Design – II	4	_	_	4	30	70	-	100
ET222	Data Structure	4	_	_	4	30	70	-	100
ET223	Control Systems	3	_	_	3	30	70	-	100
ET224	Linear Integrated Circuits	4	_	_	4	30	70	-	100
ET225	Signals and Systems	3	1	_	4	30	70	25	125
	Sub Total	18	1	_	19	150	350	25	525
	Laboratory/Workshop								
							ESE		
							POE	OE	
ET221	Electronics Circuit Analysis and Design – II	_	_	2	1	_	50$	-	25	75
ET222	Data Structure	_	_	2	1	_	50	_	25	75
ET223	Control Systems	_	_	2	1	_	_	_	25	25
ET224	Linear Integrated Circuits	_	_	2	1	_	50	_	25	75
ET226	Electronic Software Lab-II	_	1	2	2	_	_	_	50	50
ENV22	Environmental Science-I	1	-	--	--	--	--	--	--	--
	Sub Total		1	10	6	--	150		150	300
	Grand Total	**18**	**2**	**10**	**25**	**150**	**500**		**175**	**825**

Note: Abbreviations: L-Lectures, P-Practical, T-Tutorial, ISE-In Semester Exam, ESE-End Semester Exam, ICA- Internal Continuous Assessment, ESE-University Examination (Theory &/ POE &/Oral examination)

Note: 1) $- Practical and Oral Examination of Electronics Circuit Analysis and Design – II includes Some of the simulation practical from Electronic Software Lab-II
2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Note –Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining students exceeds 9, then a new batch shall be formed.

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

ELECTRONICS & TELECOMMUNICATION ENGINEERING

Syllabus for

T.E. (Electronics & Telecommunication Engineering)

w.e.f. Academic Year 2018-19

Choice Based Credit System

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

Electronics & Telecommunication Engineering

Programme Educational Objectives and Outcomes

Program Educational Objectives (PEO'S)

1. To prepare students to give good theoretical background with sound practical knowledge,enable them to analyze and solve Electronics and Telecommunication Engineering problems byapplying basic principles of mathematics, science and engineering using modern tools andtechniques.

2. To make students to test hardware components and software for offering solution to real lifesituations.

3. To inculcate students to be sensitive to ethical, societal and environmental issues whilepursuing their professional duties.

4. To build strong fundamental knowledge amongst students to pursue higher education and toenhance research and continue professional development in Electronics, Communication andIT industries with attitude for lifelong learning.

5. To nurture students with technical and communication skills in order to be able to function onmultidisciplinary fields and make them aware of contemporary issues at national andinternational levels.

6. To develop students for team-works and managerial skills leading to entrepreneurship andleadership.

Program Outcomes (PO's)

Engineering Graduate will be able to –

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineeringfundamentals, and an engineering specialization to the solution of complex engineeringproblems.
2. **Problem analysis**: Identify, formulate, review research literature, andanalyze complexengineering problems reaching substantiated conclusions using first principles ofmathematics,natural sciences, and engineeringsciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and designsystemcomponentsorprocessesthatmeetthespecifiedneedswithappropriateconsideration for the public health and safety, and the cultural, societal, andenvironmentalconsiderations.
4. **Conductinvestigationsofcomplexproblems**:Useresearch-basedknowledgeandresearchmethodsincludingdesignofexperiments,analysisandinterpretation ofdata,andsynthesisoftheinformation to provide validconclusions.

5. **Moderntoolusage**:Create,select,andapplyappropriatetechniques,resources,andmodernenginee ring and IT tools including prediction and modeling to complex engineering activities withanunderstanding of thelimitations.
6. **Theengineerandsociety**:Applyreasoninginformedbythecontextualknowledgetoassesssocietal, health, safety, legal and cultural issues and the consequent responsibilities relevant to theprofessional engineeringpractice.
7. **Environment and sustainability**: Understand the impact of the professional engineeringsolutionsin societal and environmental contexts, and demonstrate the knowledge of, and need forsustainabledevelopment.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms ofthe engineeringpractice.
9. **Individualandteamwork**:Functioneffectivelyasanindividual,andasamemberorleaderindiverse teams, and in multidisciplinarysettings.
10. **Communication**: Communicate effectively on complex engineering activities with theengineeringcommunity and with society at large, such as, being able to comprehend and write effectivereportsand design documentation, make effective presentations, and give and receive clearinstructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of t h e engineeringandmanagementprinciplesandapplythesetoone'sownwork,asamemberandlead er in a team, to manage projects and in multidisciplinaryenvironments.
12. **Life-longlearning**:Recognizetheneedfor,andhavethepreparationandabilitytoengageinindependent and life-long learning in the broadest context of technologicalchange.

Program Specific Outcomes (PSOs)

1. **Solid Foundation:**Graduates will be able to attain a solid foundation in Electronics and Communication Engineering with an ability to function in multidisciplinary environment.
2. **Techniques and Skills:**Graduates will be able to use techniques and skills to design, analyze, synthesize, and simulate Electronics and Communication Engineering components and systems.
3. **Developing Programs:**Graduate will be capable of developing programs in Assembly, High level and HDL languages using contemporary tools for software development.

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology

CBCS *structure of T.E. Electronics & Telecommunication Engineering W.E.F. 2018-19*

Semester I

Course Code	*Theory Course Name*	*Hrs./week*			*Credits*	*Examination Scheme*			
		L	*T*	*P*		*ISE*	*ESE*	*ICA*	*Total*
ET311	Electro Magnetic Engg. & Radiating System	3	1	--	4	30	70	--	100
ET312	Principles of Digital Communication	4	--	--	4	30	70	--	100
ET313	Software Engineering & Project Management System	3	--	--	3	30	70	--	100
ET314	Digital Signal Processing	4	--	--	4	30	70	--	100
ET315	Microcontroller – I (8051)	4	--	--	4	30	70	--	100
SLH31	Self Learning Course I -HSS	--	--	--	2	--	50	--	50
Sub Total		18	1	--	21	150	400	--	550
Course Code	*LaboratoryCourse Name*								
							ESE		
							POE	*OE*	
ET311	Electro Magnetic Engg. & Radiating System	--	--	2	1	--	--	--	25	25
ET312	Principles of Digital Communication	--	--	2	1	--	50	--	25	75
ET314	Digital Signal Processing	--	--	2	1	--	25	--	25	50
ET315	Microcontroller – I (8051)	--	--	2	1	--	50	--	25	75
ET316	Electronic Software Lab-III	--	1	2	2	--	--	--	50	50
Sub Total		--	2	10	6	--	125		150	275
Grand Total		**18**	**2**	**10**	**27**	**150**	**525**		**150**	**825**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ESE - University Examination (Theory &/ POE &/Oral examination)

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology

CBCS *structure of T.E. Electronics & Telecommunication Engineering W.E.F. 2018-19*

Semester II

Course Code	***Theory Course Name***	***Hrs./week***			***Credits***	***Examination Scheme***			
		L	***T***	***P***		***ISE***	***ESE***	***ICA***	***Total***
ET321	Radar & Microwave Engineering	4	_	_	4	30	70	-	100
ET322	Microcontroller-II (PIC)	4	_	_	4	30	70	-	100
ET323	Electronics Applications & System Design	4	1	_	5	30	70	-	100
ET324	Optical Communication	3	_	_	3	30	70	-	100
ET325	Mobile Communication	3	1	_	4	30	70	25	125
ET327	Self Learning Course II- Technical	_	_	_	2	--	50	_	50
Sub Total		18	2	_	22	150	400	--	575
Course Code	***LaboratoryCourse Name***								
							ESE		
							POE	***OE***	
ET321	Radar & Microwave Engineering	_	_	2	1	_	_	_	25	25
ET322	Microcontroller-II (PIC)	_	_	2	1	_	50	_	25	75
ET323	Electronics Applications & System Design	_	_	2	1	_	_	#50	25	75
ET324	Optical Communication	_	_	2	1	_	_	25	25	50
ET327	Mini Hardware Project	_	_	2	1	_	_	_	25	25
Sub Total			_	10	5	_	125		150	250
Grand Total		**18**	2	**10**	**27**	**150**	**525**		**150**	**825**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ESE - University Examination (Theory &/ POE &/Oral examination)

- **Note** –

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining student exceeds 7, then a new batch shall be formed.

2. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I

3. Student shall select one Self Learning Course at T.E. Part I and T.E. Part II each from 'Humanities & Social Sciences (HSS) ' and 'Technical' Group respectively

4. Curriculum for Humanities and Social Sciences (HSS) Self Learning Courses is common for all under graduate programmes of faculty of Engineering and Technology

5. For TE Part I -

A. Student can select a Self Learning Course from Solapur University, Solapur HSS Course List and appear for its examination as and when conducted by Solapur University, Solapur

OR

B. Student can enroll for National Programme on Technology Enhanced Learning (NPTEL) course, complete its assignments and appear for certificate examination as and when conducted by NPTEL.

For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur

More details about NPTEL are available at http://nptel.ac.in

6. Minimum four assignments for Self Learning Modules at T.E. Part I and T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department

7. Project group for T.E.(E&TC) Part II Mini Hardware Project shall not be of more than **three** student

8. Project group for B.E.(E&TC) Part I and Part II shall not be of more than **three** student.

9. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable.

10. # indicates Oral Examination of Electronics Applications & System Design is combined with Mini Hardware Project.

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

w. e. f. Academic Year 2018-19

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989
2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.
3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

Electronics & Telecommunication Engineering

PROGRAM EDUCATIONAL OBJECTIVES AND PROGRAM OUTCOMES FOR

Electronics & Telecommunication Engineering Program

STRUCTURE OF T.E (Electronics & Telecommunication Engineering) W.E.F 2016-17

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

STRUCTURE OF T.E (Electronics & Telecommunication Engineering) W.E.F 2016-17

T. E. (Electronics & Telecommunication Engineering) Semester- I

Credit system structure of T.E. (Electronics & Telecommunication) Engineering W.E.F. 2016-17 Semester -I

Theory / Course Name	Hrs. /Week			Credits	Examination Scheme				
	L	T	P		ISE	ESE		ICA	Total
Electro Magnetic Engg. & Radiating System	3	--	--	4	30	70		25	125
Principles of Digital Communication	4	--	--	4	30	70		--	100
Software Engineering & Project Management System	3	1	--	3	30	70		25	125
Digital Signal Processing	4	--	--	4	30	70		--	100
Microprocessors	4	--	--	4	30	70		--	100
Self-Learning (HSS)*		--	--	--	--	50		--	50
Sub Total	**18**	**1**	**--**	**19**	**150**	**400**		**50**	**600**
Laboratory									
						ESE			
						POE	**OE**		
Electro Magnetic Engg. & Radiating System	--	--	2	1	--		--	--	--
Principles of Digital Communication	--	--	2	1	--	50	--	25	75
Digital Signal Processing	--	--	2	1	--	25	--	25	50
Microprocessors	--	--	2	1	--	50	--	25	75
Electronic Software Lab-II	--	1	2	2	--	--	--	25	25
Sub Total	--	**1**	--	**6**	--	**125**		**100**	**225**
Grand Total	**18**	**2**	**10**	**25**	**150**	**525**		**150**	**825**

*** Self Learning (HSS)**

Humanity and Social Science (HSS) of Semester – I will be common for Engineering and Technology.

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

STRUCTURE OF T.E (Electronics & Telecommunication Engineering) W.E.F 2016-17

T. E. (Electronics & Telecommunication Engineering) Semester- II

Credit system structure of T.E. (Electronics & Telecommunication) Engineering W.E.F. 2016-17 Semester -II

Theory Course Name	Hrs. /Week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Radar & Microwave Engineering	4	--	--	4	30	70	25	125
Microcontroller & Applications	4	--	--	4	30	70	--	100
Electronics Applications & System Design	4	--	--	3	30	70	--	100
Optical Communication	4	--	--	4	30	70	--	100
Mobile Communication	3	1	--	4	30	70	--	100
Self Learning*	--	--	--	--	--	50	--	50
Sub Total	**19**	**1**	**--**	**19**	**150**	**400**	**25**	**575**
Laboratory								
						ESE		
						POE	**OE**		
Radar & Microwave Engineering	--	--	2	1	--		--	--	--
Microcontroller & Applications	--	--	2	1	--	50	--	25	75
Electronics Applications & System Design	--	--	2	1	--	--	#50	25	75
Optical Communication	--	--	2	1	--	--	25	25	50
Mobile Communication	--	--	--	1	--	--	--	25	25
Mini Project(Hard Ware)	--	--	2	1	--	--		25	25
Sub Total	--	--	**10**	**6**	--	**125**		**125**	**250**
Grand Total	**19**	**1**	**10**	**25**	**150**	**525**		**150**	**825**

*** Self Learning**

Self-learning subjects for Semester-II

1. **Computer Organization**
2. **Operating System**
3. **Robotics**

Note:

- In self-learning student will select one subject from Semester-I and one subject from Semester-II on their own, study the prescribed syllabus of that subject and appear for a theory examination of 50 marks conducted by Solapur University.
- Department shall appoint the subject cordinator for self learning subject at semster I and semester II and the student should submitt minimum four assignments to the subject coordinator for evaluation.
- Term work assessment shall be a continuous process based on student's performance in class tests, assignments, homework, subject seminars, quizzes, and laboratory books and their interaction and attendance for theory and lab sessions as applicable.
- Vocational Training (be evaluated at B.E. Part-I) of minimum 15 days should be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report should be submitted in B.E. Part-I.
- The batch size for the practical's/tutorials be of 15 students. On forming the batches, if the strength of remaining students exceeds 7, then a new batch be formed.
- Mini Project shall consist of developing a small hardware project on PCB.
- # Practical and Oral Examination of Electronics Applications &System Design is combined with Mini Project (Hardware)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

S.E
New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S.E. Electronics & Telecommunication Engineering W.E.F. 2015-2016 ***Semester I***

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Engineering Mathematics – III	3	1	–	4	30	70	25	125
Electronics Circuit Analysis and Design-I	4	–	–	4	30	70	-	100
Circuits & Network	4	-	–	4	30	70	-	100
Digital Techniques	4	–	–	4	30	70	-	100
Data Structures	3	–	–	3	30	70	-	100
Sub Total	18	1	–	19	150	350	25	525
Laboratory								
						ESE		
						POE	OE	
Electronics Circuit Analysis and Design-I	–	–	2	1	–	50*	--	25	75
Circuits & Network	–	–	2	1	–	–	–	25	25
Digital Techniques	--	--	2	1	--	50	--	25	75
Data Structures	–	–	2	1	–	50	–	25	75
Electronic Workshop Lab	--	1	2	2	–	--	–	50	50
Sub Total	--	1	10	6	–	150		150	300
Grand Total	18	2	10	25	150	500		175	825

Note: Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment
ESE - University Examination (Theory &/ POE &/Oral examination)

Note: 1) *- Practical and Oral Examination of Electronics Circuit Analysis and Design – I includes some of the practical from Network Theory and Analysis
2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Dr. K. J. Karande

S.E. New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S.E. Electronics & Telecommunication Engineering W.E.F. 2015-2016 **Semester II**

Theory Course Name	Hrs./week			Credits	Examination Scheme			
	L	T	P		ISE	ESE	ICA	Total
Electronics Circuit Analysis and Design – II	4	–	–	4	30	70	-	100
Analog Communication	4	–	–	4	30	70	-	100
Control Systems	3	–	–	3	30	70	-	100
Linear Integrated Circuits	4	–	–	4	30	70	-	100
Signals and Systems	3	1	–	4	30	70	25	125
Sub Total	18	1	–	19	150	350	25	525
Laboratory/Workshop								
						ESE		
						POE	OE	
Electronics Circuit Analysis and Design – II	–	–	2	1	–	50$	-	25	75
Analog Communication	–	–	2	1	–	50	–	25	75
Control Systems	–	–	2	1	–	–	–	25	25
Linear Integrated Circuits	–	–	2	1	–	50	–	25	75
Electronic Software Lab-I	–	1	2	2	–	–	–	50	50
Sub Total		1	10	6	--	150		150	300
Grand Total	18	2	10	25	150	500		175	825

Note: Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam., ESE- End Semester Exam, ICA- Internal Continuous Assessment
ESE - University Examination (Theory &/ POE &/Oral examination)

Note: 1) $- Practical and Oral Examination of Electronics Circuit Analysis and Design – II includes some of the simulation practical from Electronic Software Lab-I

2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Dr. K. J. Karande

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law, Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)
ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.
Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

1.3.1. List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Civil Engineering		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2019-20	SY B.Tech.(Civil)	Energy Science & Engineering Environmental Science
	T.E.(Civil)	1. Self-Learning-HSS courses:- i) Economics, ii) Intellectual Property Rights for Technology Development and Management. iii) Introduction to Sociology. iv) Stress and Coping. v) Professional Ethics & Human Values 2. Environmental Engg.-II 3. Elective-I: Industrial Waste Treatment, Disaster Management 4. Self-Learning Technical Course: Planning for Sustainable Development
	B.E.(Civil)	1. Elective-II: Air Pollution & Control, Entrepreneurship 2. Elective-III: Solid and Hazardous & Waste Management, Environmental Management
2018-19	S.E.(Civil)	Environmental Studies
	T.E.(Civil)	1. Self-Learning-HSS courses:- i) Economics, ii) Intellectual Property Rights for Technology Development and Management. iii) Introduction to Sociology. iv) Stress and Coping. v) Professional Ethics & Human Values 2. Environmental Engg.-II 3. Elective-I: Industrial Waste Treatment, Disaster Management 4. Self-Learning Technical Course: Planning for Sustainable Development
	B.E.(Civil)	1. Elective-I: Air Pollution & Control, Entrepreneurship 2. Elective-II: Solid and Hazardous & Waste Management, Environmental

		Management 3. Elective-III: Industrial Waste Treatment, Disaster Management
2017-18	S.E.(Civil)	Environmental Studies
	T.E.(Civil)	1. Self-Learning-HSS courses:- i) Economics, ii) Intellectual Property Rights for Technology Development and Management. iii) Introduction to Sociology. iv) Stress and Coping. v) Professional Ethics & Human Values 2. Building Planning & Design 3. Environmental Engg.-II
	B.E.(Civil)	1. Elective-I: Air Pollution & Control, Entrepreneurship 2. Elective-II: Solid and Hazardous & Waste Management, Environmental Management 3. Elective-III: Industrial Waste Treatment, Disaster Management
2016-17	S.E.(Civil)	Environmental Science
	T.E.(Civil)	1. Self-Learning-HSS courses:- i) Economics, ii) Intellectual Property Rights for Technology Development and Management. iii) Introduction to Sociology. iv) Stress and Coping. v) Professional Ethics & Human Values 2. Building Planning & Design 3. Environmental Engg.-II
	B.E.(Civil)	1. Elective-I: Air Pollution & Control, Entrepreneurship 2. Elective-II: Solid and Hazardous & Waste Management, Environmental Management 3. Elective-III: Industrial Waste Treatment
2015-16	S.E.(Civil)	Environmental Science
	T.E.(Civil)	1. Self-Learning-HSS courses:- i) Economics, ii) Intellectual Property Rights for Technology Development and Management. iii) Introduction to Sociology. iv) Stress and Coping. v) Professional Ethics & Human Values 2. Building Planning & Design 3. Environmental Engg.-II
	B.E.(Civil)	1. Elective-I: Air Pollution & Control, Entrepreneurship 2. Elective-II: Solid and Hazardous & Waste Management, Environmental Management 3. Elective-III: Industrial Waste Treatment, Disaster Management

Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKARSOLAPUR UNIVERSITY, SOLAPUR
Faculty of Science & Technology
Credit System structure of S. Y. B. Tech. Civil Engg., Semester- III, (W.E.F. 2019-2020)

Course Code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV211	Concrete Technology, Material Testing & Evaluation	3	-	-	-	3	30	70		-	100
CV212	Surveying & Geomatics	3	-	-	-	3	30	70		-	100
CV213	Building Construction & Drawing	2	-	-	-	2	30	70		-	100
CV214	Introduction to Fluid mechanics	3	-	-	-	3	30	70		-	100
CV215	Engineering Geology	**2**	-	-	-	2	30	70		-	100
CV216	Introduction to Solid Mechanics	3	1	-	-	4	30	70		-	100
CV217	Energy Science & Engineering	1	-	-	-	1	25	-		-	25
	Total	**17**	**1**	**_**	-	**18**	**205**	**420**		**-**	**625**
	Laboratory/Drawings							**POE**	**OE**		
CV211	Concrete Technology, Material Testing & Evaluation	-	-	2	-	1	-	-	-	25	25
CV212	Surveying & Geomatics	-	-	2	-	1	-	25	-	25	50
CV213	Building Construction & Drawing	-	-	-	2	1	-	-	-	25	25
CV214	Introduction to Fluid mechanics	-	-	2	-	1	-	25	-	25	50
CV215	Engineering Geology	-	-	2	-	1	-	25	-	25	50
CV218	Lab practice	-	-	2	-	1	-	-	-	25	25
	Total	**-**	**-**	**10**	**-**	**6**	**-**	**75**		**150**	**225**
	Grand Total	**17**	**1**	**10**	**2**	**24**	**205**	**495**		**150**	**850**
	Environmental Science	**1**	–	–	-	–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

PUNYASHLOK AHILYADEVI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR
S. Y. B. Tech. (Civil Engineering) Semester- III
CV217: ENERGY SCIENCE & ENGINEERING

Teaching Scheme	**Examination Scheme**
Lectures – 1 Hrs/Week, 1 Credit	**ISE** - 25 Marks

Course Objectives:

To provide an introduction to energy systems and renewable energy resources, with a scientific examination of the energy field and an emphasis on alternative energy sources and their technology and application.

1) To explore society's present needs and future energy demands, examine conventional energy sources and systems, including fossil fuels and nuclear energy, and then focus on alternatives, renewable energy sources such as solar, biomass (conversions), wind power, waves and tidal, geothermal, ocean thermal, hydro and nuclear.
2) To emphasize energy conservation methods from Civil Engineering perspective.
3) To lays a good foundation for design of various civil engineering systems/ projects dealing with these energy generation paradigms in an efficient manner.

Course Outcomes:

Upon successful completion of the course, the students will be able to:

1) List and explain the main sources of energy and their primary applications nationally and internationally
2) Understand effect of using different energy sources on the environment and climate
3) Describe the challenges and problems associated with the use of various energy sources, including fossil fuels, with regard to future supply and the impact on the environment.
4) List and describe the primary renewable energy resources and technologies.
5) Understand the Engineering involved in projects utilising these energy sources

Syllabus:

Unit 1: **Introduction to Energy Science:** **(2 Hrs)**

Scientific principles and historical interpretation to place energy use in the context of pressing societal, environmental and climate issues; Introduction to energy systems and resources; Introduction to Energy, sustainability & the environment

Unit 2: Energy Sources: **(3 Hrs)**

Overview of energy systems, sources, transformations, efficiency, and storage. Fossil fuels (coal, oil, oil-bearing shale and sands, coal gasification) - past, present & future, Remedies & alternatives for fossil fuels - biomass, wind, solar, nuclear, wave, tidal and hydrogen; Sustainability and environmental trade-offs of different energy systems; possibilities for energy storage or regeneration e.g. Pumped storage hydro power projects.

Unit 3: Energy & Environment: **(3 Hrs)**

Energy efficiency and conservation; introduction to clean energy technologies and its importance in sustainable development; Carbon footprint, energy consumption and sustainability, How future energy use can be influenced by economic, environmental, trade, and research policy.

Unit 4: Civil Engineering Projects connected with the Energy Sources: **(3 Hrs)**

Coal mining technologies, Oil exploration offshore platforms, Underground and under-sea oil pipelines, solar chimney project, wave energy caissons, coastal installations for tidal power, wind mill towers; hydro power stations above-ground and underground along with associated dams, tunnels, penstocks, etc.; Nuclear reactor containment buildings and associated buildings.

Unit 5: Engineering for Energy conservation: **(3 Hrs)**

Concept of Green Building and Green Architecture; Green building concepts , LEED ratings; Identification of energy related enterprises that represent the breath of the industry and prioritizing these as candidates; Embodied energy analysis and use as a tool for measuring sustainability. Energy Audit of Facilities and optimization of energy consumption.

Text/Reference Books:

1. Boyle, Godfrey (2004), Renewable Energy (2nd edition). Oxford University Press
2. Boyle, Godfrey, Bob Everett, and Janet Ramage (Eds.) (2004), Energy Systems and Sustainability: Power for a Sustainable Future. Oxford University Press
3. Schaeffer, John (2007), Real Goods Solar Living Sourcebook: The Complete Guide to Renewable Energy Technologies and Sustainable Living, Gaiam
4. Jean-Philippe; Zaccour, Georges (Eds.), (2005), Energy and Environment Set: Mathematics of Decision Making, Loulou, Richard; Waaub, XVIII,
5. Ristinen, Robert A. Kraushaar, Jack J. AKraushaar, Jack P. Ristinen, Robert A. (2006) Energy and the Environment, 2nd Edition, John Wiley
6. UNDP (2000), Energy and the Challenge of Sustainability, World Energy assessment
7. E H Thorndike (1976), Energy & Environment: A Primer for Scientists and Engineers, Addison-Wesley Publishing Company
8. Energy Technology, O.P. Gupta, Khanna Book Publishing Co. (P) Ltd., Delhi
9. Energy Engineering & Management, Chakrabarti A., PHI Publications.
10. Related papers published in international journals

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology
Credit System structure of T. E. Civil-I, Semester- V, (Revised from 2018-2019)

Course code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV-311	Design of Steel Structures	3	-	-	-	3	30	70		-	100
CV-312	Geotechnical Engg.-I	3	-	-	-	3	30	70		-	100
CV-313	Environmental Engg.-I	3	-	-	-	3	30	70		-	100
CV-314	Water Resources Engg. II	3	-	-	-	3	30	70		-	100
CV-315	Transportation Engg.-I	3	-	-	-	3	30	70		-	100
SLH-31	Self Learning (H.S.S. course)	-		-	-	2	-	50		-	50
	Total	**15**				**17**	**150**	**400**		**-**	**550**
	Laboratory/Drawings							**POE**	**OE**		
CV-311	Design of Steel Structures	-	-	2	-	1	-	-	-	25	25
CV-312	Geotechnical Engg.I	-	-	2	-	1	-	25	-	25	50
CV-316	Building Planning & Design using CADD	1	-	-	4	3	-	-	25	50	75
CV-313	Environmental Engg.I	-	-	2	-	1	-	-	-	25	25
CV-314	Water Resources Engg. II	-	-	2	-	1	-	-	25	25	50
CV-315	Transportation Engg.-I	-	-	2	-	1	-		-	25	25
	Total	**-**	**-**	**10**	**4**	**8**	**-**	**75**		**175**	**250**
	Grand Total	**16**		**10**	**4**	**25**	**150**	**475**		**175**	**800**

Abbreviations: L: Lectures, P: Practical, T: Tutorial, D: Drawing. ISE: In Semester Examination Tests, ESE: End Semester Examination - University Examination (Theory &/ POE &/Oral examination), ICA: Internal Continuous Assessment.

Note:

(1) Students shall undergo a field training of total 30 days in two phases including at least 15 days in the winter vacation after T.E. Civil Part -I and at least 15 days in summer vacation after T.E. Civil Part-II. They shall submit the field training report of the first phase to the faculty associated with subject Engineering Management- I in their T.E. Part-II. They shall submit field training report of the second phase to concerned 'Project' guides in B.E. Part-I.

(2) Internal Continuous Assessment (ICA) shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

(3) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7, then a new batch be formed.

1. Curriculum for Humanities and Social Sciences (HSS) Self Learning Courses is common for all under graduate programmes of Faculty of Engineering and Technology.

2. For self Learning at T.E. Civil Part I –

A. Student shall select a 'Self Learning Course' from Solapur University, Solapur 'HSS Course List' and appear for its examination as and when conducted by Solapur University, Solapur.

Minimum four assignments for Self Learning Modules at T. E. Part I shall be submitted by the students which shall be evaluated by a 'Module Coordinator' assigned by institute / department.

OR

1. Student with prior approval of the institute shall select and enroll for 'National Programme on Technology Enhanced Learning (NPTEL)' course from HSS domain with minimum eight weeks duration, complete necessary assignments and appear for certificate examination as per the NPTEL schedule during respective semester.

For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur. More details about NPTEL are available at http://nptel.ac.in

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology
Credit System structure of T. E. Civil-II, Semester - VI, W. E.F. 2018-2019

Course code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV-321	Structural Mechanics-III	3	-	-	-	3	30	70		-	100
CV-322	Geotechnical Engg.II	4	-	-	-	4	30	70		-	100
CV-323	Environmental Engg.II	3	-	-	-	3	30	70		-	100
CV-324	Engineering Management- I	3	-	-	-	3	30	70		25	125
CV-325	Elective-I	3	-	-	-	3	30	70		-	100
CV-326	Self Learning (Technical course)	-	-	-	-	2	-	50		-	50
	Total	**16**	**0**	**-**	**-**	**18**	**150**	**400**		**25**	**575**
	Laboratory/Drawings:						-	**POE**	**OE**		
CV-321	Structural Mechanics-III	-	-	2	-	1	-	-	-	25	**25**
CV-322	Geotechnical Engg.II	-	-	2	-	1	-	-	-	25	**25**
CV-323	Environmental Engg.II	-	-	2	-	1	-	-	25	25	**50**
CV-325	Elective-I	-	-	2	-	1	-	-	-	25	**25**
CV-327	Project on Steel Structures	-	-	-	4	2	-	-	25	50	**75**
CV-328	Mini Project in SM-III/GE-II/EE-II/EM-I using Application Software	-	-	2		1				50	**50**
CV-329	Assessment of field training report	-	-	-	-	1				25	**25**
	Total	**-**	**-**	**10**	**4**	**8**			**50**	**225**	**275**
	Grand Total	**16**	**0**	**10**	**4**	**26**	**150**	**450**		**250**	**850**

Abbreviations: L: Lectures, P: Practical, T: Tutorial, D: Drawing, ISE: In Semester Examination Tests, ESE: End Semester Examination - University Examination (Theory &/ POE &/Oral examination), ICA: Internal Continuous Assessment.

Note:

1. Student/s shall carry out 'Mini Project' in any one of the following subjects: Structural Mechanics-III, Geotechnical Engg. II, Environmental Engg. II or Engineering Management-I by preferably employing relevant application software. The Mini project shall be assessed by the domain subject teachers for ICA.

2. Students shall undergo a field training of total 30 days in two phases including at least 15 days in the winter vacation after T.E. Civil Part I and at least 15 days in summer vacation after T.E. Civil Part-II. They shall submit the field training report of the first phase to the faculty associated with subject Engineering Management- I in their T.E. Part-II. They shall submit field training report of the second phase to concerned 'Project' guides in B.E. Part-I.

3. Internal Continuous Assessment (ICA) shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

4. The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7, then a new batch be formed.

5. For Self Learning at T.E. Civil Part II -

   Student shall select a 'Self Learning Technical Course' from Solapur University, Solapur Technical Course List (Civil Engineering) and appear for its examination, as and when conducted by Solapur University, Solapur. Minimum four assignments for Self Learning Modules at T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department.

   OR

   i. Student with prior approval of the institute shall select and enroll for any 'National Programme on Technology Enhanced Learning (NPTEL)' course from Civil Engineering domain/Interdisciplinary course, with minimum eight weeks duration, complete necessary assignments and appear for certificate examination as per the NPTEL schedule during respective semester.

   More details about NPTEL are available at http://nptel.ac.in

LIST OF ELECTIVE SUBJECTS (CV-325)

T. E. Civil Part-II	
ELECTIVE I	
i.	Advanced Design of Steel Structures
2	Industrial Waste Treatment
3	Water Power Engineering
4	Advanced Concrete Technology
5	Reliability Engineering
6	Finite Element Method
7	Experimental Stress Analysis
8	Optimization Techniques
9	Disaster Management

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

w. e. f. Academic Year 2018-19

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

(4) Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)

(5) Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

3. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

4. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

5. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

2. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
3. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
4. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

6. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
7. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

ii. Formal organization (bureaucracy)

iii. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

ii. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
iii. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
iv. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1) Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.

2) D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.

3) Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985. *w. e. f.*

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

1) Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2) Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3) R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1) Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2) Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART II
CV- 323 ENVIRONMENTAL ENGINEERING –II

Teaching Scheme:		Examination Scheme:	
Lectures:	3Hrs/Week, 3 Credits	**ICA:**	25 Marks
Practical :	2 Hrs/Week, 1 Credit	**ISE:**	30 Marks
		ESE (Lab):	25 Marks
		ESE(Theory):	70 Marks

Course Objectives

4. To acquaint the students with the characterization of municipal waste, as well as sewage collection & conveyance systems.
5. Study of Primary and Secondary treatment methods of sewage, and concept of recycling the wastewater.
6. Familiarize the students with stream pollution due to waste disposal and suitable centralized/decentralized wastewater Treatment system
7. Learning solid waste and hazardous waste management systems for urban areas.
8. Understanding various sources of air pollution, its measurement and control.

Course Outcomes

Upon successful completion of course the student will be able to:

4) Plan the layout of sewage collection system, matching the topography of the region and characterization of sewage.
5) Decide sequence and design of wastewater treatment units to meet the sewage treatment standards.
6) Design the wastewater treatment plant using Trickling filter, anaerobic treatment and low cost treatment methods
7) Adopt appropriate methods of Solid waste Disposal and Management of hazardous waste.
8) Measure air pollution and adopt control measures to control of industrial air pollution.

SECTION-I

Unit -1: Collection and conveyance of Sewage (08)

Components of wastewater flows, waste water sources and flow rate. Variation in flow rates, waste water constituents, Characteristics of municipal waste water, Quantity of storm water, Ground water infiltration.

Sewerage system, layout, types of sewers, collection system. Appurtenances Design of sanitary and storm water sewers, Maintenance of sewerage systems.

Sewage and sludge pumping, location, capacity and types of pumps, pumping station design.

Unit-2: Unit Operations (10)

Primary treatment- Screening, comminuting, grit removal, oil and grease trap, chemical precipitation.

Secondary treatment- Activated sludge process, Process design and operating parameters, modification of ASP, operational problems . SBR and MBR. Trickling filter, classification, process design considerations . Secondary Clarifications.

Unit -3: Anaerobic treatment and Low cost treatment (06)

Fundamentals of anaerobic treatment, sludge characteristics, Treatment and disposal, Concept of different anaerobic reactors.

Low cost waste water treatment methods- Principle of waste stabilization pond.

Design and operation of oxidation pond, aerobic and anaerobic lagoons, Aerated lagoon, Oxidation ditch, septic tank.

Selection of alternative treatment process flow sheets. Concept of recycling of wastewater (Gray water and brown water.)

SECTION-II

Unit-4: Disposal of waste water (08)

3. Disposal of waste water stream pollution, Self purification, DO sag curve, Streeter Phelp's Equation.
4. Emerging Technology for wastewater Treatment- Centralized Sewage Treatment System, objectives of small & decentralized wastewater Treatment system

   i. Root zone Technology, ii. Constructed Wetlands, iii. Duckweed Ponds, iv. Fluidized aerobic bed Technology, v. UASB

Unit -5: Solid Waste Disposal (06)

Solid waste management - Solid waste definition, Types, sources, characteristics. Functional outlines- storage, collection, processing techniques, Treatments of solid waste-Composting, Incineration, Pyrolysis and sanitary land filling.

Unit -6: Air Pollution (07)

Air Pollution- Definition, Sources and classification of pollutants, Effects. Introduction to meteorological aspects of control of industrial air pollution- Settling Chamber, Bag filter, Cyclone separator, Scrubbers, Electrostatic precipitators. Control of vehicular air pollution. Air quality standards

CV- 323 ENVIRONMENTAL ENGINEERING –II (Laboratory)
INTERNAL CONTINUOUS ASSESSMENT (ICA)

The Internal Continuous Assessment (ICA) work includes practical work to find the characteristics of wastewater and demonstration of Air monitoring equipments and design of sewage treatment plant

Internal Continuous Assessment (ICA) work shall consist of the following:-

4) List of Experiments (Any Eight)

   Analysis of Waste Water

   1. pH Value.

Total Solids

Biochemical Oxygen Demand

Chemical Oxygen Demand

Chlorides

Oil & Grease

Sulphate Content

Total Nitrogen

Demonstration of High Volume Sampler

Demonstration of Auto Exhaust Analyzer.

1) Design of sewerage system & Treatment system for a small urban area.
2) Visit to sewage treatment plant

Internal Continuous Assessment (ICA) submission shall consist of the following –

1) Journal containing experiments carried out in part A of the Internal Continuous Assessment (ICA) and visit Report on C
2) Detail design and appropriate drawings required for part B of the Internal Continuous Assessment (ICA) work.

END SEMESTER EXAMINATION (oral)

Oral examination will be based on the above syllabus.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Environmental Engineering by Peavey- H. S. Rowe, D.R. and Thobanoglous, [McGraw – Hill Book Company]
2. Water supply and pollution control - Viessman W. and Hammer M.J. [Harper Collins College Publishers.]
3. Waste Water Engineering Treatment & Disposal - Metcalf & Eddy, [Tata McGraw Hill, 1982]
4. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
5. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
6. Waste water Supply Engineering by B. C. Punmia

i) Solid Waste Management in Developing countries - Bhide A.D. and Sundersen B.B. [Indian National Scientific Documentation Centre, New Delhi]

ii) Air Pollution- Rao M.N. and Rao H.V.N. [Tata McGraw Hill, 1990]

REFERENCE BOOKS

i) Manual on sewerage & sewage Treatment published by Ministry of Urban Development Govt. of India Msy-2000. 35 PDOP-4-59-85-97, Ministry of Urban development

ii) Water and waste water Technology - Hammer M.J, [Prentice-Hall of India Private ltd.]

iii) Masters. G.M. Introduction to Environmental Engineering and Science

iv) Manual on Municipal Solid Waste Management- Ministry of Urban Development Govt. of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T. E. (CIVIL) PART – II

CV- 325 ELECTIVE – I

INDUSTRIAL WASTE TREATMENT

Teaching Scheme:		Examination Scheme:	
Lectures:	3Hrs/Week, 3 Credits	**ICA:**	25 Marks
Practical :	2 Hrs/Week, 1 Credit	**ISE:**	30 Marks
		ESE(Theory):	70 Marks

Course Objectives:

1) To understand sources of waste water in different industries.
2) To study waste water treatment options for different industries.
3) To acquire knowledge about disposal of effluents and the standards for disposal

Course Outcomes:

On successful completion of this course the students will be able to:

1) Characterize different industrial wastes
2) Suggest treatment alternative based on characteristics of industrial waste.
3) Demonstrate basic knowledge of legislation for pollution control

SECTION -I

Unit 1: **(5)**

Use of water in industry, Sources of wastewater, quality, and quantity variation in waste discharge, water budgeting, characterization and monitoring of wastewater flow, Grab samples and Composite samples. Population equivalent, Relative stability and Theoretical oxygen demand. Water quality criteria and effluent standards. Introduction to water quality index (WQI), methods used.

Unit 2: **(7)**

Waste volume and strength reduction, In-Plant measure, good housekeeping, Process change, leakage prevention, segregation, recycling, neutralization, equalization and proportioning of waste. In line equalization, Side line equalization. Methods for determining volume of equalization tank.

Unit 3: **(7)**

Water quality monitoring of streams, Self-purification of stream, Streeter Phelphs equation, Classification of streams. B.O.D. reaction rate - Method of least squares, Thomas method and Fujimoto method. D.O. Sag curve and D.O. deficit calculations.

Unit 4: **(4)**

Miscellaneous methods of dissolved solids removal- Ion-exchange, Electro dialysis, Reverse osmosis and Evaporation, Adsorption. Sludge disposal methods.

SECTION –II

Unit 5: **(4)**

Different types of waste treatment and their selections, Development of treatment flow diagram based on characteristics of waste. Pollution characteristics of common Industries.

Unit 6: **(9)**

Manufacturing processes in major industries, water requirements, wastewater sources, composition of wastes, Viz. Sugar, Distillery, Dairy, Pulps, Paper mill, Fertilizer, Tannery, Chemical, Steel Industry, power Plants, Textile Treatment flow sheets, alternative methods of treatment, factors affecting efficiency of treatment plant. Effect of above industrial wastes on receiving water bodies.

Unit 7: **(4)**

Introduction to the concept of zero discharge, Recycling and reuse and recovery Introduction to 3R principles to convert waste into wealth, Acclimatization of bacteria to toxic wastes, process sensitivity, operation and maintenance requirements.

Unit 8: **(5)**

Water pollution control act, organizational set up of central and state boards for water pollution control, classification of river on water use, minimal national standards, socioeconomic aspects of water pollution control.

Introduction to Wetland treatment – Root zone cleaning system. Introduction to green processes in the industries.

CV- 325 ELECTIVE – I

INDUSTRIAL WASTE TREATMENT (Laboratory)

INTERNAL CONTINUOUS ASSESSMENT (ICA)

I) Visit to any four of the following industries

Sugar industry

Distillery industry

Dairy industry

Textile industry

Tannery

Paper and Pulp

Common effluent treatment plant (CETP)

Note: - Detailed visit report shall be prepared for each of the industrial visit

2) One assignment on each unit.

TEXT BOOKS:

II) Industrial Waste Treatment - Nelson Nemerow, Addison - Wesley

JJ) Industrial Waste Treatment – Rao & Datta, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi

KK) Industrial Waste Water Treatment- Dr. A. D. Patwardhan, Prentice Hall of India

REFERENCE BOOKS:

III) Water and Waste Water Engg.- Fair G.M., Gayer J.C. and Okun D.A. , John Wiley Publication

JJJ) Water and Waste Water Technology, M. J. Hammer and M. J. Hammer(Jr.)

KKK) Waste Water Engineering – Metcalf Eddy - Mc Graw Hill Publications.

T. E. (CIVIL) PART – II

CV- 325 ELECTIVE – I

DISASTER MANAGEMENT

Teaching Scheme:		Examination Scheme:	
Lectures:	3Hrs/Week, 3 Credits	**ICA:**	25 Marks
Practical :	2 Hrs/Week, 1 Credit	**ISE:**	30 Marks
		ESE(Theory):	70 Marks

Course Objectives:

I) Study of various disasters, their characteristics, causes and impacts.

J) Acquaint with the various disaster management stages to prevent or reduce losses that occur due to hazards during disaster and emergencies.

K) Provide information regarding various programmes of International, National and State and District Level Agencies for disaster management.

Course Outcomes:

By the end of the course students will be able to

II) Apply various disaster preparedness, mitigation and management techniques.

JJ) Apply the Geo-informatics techniques for prepare hazard zonation maps for Disaster management.

KK) Apply the various schemes and programmes of International, National and State and District Level Agencies for disaster management.

SECTION-I

Unit 1: **(08)**

Environmental Hazards and Disasters

Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress & Environmental Disasters. Different approaches & relation with human Ecology- Landscape Approach- Ecosystem Approach- Perception approach- Human ecology & its application in geographical researches.

Unit 2: **(08)**

Types of Environmental hazards and Disasters:-

Natural disaster and Planetary Hazards

Earthquake Hazards/ disasters- Introduction, general characteristics, mechanism, causes and effects of Earthquakes, prediction, seismic zones, seismic waves, vulnerability, damage potential

III) magnitude and intensity, Earthquake Hazards in India- Human adjustment, perception and mitigation of earthquake.

Volcanic Hazards/Disasters:- Volcanoes Causes of volcanism, volcanic materials, hazardous effects and impacts of volcanic eruptions.

Landslide and Land Degradation:- Causes, tectonic conditions, erosion, avalanches, rock fall, damage assessment. Landslide prone area in India.

Cyclones and Tsunamis:- Structure and nature of cyclones (Tropical cyclones & Local storms)

1. tsunamis, characteristics, hazard donation, factors, hazard potential, impact assessment. Cyclone prone areas in India.

Floods:- General characteristics, causes, Flood hazards India, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management (Human perception & mitigation). **Droughts:-** Cause and Impacts of droughts- Drought hazards in India- Drought control measures.

Man-made Disaster and Extra Planetary Hazards/ Disasters

Man induced Hazards /Disasters-Physical hazards/ Disasters-Soil Erosion

Soil Erosion:- Mechanics & forms of Soil Erosion- Factors & causes of Soil Erosion, Conservation measures of Soil Erosion.

Mining:- Mining and environment, land & environment degradation and management, Mined land reclamation.

War and Chemicals disaster: - Release of toxic chemicals Hazardous wastes, reactivity, toxicity, nuclear war, biological weapons, armed conflicts, land mines etc.

Sedimentation processes: - Global Sedimentation problems, Regional Sedimentation problems. Sedimentation & Environmental problems- Corrective measures of Erosion & Sedimentation. **Biodiversity Extinction and Deforestation:-** Biodiversity, species at risks, loss of biodiversity, management of species diversity, deforestation its causes & adverse effects.

Biological hazards/ disasters:- Population Explosion.

Unit 3: **(06)**

Disaster Management:- Three Stages

Pre-disaster stage (Preparedness):- Introduction to disaster preparedness, Three A's of disaster preparedness, principles of disaster preparedness, steps in disaster preparedness, Preparing hazard zonation maps, Predictability/ Forecasting & warning, preparing disaster preparedness plan. Land use zoning- Preparedness through (IEC) Information, education and Communication. Disaster resistant house construction- Population reduction in vulnerable areas- Awareness.

Emergency stages: - Planning, mitigation, preparedness, response and recovery.

Post Disaster stage (Rehabilitation):- Physical and Social Infrastructure, Social and economic rehabilitation, Repair and retrofitting, Political Administrative Aspect.

SECTION-II

Unit 4: **(05)**

Natural Disaster Reduction and Management:- Provision of Immediate relief measures to disaster affected people-Prediction of Hazards & Disasters-Measures of adjustment to natural hazards.

Unit 5: **(09)**

Disaster Mitigation:-

Disaster Mitigation through Development: Disaster Mitigation: Basic Concepts, Meteorological and Seismological observation, Structured and Non Structured Mitigation, disaster mitigation strategies, importance of Information and Communication in Disaster Mitigation, Relationship between Disaster and Development, Sustainable Development for Disaster Mitigation, Importance of various Agencies/sectors involved for disaster mitigation.

Education on disasters -Community involvement, The adjustment of Human Population to Natural hazards & disasters. Role of database in Disaster Mitigation, GIS and GPS applications.

Role of Media

Monitoring Management- Programme of disaster research and mitigation of disaster of following organizations. International Council for Scientific Unions (ICSU)-Scientific committee on problems of the Environment (SCOPE), International Geosphere Biosphere programme (IGBP) -

World federation of Engineering Organizations (WFED). National Academy of Sciences-World Meteorological organizations (WMO). Various U.N agencies like UNCRD, IDNDR, WHO, UNESCO, UNICEF, UNEP.

Unit 6: **(09)**

Agencies in Disaster Management

International Agencies: United Nations and its specialized agencies like UNDP, FAO, WHO AEC (Atomic Energy Commission), United Nations Disaster Management Cell, New Delhi. International Federation of Red Cross and Red Crescent Societies (IFRC) and National Red Cross/Red Crescent Societies.

National Agencies: Disaster Management Cell (Ministry of Home Affairs, Govt. of India), National Institute of Disaster Management, Indian Red Cross Society, Planning Commission, National Civil Defense Organization, Bharat Scouts and Guides. Military and Para-Military Forces; Corporate Bodies etc.

State and District Level Agencies: Disaster Management cells at state level and District level, District Magistrate office, Role and Responsibilities of DM in prevention, preparedness, mitigation, relief and rehabilitation; local bodies and role of different functionaries-

CV- 325 ELECTIVE – I

DISASTER MANAGEMENT (Laboratory)

INTERNAL CONTINUOUS ASSESSMENT (ICA)

1. Practical exercise on each unit
2. Each student will be required to prepare a project work of Coastal Ecosystem, Desert Eco System and Mountain Eco System & submit it at the end of year & this will be evaluated by an internal as well as external examination

TEXT BOOKS

1. The Environment as Hazards, Kates, B.I& White, G.F, Oxford, New York, 1978
2. Disaster Management, R.B. Singh, Rawat Publication, New Delhi, 2000.
3. Disaster Management H.K. Gupta, Universities Press, India, 2003.
4. Space Technology for Disaster Mitigation in India (INCED), R.B. Singh, University of Tokyo, 1994.
5. Disaster Management in Hills, Dr. Satender, Concept Publishing Co., New Delhi, 2003.
6. Plan for Earthquake, Disaster, Mitigation, Disaster Management, A.S. Arya, V.K. Sharma, Action IIPA Publication New Delhi, 1994.
7. An overview on Natural and Man-made Disaster & their Reduction, R.K. Bhandani, SIR, New Delhi.
8. Disaster Mitigation, Preparedness, Recovery and Response, P. C. Sinha, SBS Publishers and Distributors Pvt. Ltd.
9. Introduction to International Disaster Management, D. P. Coppola, Butterworth-Heinemann.
10. Disaster Management M. Sharma, Vinod K., NCDM, IIPA, New Delhi, 1994
11. Housing in Disaster prone areas, National Building Organization and U.N. Regional Centre, Mathur G.C., ESCAP, New Delhi, 1986.
12. Disaster Management, Dr. Mrinalini Pandey, Wiley Publication.

REFERENCE BOOKS

1. Disaster Management in India – A Status Report, National Disaster Management Division, Ministry of Home Affairs, Govt. of India, 2004.
2. Disaster Management and Preparedness, Collins Larry R. and Scheind Thomas D. (2000)., Taylor and Francis, 2000.
3. Disaster Management, Sharma V.K., Indian Institute of Public Administration, New Delhi, 1995.
4. National Disaster Response Plan, NCDM, New Delhi, 2001.

1) Manuals on Natural Disaster management in India, M.C. Gupta, National Centre for Disaster Management, IIPA, New Delhi, 2001.
2) Management of Floods, National Disaster Management Authority, Government of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART- II

CV- 326 Planning for Sustainable Development

(Self Learning Technical Course)

		Examination Scheme:	
Credits:	2	**ESE(Theory):**	50 Marks

Unit 1:

Sustainable Development-explains and critically evaluates the concept of sustainable development, Environmental degradation and poverty Sustainable development: its main principles, the evolution of ideas about sustainability, strategies for promoting sustainable development, resistances to the concept, and some alternative approaches. Examine some important current issues and areas of debate in relation to sustainable development.

Unit 2:

Innovation for sustainable development- Environmental management and innovation strategies.

Unit 3:

Societal transformations. Institutional theory.

Unit 4:

Governance for sustainable development. Policy responses to environmental degradation.

Unit 5:

Capacity development for innovation. Research methods.

ASSIGNMENTS

The work for Internal Continuous Assessment (ICA) will consist of total five assignments, based on syllabus. (One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the work designated for Internal Continuous Assessment (ICA).

TEXT BOOKS

1. Harris, J.M. (2204) Basic Principles for Sustainable Development, Global Development and Environment Institute, working paper 00-04. Available at: http://ase.tufts.edu/gdae/publications/Working_Papers/Sustainable%20Development.PDF
2. Robinson, J. (2004) Squaring the circle? Some thoughts on the idea of sustainable development Ecological Economics 48(4): 369-384.
3. Hjorth, P. and A. Bagheri (2006) Navigating towards Sustainable Development: A System Dynamics Approach, Futures 38: 74-92.

REFERENCE BOOKS

1. Mog, J.M. (2004) „Struggling with Sustainability – A Comparative Framework for Evaluating Sustainable Development Programs", World Development 32(12): 2139–2160. IISD commentary on the OECD's Draft Principles for International Investor Participation in Infrastructure (PDF – 68 kb)
2. Arundel, A., R. Kemp, and S. Parto (2004) Indicators for Environmental Innovation: What and How to Measure, forthcoming in International Handbook on Environment and Technology Management (ETM), edited by D. Annandale, J. Phillimore and D. Marinova, Cheltenham, Edward Elgar.
3. Douthwaite, B. (2002) Enabling Innovation. A practical guide to understanding and fostering innovation, London

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Science & Technology

Choice Based Credit System structure of B. E. Civil –I; Semester – VII, W. E.F. 2019-2020

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Design of Concrete Structures-I	3	1	-	-	4	30	70		25	**125**
Quantity Surveying & Valuation	3	-	-	-	3	30	70		-	**100**
Earthquake Engg.	3	-	-	-	3	30	70		-	**100**
Engineering Management- II	3	-	-	-	3	30	70		-	**100**
Elective - II	3	-	-	-	3	30	70		-	**100**
Total	**15**	**1**	**-**	**-**	**16**	**150**	**350**		**25**	**525**
Laboratory/Drawings:							**POE**	**OE**		
Quantity Surveying & Valuation	-	-	4	-	2	-	50	-	50	**100**
Earthquake Engg.	-	-	2	-	1	-	-	-	50	**50**
Engineering Management- II	-	-	2	-	1	-	-	25	-	**25**
Elective - II	-	-	2	-	1	-	-	25	25	**50**
Seminar	-	-	2	-	1	-	-	-	50	**50**
a) Project work b) Assessment of report on field training-II	- -	- -	2 -	- -	1 1	- -	- -	- -	25 25	**25** **25**
Total	**-**	**-**	**14**	**-**	**8**	**-**	**100**		**225**	**325**
Grand Total	**15**	**1**	**14**	**-**	**24**	**150**	**450**		**250**	**850**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

w. e. f. Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Science & Technology

Choice Based Credit System structure of B. E. Civil –II, Semester – VIII, W. E.F. 2019-2020

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Design of Concrete Structures-II	4	-	-	-	4	30	70		-	**100**
Construction Practices and Town Planning	4	-	-	-	4	30	70		25	**125**
Transportation Engineering-II	4	-	-	-	4	30	70		25	**125**
Elective - III	4	-	-	-	4	30	70		-	**100**
Total	**16**	**-**	**-**	**-**	**16**	**120**	**280**		**50**	**450**
Laboratory/Drawings							**POE**	**OE**		
Design of Concrete Structures-II	-	-	2	-	1	-	-	-	50	**50**
Elective - III	-	-	2	-	1	-	-	25	25	**50**
Project on R. C. C. Structures	-	-	-	4	2	-	-	50	50	**100**
Project work	-	-	6	-	3	-	-	100	100	**200**
Total	**-**	**-**	**10**	**4**	**7**	**-**	**175**		**225**	**400**
Grand Total	**16**	**-**	**10**	**4**	**23**	**120**	**455**		**275**	**850**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

.**Note:**

(1) Project group be of @ 7 students.
(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.
(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

w. e. f. Academic Year 2019-20

LIST OF ELECTIVE SUBJECTS

B. E. Civil Part-I		B. E. Civil Part-II	
ELECTIVE II		ELECTIVE III	
1	Open Channel & River Hydraulics	1	Advanced Engg. Geology
2	Air Pollution & Control	2	Ground improvement Techniques
3	Design of Foundations	3	Traffic Engg. & Control
4	Advanced Design of Concrete Structures	4	Infrastructural Engineering
5	Managerial Techniques	5	Project Appraisal
6	Computer Applications in Civil Engg.	6	Solid and Hazardous & Waste Management
7	Advanced structures	7	Dynamics of Structures
8	Entrepreneurship	8	Environmental Management
9	Remote Sensing and GIS Applications	9	Design of Bridges

w. e. f. Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

B.E. (CIVIL) PART – I (CBCS)

5. ELECTIVE- II

5.2 AIR POLLUTION AND CONTROL

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hrs/Week, 1 Credits	**ESE –**70 Marks
	ICA –25 Marks
	ESE (OE) – 25 Marks

Course Objectives:

1. To study Sources, Causes & effects of Air Pollution.
2. To study the relation between Meteorology and Air Pollution.
3. To learn methods used for controlling air pollution.
4. To study Air pollution Prevention and legislation.

Course Outcomes:

On successful completion of this course the students will be able to

1. Identify the sources of air pollutants and their effect on human, plants and materials.
2. Apply knowledge of meteorology for controlling air pollution
3. Design air pollution controlling equipments.
4. Apply knowledge of legislation for prevention and control of air pollution.

SECTION –I

Unit 1: Introduction (3)

The Structure of the atmosphere, Composition of dry ambient air and properties of air. BIS Definition and scope of Air Pollution, Scales of air pollution, Types of exposures.

Unit 2: Air pollution sources (5)

Air Pollutants, Classifications, Natural and Artificial, Primary and Secondary, point and Non-Point, Line and Area Sources of air pollution. Stationary and mobile sources. composition of particulate & gaseous pollutant, units of measurement.

Unit 3: Effects of Air pollutants (6)

Effect of different air pollutants on man, animals, vegetation, property, aesthetic value and visibility, air pollution episodes. Global effects of air pollution- global warming,

ozonedepletion, acid rain and heat island effect.

Unit 4: Meteorology and Air pollution (8)

Solar radiation, wind circulation, factors affecting dispersion of pollutants, Lapse rate, stability conditions, wind velocity profile, Maximum mixing depth (MMD), visibility, Wind rose diagram, General characteristics of stack plume (Plume behaviour). Gaussion diffusion model for finding ground level concentration. Plume rise. Formulae for stack height and determination of minimum stack height.

SECTION –II

Unit 5: Air sampling and analysis (5)

Air pollution survey, basis and statistical considerations of sampling sites. Devices and methods used for sampling gases and particulates. Stack emission monitoring, isokinetic sampling. Analysis of air samples chemical and instrumental methods. Ambient air quality monitoring.

Unit 6: Photochemical smog, Odour pollution and Indoor pollution (6)

Chemistry of air pollution, Chain reactions of hydrocarbons, nitrogen oxide, Sulphuric oxides and intermediates, photochemical smog formation, air pollution indices -aerosols, fog, smog index.

Odour pollution: Theory, sources, measurement and methods of control of odour pollution. Indoor air pollution: Causes of air pollution, sources and effects of indoor air pollutants, changes in indoor air quality, control of indoor air pollutants and air cleaning systems.

Unit 7: Control of air pollution (8)

By process modification, change of raw materials, fuels, process equipment and process operation by use of air pollution control equipment for particulate and gaseous pollutants. Design of control equipment as Settling chamber, cyclone, fabric filter, Electro static precipitator and Wet scrubber.

Unit 8: Control of gaseous pollutants and Legislation (4)

Principles of removal of gaseous pollutants, design of incineration, absorption adsorption

systems. Control of air pollution from automobiles. Vehicular pollution, composition, quantity and control.

Air (Prevention and Control) Pollution Act, 1981.Emission standards for stationary and mobile sources. National Ambient air quality standards, 2009 (NAAQS).

INTERNAL CONTINIUOS ASSESSMENT (ICA)

The ICA shall consist:

1. Assignments / problems on Air pollution.
2. Sampling and analysis of Ambient Air
3. Sampling and analysis of Automobile exhaust
4. Demonstration of stack gas monitoring

Viva/Oral examination will be based on above theory syllabus and term work

TEXT BOOKS:

i. Air pollution – Wark and Warner
ii. Air Pollution – Rao and Rao, TMH
iii. Environmental Engineering – by Peavy and Rowe, TMH.
iv. Air Pollution and Control- Murali Krishna, Jain Brothers

REFERENCE BOOKS:

i. Air pollution – Martin Crawford
ii. Air Pollution and Control Technologies- Y. Anjaneyulu, Allied Publishers
iii. Fundamentals of Air Pollution- Raju BSN, IBH Publisher
iv. An Introduction to Air Pollution- R. K. Trivedi and Goyal, BS Publications.

w. e. f. Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

B.E. Civil (Part-I) (CBCS)

5. ELECTIVE – II

5.8 ENTREPRENEURSHIP

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hrs/Week, 1 Credits	**ESE –**70 Marks
	ICA –25 Marks
	ESE (OE) – 25 Marks

Course Objectives:

1. To familiarize the students with the concept of Entrepreneurship, Entrepreneur and Women Entrepreneur opportunities in the country.
2. To acquaint the student's innovative business ideas in emerging industrial scenario with 'small scale industries' policy resolutions.
3. To introduce the student's with finance and accounting aspects, Industrial and commercial tax laws
4. To acquaint the students to marketing management of entrepreneurship.

Course outcomes:

By the end of the course the students will be able to

1) Exhibit skills necessary to craft strategies and initiatives which can enable growth and sustainability in an entrepreneurial venture.
2) Prepare preliminary and final project report
3) Exhibit higher-level critical thinking skills, evidenced by analysis, evaluation, and synthesis.
4) Demonstrate skills to establish and manage the accounting process, to employ break even and cost-volume-profit tools.

SECTION – I

Unit 1: **(08)**

Meaning, Definition and concept of Enterprise, Entrepreneurship and Entrepreneurship Development, Evolution of Entrepreneurship, risks involved with entrepreneurship, barriers to Entrepreneurship, Factors affecting entrepreneurial growth.

w. e. f. Academic Year 2019-20

Entrepreneur, qualities of a successful entrepreneur, types of entrepreneurs (on basis of business, motivation, stages of development, entrepreneurial activity), functions of an entrepreneur, entrepreneurial competencies, types of entrepreneurial competencies. Concepts of Intrapreneurship, Entrepreneur v/s Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Role of Entrepreneurship in Economic Development, Factors affecting Entrepreneurship, Problems of Entrepreneurship. Creativity and Innovation, Innovation and Entrepreneurship.

Unit 2: (06)

Women Entrepreneurship:- Meaning, Characteristic features, Problems of Women Entrepreneurship in India, Developing Women Entrepreneurship in India, reasons for the slow growth of women entrepreneurship, remedies to solve the problems of women entrepreneurs. Measures taken for the development of women.

Entrepreneurship In India:- Training of Rural Youth For Self Employment, BANKS, NABARD, Industrial Policy, FICCI Ladies Organization (FLO), National Alliance of Young Entrepreneurs (NAYE).

Unit 3: (08)

Role of Government in promoting Entrepreneurship, MSME policy in India, Agencies for Policy Formulation and Implementation: District Industries Centres (DIC), Small Industries Service Institute (SISI),Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Financial Support System: Forms of Financial support, Long term and Short term financial support, Sources of Financial support, Development Financial Institutions, Investment Institutions. Finance, Institutional finance to Entrepreneurs, Preparation of Business Plans, Commercial Banks, Other financial institutions like IDBI,IFCI, ICICI, IRBI, LIC, UTI, SFCs, SIDCs, SIDBI, EXIM.

Bank Institution Support to Entrepreneurs: Need for Institutional support - Small Entrepreneurs: NSIC, SIDO, SSIB, SSICS, SISI, DICs, Industrial Estates Specialized Institutions.

w. e. f. Academic Year 2019-20

SECTION – II

Unit 4: **(08)**

Finance Analysis and accountancy: Estimation of cost of project and means of financing, working capital requirement and its financing, estimates of working results working capital and fixed capital assessment incentives from financial institutions and government, financial ratios, their significance, break even analysis cash flow charts financial statements.

Unit 5: **(07)**

Project Report: Preliminary and final project report preparation, financial technical commercial and economic viability project implementation process project profiles.

Unit 6: **(08)**

Introduction to Marking, Market study, Goal sitting, Sale and Sales Promotion. Industrial and commercial tax laws (major features only), Risk and Risk analysis, goal setting and decision making, Communication skills development and barriers.

Note: The subject may be taught with respect to suitable case studies and industrial visits. Audio video films shall be used on the above topics.

INTERNAL CONTINIUOS ASSESSMENT (ICA)

The ICA shall consist :

1. Preparation of preliminary and final project report of anyone small scale industry from civil Engineering field.
2. Report based on two industrial visits.

TEXT BOOKS:

1) Patterns of Entrepreneurship, Jack M. Kaplan Wiley Publications.
2) Planning and Industrial Unit, Jay Narayan Vyas, GranthVitran Shreyas, Opp. Jain Temple Near Navrangpura Bus Stop, Navrangpura

w. e. f. Academic Year 2019-20

3) Financing an Industrial Unit, Jay Narayan Vyas and Dilip Patel,Granthvitaran Ahmedabad .
4) Entrepreneurship Development Vol. I, II & III, Vasant Desai, Himalaya Publishing house.

REFERENCE BOOKS:

1) Entrepreneurship for the Nineties, Gordon B. Baty, Prentice Hall Inc. College Technical Reference by Granthvitaran.
2) Small Scale Industry Handbook, Jay Narayan Vyas, Granth Vitaran Ahmedabad
3) The Practice of Entrepreneurship, Geoffery G. Meredith R.E. Nelson and P. A. Neck, Published by International Labour Office, CH 1211, Geneva 22, Switzerland
4) Entrepreneurship Theory at Cross Road, Mathew J. Manimala, Biztantra publications.
5) Entrepreneurship and small business, WEBER, LEWIS, VOLERY, SCHAPER, Wiley publications.

w. e. f. Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

B.E. (CIVIL) – I (CBCS)

5. ELECTIVE – II

5.9 REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM APPLICATIONS

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hrs/Week, 1 Credits	**ESE –**70 Marks
	ICA –25 Marks
	ESE (OE) – 25 Marks

Course Objectives:

1) To gain understanding of the physics of remote sensing and an introduction to the major remote sensing systems that are in operation today.
2) To provide introductory understanding and working knowledge of Geographic Information Systems (GIS)
3) To gain applied experience in using GIS through a number of case study exercises.
4) An understanding of current research, technology and policy developments in the GIS/RS area and their potential applications to environmental and sustainability issues.

Course Outcomes:

By the end of the course students should be able to

1) Demonstrate the principles of remote sensing and digital image processing;
2) Exhibit knowledge of geographic information systems (GIS);
3) Apply remote sensing and GIS to solve problems in Civil Engineering
4) Use image processing and GIS application software.

SECTION-I

Unit No. 1 **(6)**

Introduction to Remote Sensing system: data acquisition and processing, Applications, Multi concept in remote sensing.

w. e. f. Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

B.E. (CIVIL) PART –II (CBCS)

4. ELECTIVE III

4.6 SOLID AND HAZARDOUS WASTE MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hrs/Week, 1 Credits	**ESE –**70 Marks
	ICA –25 Marks
	ESE (OE) – 25 Marks

Course Objectives:

1) To study the types, sources, generation of solid &hazardous waste.
2) To impart basic knowledge of collection, transportation, treatment and disposal of solid waste
3) To study handling and storage of solid and hazardous waste.

Course Outcomes:

Upon successful completion of course, the students will be able to:

1) Implement waste reduction and resource recovery methods
2) Select and adopt the appropriate waste disposal methods for the prevailing situation.
3) Identify the types of hazards and implement the precautionary methods.
4) Implement legal, political and administrative considerations in design and operation. of solid and hazardous waste management.

SECTION I

Solid Waste Management

Unit 1: **(06)**

Solid Waste management: Functional outlines of refuse, storage, transportation of refuse, analysis, composition and quantity of refuse, Economic aspects of refuse collection and transport.

Solid waste in industries, common types of solid waste, classification, collection and transportation. Concept of biomedical & Hazardous waste management.

Unit 2: **(05)**

Solid waste handling and Processing methods, Segregation and salvage recovery of

bye-products, use of solid waste as raw material in industries. Recycling of solid waste.

Unit 3: **(06)**

Composting: Theory of composting, types of composting, factors governing composting, processing before composting, mechanical composting plant, and recovery of Bio –gas energy from organic solid waste.

Unit 4: **(06)**

Incineration: Theory and types of incinerators, location, planning aspects, effects of feed, composition, rate and temperature, air supply, design of incineration plant, pyrolysis and its by-products, energy recovery.

Solid waste management rules, status of solid waste management in India.

SECTION –II

Hazardous Waste Management

Unit 5: **(06)**

Definition of Hazardous waste, Characteristics and nature of hazards, natural and man- made hazards, classification of hazards.

Unit 6 : **(04)**

Qualitative estimation of damages, risk assessment and management.

Unit 7: **(06)**

Types of hazardous waste, characteristics, Site assessment waste minimization resource recovery. Strategy for minimization of damage due to natural and manmade hazards.

Unit 8: **(06)**

Storage and handling of hazardous waste, Site Selection, Transportation of hazardous wastes. Case Studies of hazards, episodes. Sanitary landfill site selection, types of land filling, maintenance and precaution, leachate and its control, control of contamination of ground water.

INTERNAL CONTINIUOS ASSESSMENT (ICA)

The ICA shall consist:

1. Analysis of solid waste
2. Project on Design of Refuse collection & Disposal System for medium size town or a part of city.
3. Case study of Hazards and Episodes (Any Two).
4. Assignments (One Assignment on each unit)

TEXT BOOKS:

i) Solid Waste Management – Dr. A.D. Bhide

ii) Hazardous Waste Management – C. A. Wentz McGraw Hill International Edition

iii) Management of Municipal Solid Waste- T. V. Ramchandra, Capital Publishing company, New Delhi

iv) Solid and Hazardous Waste Management- M. N. Rao and Razia Sultana BS Publication

REFERENCE BOOKS:

i) Solid Waste Management – George Tchobanoglous, Mc Graw Publication

ii) Manual on Municipal Solid Waste management by ministry of Urban Development of Govt. of India.

iii) Solid Waste Management- I. H. Khan, and Naved Ahsan, CBS Publishers and Distributors, New Delhi.

w. e. f. Academic Year 2019-20

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

B.E. (CIVIL) PART –II (CBCS)

4. ELECTIVE III

4.8 ENVIRONMENTAL MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hrs/Week, 1 Credits	**ESE –**70 Marks
	ICA –25 Marks
	ESE (OE) – 25 Marks

Course Objectives:

1) To study principles of Environmental Management System.
2) To acquaint students with different Environmental pollution control acts.
3) To study the electronic, biomedical and industrial waste properties and waste management systems
4) To inculcate idea of Environmental Impact Assessment.

Course outcomes:

Upon successful completion of course the students will be able to:

1) Demonstrate basic principles of Environmental Management System.
2) Exercise different Environmental pollution control acts.
3) Select and apply appropriate technology for management of electronic, biomedical and industrial waste
4) Perform Environmental Impact Assessment of small project

SECTION-I

Unit 1: **(6)**

Fundamentals of environmental management system (EMS) and ISO 14000 series: History Background and development of ISO 14000, TC-207, ISO 14000 series. Environmental management Plans- Principles and elements. The ISO 14001-Environmental management systems standard, Definitions, Eco labeling, Auditing

Unit 2: **(6)**

Environmental management acts related to environmental protection: Air, Water, Soil and Hazardous Waste. Detailed study of following acts - Water act 1974(Prevention and control of pollution), Air act 1981 (Air pollution prevention and control of pollution), Hazardous waste management handling rules -1989. Municipal solid waste rules- 2000, Noise pollution regulation and control rules 2000 **(7)**

Unit 3 : **(5)**

Electronic waste management: Objectives, Classification of E-waste, guidelines for environmentally sound management of E-waste, environmentally sound treatment technology for E-waste, guidelines for environmentally sound integrated E-waste recycling and treatment policy International scenario, hazardous substances that can occur in E-waste.

Unit 4: **(5)**

Biomedical waste management: Introduction, Classification, Types, segregation, packaging and transportation and storage, possible hazards, Effects, Detailed study of Biomedical waste management and handling rules 1998.

SECTION –II

Unit 5: **(4)**

Air pollution control:, Air quality standards, Air pollution control technologies for oxides of sulphur: Reducing SOx levels through dilution by increasing stack height, use of alternative fuels. Extraction of sulphur from fuels. Reduction of sulphur in combustion process, fuel gas desulfurization.

Air pollution control technologies for oxides of Nitrogen: Emission of nitrogen oxides. Control technologies for oxides of nitrogen emissions. Air pollution control technologies for volatile organics, Hydrocarbons and hydrogen sulphide.

Unit 6: **(5)**

Advanced waste water treatment: Carbon adsorption, Ion exchange, sodium and hydrogen cycle. Membrane process. Electro dialysis process, pressure membrane process and

membrane performance characterization. Nutrients removal such as nitrogen and phosphorus removal. Land treatment systems: Irrigation, rapid infiltration and overland flow systems. Wetland flow Systems.

Unit 7: **(7)**

Environmental Impact Management (EIA)

I) Definition, Objectives of EIA .EIA procedure in detail, Role of different actors in EIA, components of EIA, Areas of human concern (Impact categories), Contents of EIA, Categories of projects under EIA, Introduction to Impact assessment methods such as Leopold matrix Legal provision for public participation in India,

Role of general public in Environmental clearance. Limitations of EIA

II) The environmental rules 1999, sitting for industrial process, methodology for preparing environmental impact assessment, role of regulatory agencies and control boards in obtaining Environmental clearance for project.

III) **Case studies:-**Positive and negative environmental impacts of Dams, Express highways, Major industries, Power plants

Unit 8: **(7)**

Miscellaneous Topics

I) **Removal of Chromium:** General, control methods, reduction precipitation, Ion Exchange, RO, Lime coagulation and adsorption

II) **Removal of Mercury:** General, measurement of mercury, mercury losses in Chlor-Alkali industries, removal of mercury from gaseous streams, removal of Mercury through liquid streams.

III) **Treatment of phenolic effluents:** Introduction, sources of phenols, Treatment and removal.

INTERNAL CONTINIUOS ASSESSMENT (ICA)

The ICA shall consist assignments on all above units and one industrial visit report.

w. e. f. Academic Year 2019-20

TEXT BOOKS:

1. Environmental engineering and management- Dhameja, Katson publications, Delhi
2. Air Pollution and control, K.V.S.G. Murli Krishna, Jain Brothers, Delhi
3. Water Management, K.V.S.G. Murli Krishna, Environmental Protection Soc., Kakinada

REFERENCE BOOKS:

1. Indian standards BIS
   - -IS/ISO 14001
   - IS/ISO 14004
   - IS/ISO 14011
   - IS/ISO 14010
   - IS/ISO 14012
2. Wastewater treatment and reuse- Metcalf and Eddy, TMG, Delhi
3. Pollution control in process industries- S. P. Mahajan, TMG, Delhi
4. Environmental science and engineering- Henry and Henke, PHI, New Delhi
5. For all environmental acts and updates - **http://www.envfor.nic.in**

w. e. f. Academic Year 2019-20

Academic Year 2018-19

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System structure of S. E. Civil Engineering, Semester-I, (W.E.F. 2017-2018)

Course Code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV211	Concrete Technology	3	-	-	-	3	30	70		-	100
CV212	Structural Mechanics-I	3	1	-	-	4	30	70		25	125
CV213	Surveying –I	3	-	-	-	3	30	70		-	100
CV214	Building Construction & Drawing	3	-	-	-	3	30	70		-	100
CV215	Fluid Mechanics-I	3	-	-	-	3	30	70		-	100
CV216	Engineering Geology	2	-	-	-	2	30	70		-	100
	Total	**17**	**1**	**_**	**-**	**18**	**180**	**420**		**25**	**625**
	Laboratory/Drawings							**POE**	**OE**		
CV211	Concrete Technology	-	-	2	-	1	-	-	-	25	25
CV213	Surveying –I	-	-	2	-	1	-	25	-	25	50
CV214	Building Construction & Drawing	-	-	-	2	1	-	-	-	25	25
CV215	Fluid Mechanics-I	-	-	2	-	1	-	25	-	25	50
CV216	Engineering. Geology	-	-	2	-	1	-	25	-	25	50
CV217	Lab. Practice	-	-	2	-	1	-	-	-	25	25
	Total	**-**	**-**	**10**	**2**	**7**	**-**	**75**		**150**	**225**
	Grand Total	**17**	**1**	**10**	**2**	**25**	**180**	**495**		**175**	**850**
ENV21	Environmental Studies	**1**	–	–	–	–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology
Credit System structure of T. E. Civil-I, Semester- V, (Revised from 2018-2019)

Course code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV-311	Design of Steel Structures	3	-	-	-	3	30	70		-	100
CV-312	Geotechnical Engg.-I	3	-	-	-	3	30	70		-	100
CV-313	Environmental Engg.-I	3	-	-	-	3	30	70		-	100
CV-314	Water Resources Engg. II	3	-	-	-	3	30	70		-	100
CV-315	Transportation Engg.-I	3	-	-	-	3	30	70		-	100
SLH-31	Self Learning (H.S.S. course)	-		-	-	2	-	50		-	50
	Total	**15**				**17**	**150**	**400**		**-**	**550**
	Laboratory/Drawings							**POE**	**OE**		
CV-311	Design of Steel Structures	-	-	2	-	1	-	-	-	25	25
CV-312	Geotechnical Engg.I	-	-	2	-	1	-	25	-	25	50
CV-316	Building Planning & Design using CADD	1	-	-	4	3	-	-	25	50	75
CV-313	Environmental Engg.I	-	-	2	-	1	-	-	-	25	25
CV-314	Water Resources Engg. II	-	-	2	-	1	-	-	25	25	50
CV-315	Transportation Engg.-I	-	-	2	-	1	-		-	25	25
	Total	**-**	**-**	**10**	**4**	**8**	**-**	**75**		**175**	**250**
	Grand Total	**16**		**10**	**4**	**25**	**150**	**475**		**175**	**800**

Abbreviations: L: Lectures, P: Practical, T: Tutorial, D: Drawing. ISE: In Semester Examination Tests, ESE: End Semester Examination - University Examination (Theory &/ POE &/Oral examination), ICA: Internal Continuous Assessment.

Note:

1) Students shall undergo a field training of total 30 days in two phases including at least 15 days in the winter vacation after T.E. Civil Part -I and at least 15 days in summer vacation after T.E. Civil Part-II. They shall submit the field training report of the first phase to the faculty associated with subject Engineering Management- I in their T.E. Part-II. They shall submit field training report of the second phase to concerned 'Project' guides in B.E. Part-I.

2) Internal Continuous Assessment (ICA) shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

3) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7, then a new batch be formed.

4) Curriculum for Humanities and Social Sciences (HSS) Self Learning Courses is common for all under graduate programmes of Faculty of Engineering and Technology.

5) For self Learning at T.E. Civil Part I –

A. Student shall select a 'Self Learning Course' from Solapur University, Solapur 'HSS Course List' and appear for its examination as and when conducted by Solapur University, Solapur.

Minimum four assignments for Self Learning Modules at T. E. Part I shall be submitted by the students which shall be evaluated by a 'Module Coordinator' assigned by institute / department.

OR

B. Student with prior approval of the institute shall select and enroll for 'National Programme on Technology Enhanced Learning (NPTEL)' course from HSS domain with minimum eight weeks duration, complete necessary assignments and appear for certificate examination as per the NPTEL schedule during respective semester.

For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur. More details about NPTEL are available at http://nptel.ac.in

SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Engineering & Technology
Credit System structure of T. E. Civil-II, Semester - VI, W. E.F. 2018-2019

Course code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV-321	Structural Mechanics-III	3	-	-	-	3	30	70		-	100
CV-322	Geotechnical Engg.II	4	-	-	-	4	30	70		-	100
CV-323	Environmental Engg.II	3	-	-	-	3	30	70		-	100
CV-324	Engineering Management- I	3	-	-	-	3	30	70		25	125
CV-325	Elective-I	3	-	-	-	3	30	70		-	100
CV-326	Self Learning (Technical course)	-	-	-	-	2	-	50		-	50
	Total	**16**	**0**	**-**	**-**	**18**	**150**	**400**		**25**	**575**
	Laboratory/Drawings:						-	**POE**	**OE**		
CV-321	Structural Mechanics-III	-	-	2	-	1	-	-	-	25	**25**
CV-322	Geotechnical Engg.II	-	-	2	-	1	-	-	-	25	**25**
CV-323	Environmental Engg.II	-	-	2	-	1	-	-	25	25	**50**
CV-325	Elective-I	-	-	2	-	1	-	-	-	25	**25**
CV-327	Project on Steel Structures	-	-	-	4	2	-	-	25	50	**75**
CV-328	Mini Project in SM-III/GE-II/EE-II/EM-I using Application Software	-	-	2		1				50	**50**
CV-329	Assessment of field training report	-	-	-	-	1				25	**25**
	Total	**-**	**-**	**10**	**4**	**8**			**50**	**225**	**275**
	Grand Total	**16**	**0**	**10**	**4**	**26**	**150**	**450**		**250**	**850**

Abbreviations: L: Lectures, P: Practical, T: Tutorial, D: Drawing, ISE: In Semester Examination Tests, ESE: End Semester Examination - University Examination (Theory &/ POE &/Oral examination), ICA: Internal Continuous Assessment.

Note:

1) Student/s shall carry out 'Mini Project' in any one of the following subjects: Structural Mechanics-III, Geotechnical Engg. II, Environmental Engg. II or Engineering Management-I by preferably employing relevant application software. The Mini project shall be assessed by the domain subject teachers for ICA.

2) Students shall undergo a field training of total 30 days in two phases including at least 15 days in the winter vacation after T.E. Civil Part I and at least 15 days in summer vacation after T.E. Civil Part-II. They shall submit the field training report of the first phase to the faculty associated with subject Engineering Management- I in their T.E. Part-II. They shall submit field training report of the second phase to concerned 'Project' guides in B.E. Part-I.

3) Internal Continuous Assessment (ICA) shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

4) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7, then a new batch be formed.

5) For Self Learning at T.E. Civil Part II -

A. Student shall select a 'Self Learning Technical Course' from Solapur University, Solapur Technical Course List (Civil Engineering) and appear for its examination, as and when conducted by Solapur University, Solapur. Minimum four assignments for Self Learning Modules at T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department.

OR

B. Student with prior approval of the institute shall select and enroll for any 'National Programme on Technology Enhanced Learning (NPTEL)' course from Civil Engineering domain/Interdisciplinary course, with minimum eight weeks duration, complete necessary assignments and appear for certificate examination as per the NPTEL schedule during respective semester.

More details about NPTEL are available at http://nptel.ac.in

LIST OF ELECTIVE SUBJECTS (CV-325)

T. E. Civil Part-II	
ELECTIVE I	
1	Advanced Design of Steel Structures
2	Industrial Waste Treatment
3	Water Power Engineering
4	Advanced Concrete Technology
5	Reliability Engineering
6	Finite Element Method
7	Experimental Stress Analysis
8	Optimization Techniques
9	Disaster Management

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

T.E. (ALL BRANCHES ENGINEERING) PART- I

Syllabus for

Self Learning- H.S.S. course, common for all the branches of Engineering and Technology
Choice Based Credit System

w. e. f. Academic Year 2018-19

T.E. (ALL BRANCHES ENGINEERING) PART- I

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

TEXT BOOKS

4) Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)

5) Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

6) Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

7) Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

8) The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

TEXT BOOKS

C. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.

D. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.

E. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

6) Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.

7) Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

C. Formal organization (bureaucracy)

D. Informal organization.

Unit 4.

Processes of social change - Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

TEXT BOOKS

1 Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).

1 Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.

1 General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (ALL BRANCHES ENGINEERING) PART- I

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985. *w. e. f.*

REFERENCE BOOKS

a) Weisman, "The Coping Capacity", Human Services Press, 1984.

b) Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

T.E. (ALL BRANCHES ENGINEERING) PART- I

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

(ESE) Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue -Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk -The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

TEXT BOOKS

(A) Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.

(B) Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.

(C) R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

A Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.

B Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART II
CV- 323 ENVIRONMENTAL ENGINEERING –II

Teaching Scheme:		Examination Scheme:	
Lectures:	3Hrs/Week, 3 Credits	**ICA:**	25 Marks
Practical :	2 Hrs/Week, 1 Credit	**ISE:**	30 Marks
		ESE (Lab):	25 Marks
		ESE(Theory):	70 Marks

Course Objectives

4. To acquaint the students with the characterization of municipal waste, as well as sewage collection & conveyance systems.
5. Study of Primary and Secondary treatment methods of sewage, and concept of recycling the wastewater.
6. Familiarize the students with stream pollution due to waste disposal and suitable centralized/decentralized wastewater Treatment system
7. Learning solid waste and hazardous waste management systems for urban areas.
8. Understanding various sources of air pollution, its measurement and control.

Course Outcomes

Upon successful completion of course the student will be able to:

4. Plan the layout of sewage collection system, matching the topography of the region and characterization of sewage.
5. Decide sequence and design of wastewater treatment units to meet the sewage treatment standards.
6. Design the wastewater treatment plant using Trickling filter, anaerobic treatment and low cost treatment methods
7. Adopt appropriate methods of Solid waste Disposal and Management of hazardous waste.
8. Measure air pollution and adopt control measures to control of industrial air pollution.

SECTION-I

Unit -1: Collection and conveyance of Sewage (08)

Components of wastewater flows, waste water sources and flow rate. Variation in flow rates, waste water constituents, Characteristics of municipal waste water, Quantity of storm water, Ground water infiltration.

Sewerage system, layout, types of sewers, collection system. Appurtenances Design of sanitary and storm water sewers, Maintenance of sewerage systems.

Sewage and sludge pumping, location, capacity and types of pumps, pumping station design.

Unit-2: Unit Operations (10)

Primary treatment- Screening, comminuting, grit removal, oil and grease trap, chemical precipitation.

Secondary treatment- Activated sludge process, Process design and operating parameters, modification of ASP, operational problems . SBR and MBR. Trickling filter, classification, process design considerations . Secondary Clarifications.

Unit -3: Anaerobic treatment and Low cost treatment (06)

Fundamentals of anaerobic treatment, sludge characteristics, Treatment and disposal, Concept of different anaerobic reactors.

Low cost waste water treatment methods- Principle of waste stabilization pond.

Design and operation of oxidation pond, aerobic and anaerobic lagoons, Aerated lagoon, Oxidation ditch, septic tank.

Selection of alternative treatment process flow sheets. Concept of recycling of wastewater (Gray water and brown water.)

SECTION-II

Unit-4: Disposal of waste water (08)

c) Disposal of waste water stream pollution, Self purification, DO sag curve, Streeter Phelp's Equation.

d) Emerging Technology for wastewater Treatment- Centralized Sewage Treatment System, objectives of small & decentralized wastewater Treatment system

i. Root zone Technology, ii. Constructed Wetlands, iii. Duckweed Ponds, iv. Fluidized aerobic bed Technology, v. UASB

Unit -5: Solid Waste Disposal (06)

Solid waste management - Solid waste definition, Types, sources, characteristics. Functional outlines- storage, collection, processing techniques, Treatments of solid waste-Composting, Incineration, Pyrolysis and sanitary land filling.

Unit -6: Air Pollution (07)

Air Pollution- Definition, Sources and classification of pollutants, Effects. Introduction to meteorological aspects of control of industrial air pollution- Settling Chamber, Bag filter, Cyclone separator, Scrubbers, Electrostatic precipitators. Control of vehicular air pollution. Air quality standards

CV- 323 ENVIRONMENTAL ENGINEERING –II (Laboratory)
INTERNAL CONTINUOUS ASSESSMENT (ICA)

The Internal Continuous Assessment (ICA) work includes practical work to find the characteristics of wastewater and demonstration of Air monitoring equipments and design of sewage treatment plant

Internal Continuous Assessment (ICA) work shall consist of the following:-

(D) List of Experiments (Any Eight)

Analysis of Waste Water

1. pH Value.

2. Total Solids

3. Biochemical Oxygen Demand

4. Chemical Oxygen Demand

5. Chlorides

6. Oil & Grease

7. Sulphate Content

8. Total Nitrogen

9. Demonstration of High Volume Sampler

10. Demonstration of Auto Exhaust Analyzer.

(B) Design of sewerage system & Treatment system for a small urban area.

(C) Visit to sewage treatment plant

Internal Continuous Assessment (ICA) submission shall consist of the following –

1. Journal containing experiments carried out in part A of the Internal Continuous Assessment (ICA) and visit Report on C

2. Detail design and appropriate drawings required for part B of the Internal Continuous Assessment (ICA) work.

END SEMESTER EXAMINATION (oral)

Oral examination will be based on the above syllabus.

TEXT BOOKS

1. Environmental Engineering by Peavey- H. S. Rowe, D.R. and Thobanoglous, [McGraw – Hill Book Company]
2. Water supply and pollution control - Viessman W. and Hammer M.J. [Harper Collins College Publishers.]
3. Waste Water Engineering Treatment & Disposal - Metcalf & Eddy, [Tata McGraw Hill, 1982]
4. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
5. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
6. Waste water Supply Engineering by B. C. Punmia

7. Solid Waste Management in Developing countries - Bhide A.D. and Sundersen B.B. [Indian National Scientific Documentation Centre, New Delhi]
8. Air Pollution- Rao M.N. and Rao H.V.N. [Tata McGraw Hill, 1990]

REFERENCE BOOKS

1. Manual on sewerage & sewage Treatment published by Ministry of Urban Development Govt. of India Msy-2000. 35 PDOP-4-59-85-97, Ministry of Urban development
2. Water and waste water Technology - Hammer M.J, [Prentice-Hall of India Private ltd.]
3. Masters. G.M. Introduction to Environmental Engineering and Science
4. Manual on Municipal Solid Waste Management- Ministry of Urban Development Govt. of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T. E. (CIVIL) PART – II

CV- 325 ELECTIVE – I

INDUSTRIAL WASTE TREATMENT

Teaching Scheme:		Examination Scheme:	
Lectures:	3Hrs/Week, 3 Credits	**ICA:**	25 Marks
Practical :	2 Hrs/Week, 1 Credit	**ISE:**	30 Marks
		ESE(Theory):	70 Marks

Course Objectives:

1. To understand sources of waste water in different industries.
2. To study waste water treatment options for different industries.
3. To acquire knowledge about disposal of effluents and the standards for disposal

Course Outcomes:

On successful completion of this course the students will be able to:

1. Characterize different industrial wastes
2. Suggest treatment alternative based on characteristics of industrial waste.
3. Demonstrate basic knowledge of legislation for pollution control

SECTION -I

Unit 1: **(5)**

Use of water in industry, Sources of wastewater, quality, and quantity variation in waste discharge, water budgeting, characterization and monitoring of wastewater flow, Grab samples and Composite samples. Population equivalent, Relative stability and Theoretical oxygen demand. Water quality criteria and effluent standards. Introduction to water quality index (WQI), methods used.

Unit 2: **(7)**

Waste volume and strength reduction, In-Plant measure, good housekeeping, Process change, leakage prevention, segregation, recycling, neutralization, equalization and proportioning of waste. In line equalization, Side line equalization. Methods for determining volume of equalization tank.

Unit 3: **(7)**

Water quality monitoring of streams, Self-purification of stream, Streeter Phelphs equation, Classification of streams. B.O.D. reaction rate - Method of least squares, Thomas method and Fujimoto method. D.O. Sag curve and D.O. deficit calculations.

Unit 4: **(4)**

Miscellaneous methods of dissolved solids removal- Ion-exchange, Electro dialysis, Reverse osmosis and Evaporation, Adsorption. Sludge disposal methods.

SECTION –II

Unit 5: **(4)**

Different types of waste treatment and their selections, Development of treatment flow diagram based on characteristics of waste. Pollution characteristics of common Industries.

Unit 6: **(9)**

Manufacturing processes in major industries, water requirements, wastewater sources, composition of wastes, Viz. Sugar, Distillery, Dairy, Pulps, Paper mill, Fertilizer, Tannery, Chemical, Steel Industry, power Plants, Textile Treatment flow sheets, alternative methods of treatment, factors affecting efficiency of treatment plant. Effect of above industrial wastes on receiving water bodies.

Unit 7: **(4)**

Introduction to the concept of zero discharge, Recycling and reuse and recovery Introduction to 3R principles to convert waste into wealth, Acclimatization of bacteria to toxic wastes, process sensitivity, operation and maintenance requirements.

Unit 8: **(5)**

Water pollution control act, organizational set up of central and state boards for water pollution control, classification of river on water use, minimal national standards, socioeconomic aspects of water pollution control.

Introduction to Wetland treatment – Root zone cleaning system. Introduction to green processes in the industries.

CV- 325 ELECTIVE – I

INDUSTRIAL WASTE TREATMENT (Laboratory)

INTERNAL CONTINUOUS ASSESSMENT (ICA)

1) Visit to any four of the following industries

i. Sugar industry

ii. Distillery industry

iii. Dairy industry

iv. Textile industry

v. Tannery

vi. Paper and Pulp

vii. Common effluent treatment plant (CETP)

Note: - Detailed visit report shall be prepared for each of the industrial visit

2) One assignment on each unit.

TEXT BOOKS:

1. Industrial Waste Treatment - Nelson Nemerow, Addison - Wesley
2. Industrial Waste Treatment – Rao & Datta, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Industrial Waste Water Treatment- Dr. A. D. Patwardhan, Prentice Hall of India

REFERENCE BOOKS:

1. Water and Waste Water Engg.- Fair G.M., Gayer J.C. and Okun D.A. , John Wiley Publication
2. Water and Waste Water Technology, M. J. Hammer and M. J. Hammer(Jr.)
3. Waste Water Engineering – Metcalf Eddy - Mc Graw Hill Publications.

T. E. (CIVIL) PART – II

CV- 325 ELECTIVE – I

DISASTER MANAGEMENT

Teaching Scheme:		Examination Scheme:	
Lectures:	3Hrs/Week, 3 Credits	**ICA:**	25 Marks
Practical :	2 Hrs/Week, 1 Credit	**ISE:**	30 Marks
		ESE(Theory):	70 Marks

Course Objectives:

1) Study of various disasters, their characteristics, causes and impacts.
2) Acquaint with the various disaster management stages to prevent or reduce losses that occur due to hazards during disaster and emergencies.
3) Provide information regarding various programmes of International, National and State and District Level Agencies for disaster management.

Course Outcomes:

By the end of the course students will be able to

1) Apply various disaster preparedness, mitigation and management techniques.
2) Apply the Geo-informatics techniques for prepare hazard zonation maps for Disaster management.
3) Apply the various schemes and programmes of International, National and State and District Level Agencies for disaster management.

SECTION-I

Unit 1: **(08)**

Environmental Hazards and Disasters

Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress & Environmental Disasters. Different approaches & relation with human Ecology- Landscape Approach- Ecosystem Approach- Perception approach- Human ecology & its application in geographical researches.

Unit 2: **(08)**

Types of Environmental hazards and Disasters:-

Natural disaster and Planetary Hazards

Earthquake Hazards/ disasters- Introduction, general characteristics, mechanism, causes and effects of Earthquakes, prediction, seismic zones, seismic waves, vulnerability, damage potential - magnitude and intensity, Earthquake Hazards in India- Human adjustment, perception and mitigation of earthquake.

Volcanic Hazards/Disasters:- Volcanoes Causes of volcanism, volcanic materials, hazardous effects and impacts of volcanic eruptions.

Landslide and Land Degradation:- Causes, tectonic conditions, erosion, avalanches, rock fall, damage assessment. Landslide prone area in India.

Cyclones and Tsunamis:- Structure and nature of cyclones (Tropical cyclones & Local storms) & tsunamis, characteristics, hazard donation, factors, hazard potential, impact assessment. Cyclone prone areas in India.

Floods:- General characteristics, causes, Flood hazards India, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management (Human perception & mitigation). **Droughts:-** Cause and Impacts of droughts- Drought hazards in India- Drought control measures.

Man-made Disaster and Extra Planetary Hazards/ Disasters

Man induced Hazards /Disasters-Physical hazards/ Disasters-Soil Erosion

Soil Erosion:- Mechanics & forms of Soil Erosion- Factors & causes of Soil Erosion, Conservation measures of Soil Erosion.

Mining:- Mining and environment, land & environment degradation and management, Mined land reclamation.

War and Chemicals disaster: - Release of toxic chemicals Hazardous wastes, reactivity, toxicity, nuclear war, biological weapons, armed conflicts, land mines etc.

Sedimentation processes: - Global Sedimentation problems, Regional Sedimentation problems. Sedimentation & Environmental problems- Corrective measures of Erosion & Sedimentation. **Biodiversity Extinction and Deforestation:-** Biodiversity, species at risks, loss of biodiversity, management of species diversity, deforestation its causes & adverse effects.

Biological hazards/ disasters:- Population Explosion.

Unit 3: **(06)**

Disaster Management:- Three Stages

Pre-disaster stage (Preparedness):- Introduction to disaster preparedness, Three A's of disaster preparedness, principles of disaster preparedness, steps in disaster preparedness, Preparing hazard zonation maps, Predictability/ Forecasting & warning, preparing disaster preparedness plan. Land use zoning- Preparedness through (IEC) Information, education and Communication. Disaster resistant house construction- Population reduction in vulnerable areas- Awareness.

Emergency stages: - Planning, mitigation, preparedness, response and recovery.

Post Disaster stage (Rehabilitation):- Physical and Social Infrastructure, Social and economic rehabilitation, Repair and retrofitting, Political Administrative Aspect.

SECTION-II

Unit 4: **(05)**

Natural Disaster Reduction and Management:- Provision of Immediate relief measures to disaster affected people-Prediction of Hazards & Disasters-Measures of adjustment to natural hazards.

Unit 5: **(09)**

Disaster Mitigation:-

Disaster Mitigation through Development: Disaster Mitigation: Basic Concepts, Meteorological and Seismological observation, Structured and Non Structured Mitigation, disaster mitigation strategies, importance of Information and Communication in Disaster Mitigation, Relationship between Disaster and Development, Sustainable Development for Disaster Mitigation, Importance of various Agencies/sectors involved for disaster mitigation.

Education on disasters -Community involvement, The adjustment of Human Population to Natural hazards & disasters. Role of database in Disaster Mitigation, GIS and GPS applications.

Role of Media

Monitoring Management- Programme of disaster research and mitigation of disaster of following organizations. International Council for Scientific Unions (ICSU)-Scientific committee on problems of the Environment (SCOPE), International Geosphere Biosphere programme (IGBP) -

World federation of Engineering Organizations (WFED). National Academy of Sciences-World Meteorological organizations (WMO). Various U.N agencies like UNCRD, IDNDR, WHO, UNESCO, UNICEF, UNEP.

Unit 6: **(09)**

Agencies in Disaster Management

International Agencies: United Nations and its specialized agencies like UNDP, FAO, WHO AEC (Atomic Energy Commission), United Nations Disaster Management Cell, New Delhi. International Federation of Red Cross and Red Crescent Societies (IFRC) and National Red Cross/Red Crescent Societies.

National Agencies: Disaster Management Cell (Ministry of Home Affairs, Govt. of India), National Institute of Disaster Management, Indian Red Cross Society, Planning Commission, National Civil Defense Organization, Bharat Scouts and Guides. Military and Para-Military Forces; Corporate Bodies etc.

State and District Level Agencies: Disaster Management cells at state level and District level, District Magistrate office, Role and Responsibilities of DM in prevention, preparedness, mitigation, relief and rehabilitation; local bodies and role of different functionaries-

CV- 325 ELECTIVE – I

DISASTER MANAGEMENT (Laboratory)

INTERNAL CONTINUOUS ASSESSMENT (ICA)

1. Practical exercise on each unit
2. Each student will be required to prepare a project work of Coastal Ecosystem, Desert Eco System and Mountain Eco System & submit it at the end of year & this will be evaluated by an internal as well as external examination

TEXT BOOKS

1. The Environment as Hazards, Kates, B.I& White, G.F, Oxford, New York, 1978
2. Disaster Management, R.B. Singh, Rawat Publication, New Delhi, 2000.
3. Disaster Management H.K. Gupta, Universities Press, India, 2003.
4. Space Technology for Disaster Mitigation in India (INCED), R.B. Singh, University of Tokyo, 1994.
5. Disaster Management in Hills, Dr. Satender, Concept Publishing Co., New Delhi, 2003.
6. Plan for Earthquake, Disaster, Mitigation, Disaster Management, A.S. Arya, V.K. Sharma, Action IIPA Publication New Delhi, 1994.
7. An overview on Natural and Man-made Disaster & their Reduction, R.K. Bhandani, SIR, New Delhi.
8. Disaster Mitigation, Preparedness, Recovery and Response, P. C. Sinha, SBS Publishers and Distributors Pvt. Ltd.
9. Introduction to International Disaster Management, D. P. Coppola, Butterworth-Heinemann.
10. Disaster Management M. Sharma, Vinod K., NCDM, IIPA, New Delhi, 1994
11. Housing in Disaster prone areas, National Building Organization and U.N. Regional Centre, Mathur G.C., ESCAP, New Delhi, 1986.
12. Disaster Management, Dr. Mrinalini Pandey, Wiley Publication.

REFERENCE BOOKS

1. Disaster Management in India – A Status Report, National Disaster Management Division, Ministry of Home Affairs, Govt. of India, 2004.
2. Disaster Management and Preparedness, Collins Larry R. and Scheind Thomas D. (2000)., Taylor and Francis, 2000.
3. Disaster Management, Sharma V.K., Indian Institute of Public Administration, New Delhi, 1995.
4. National Disaster Response Plan, NCDM, New Delhi, 2001.

5. Manuals on Natural Disaster management in India, M.C. Gupta, National Centre for Disaster Management, IIPA, New Delhi, 2001.
6. Management of Floods, National Disaster Management Authority, Government of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART- II

CV- 326 Planning for Sustainable Development

(Self Learning Technical Course)

		Examination Scheme:	
Credits:	2	**ESE(Theory):**	50 Marks

Unit 1:

Sustainable Development-explains and critically evaluates the concept of sustainable development, Environmental degradation and poverty Sustainable development: its main principles, the evolution of ideas about sustainability, strategies for promoting sustainable development, resistances to the concept, and some alternative approaches. Examine some important current issues and areas of debate in relation to sustainable development.

Unit 2:

Innovation for sustainable development- Environmental management and innovation strategies.

Unit 3:

Societal transformations. Institutional theory.

Unit 4:

Governance for sustainable development. Policy responses to environmental degradation.

Unit 5:

Capacity development for innovation. Research methods.

ASSIGNMENTS

The work for Internal Continuous Assessment (ICA) will consist of total five assignments, based on syllabus. (One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the work designated for Internal Continuous Assessment (ICA).

TEXT BOOKS

1. Harris, J.M. (2204) Basic Principles for Sustainable Development, Global Development and Environment Institute, working paper 00-04. Available at: http://ase.tufts.edu/gdae/publications/Working_Papers/Sustainable%20Development.PDF
2. Robinson, J. (2004) Squaring the circle? Some thoughts on the idea of sustainable development Ecological Economics 48(4): 369-384.
3. Hjorth, P. and A. Bagheri (2006) Navigating towards Sustainable Development: A System Dynamics Approach, Futures 38: 74-92.

REFERENCE BOOKS

1. Mog, J.M. (2004) „Struggling with Sustainability – A Comparative Framework for Evaluating Sustainable Development Programs", World Development 32(12): 2139–2160. IISD commentary on the OECD's Draft Principles for International Investor Participation in Infrastructure (PDF – 68 kb)
2. Arundel, A., R. Kemp, and S. Parto (2004) Indicators for Environmental Innovation: What and How to Measure, forthcoming in International Handbook on Environment and Technology Management (ETM), edited by D. Annandale, J. Phillimore and D. Marinova, Cheltenham, Edward Elgar.
3. Douthwaite, B. (2002) Enabling Innovation. A practical guide to understanding and fostering innovation, London

Solapur University, Solapur

Faculty of Engineering & Technology, B.E. (Civil Engineering) Semester –VII, (Revised from 2015-16)

Credit System Structure of B. E. (Civil Engineering) Semester –VII, W. E. F. 2017-18

No	Theory Course Name	Hrs/week				Credits	Examination Scheme				Total
		L	*T*	*P*	*D*		*ISE*	*ESE*		*ICA*	
1	Design of Concrete Structures-I	3	-	-	-	3	30	70		-	**100**
2	Quantity Surveying & Valuation	3	-	-	-	3	30	70		-	**100**
3	Earthquake Engineering	3	-	-	-	3	30	70		-	**100**
4	Water Resources Engineering-II	3	-	-	-	3	30	70		-	**100**
5	Elective - I	3	-	-	-	3	30	70		-	**100**
	Total	**15**				**15**	**150**	**350**			**500**
	Laboratory/Drawings							**POE**	**OE**		
1	Design of Concrete Structures-I	-	1	-	-	1	-	-	-	25	**25**
2	Quantity Surveying & Valuation	-	-	4	-	2	-	50	-	50	**100**
3	Earthquake Engineering	-	-	2	-	1	-	-	-	25	**25**
4	Water Resources Engineering- II	-	-	2	-	1	-	-	25	25	**50**
5	Elective - I	-	-	2	-	1	-	-	25	25	**50**
6	Seminar	-	-	2	-	2	-	-	-	50	**50**
7	Project work	-	-	2	-	2	-	-	-	25	**25**
8	Assessment of report on field training-II	-	-	-	-	1	-	-		25	**25**
	Total		**1**	**14**		**11**		**50**	**50**	**250**	**350**
	Grand Total Semester-VII	**15**	**1**	**14**	**-**	**26**	**150**	**450**		**250**	**850**

• **Abbreviations –** L: Lecture, T: Tutorial, P: Lab Session, D: Drawing, ESE: End Semester Examination, ISE: In Semester Evaluation, ICA: Internal Continuous Assessment

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

w. e. f. Academic Year 2017-18

Solapur University, Solapur

Faculty of Engineering & Technology, B. E. (Civil Engineering) Semester –VIII, (Revised from 2015-16)

Credit System Structure of B. E. (Civil Engineering) Semester –VIII, W. E. F. 2017-18

No	Theory Course Name	Hrs/week				Credits	Examination Scheme				Total
		L	*T*	*P*	*D*		*ISE*	*ESE*		*ICA*	
1	Design of Concrete Structures-II	4	-	-	-	4	30	70		-	**100**
2	Construction Practices and Town Planning	4	-	-	-	4	30	70		-	**100**
3	Elective - II	3	-	-	-	3	30	70		-	**100**
4	Elective - III	3	-	-	-	3	30	70		-	**100**
	Total	**14**				**14**	**120**	**280**			**400**
	Laboratory/Drawings							**POE**	**OE**		
1	Design of Concrete Structures-II	-	-	2	-	1	-	-	-	25	**25**
2	Construction Practices and Town Planning	-	-	-	-	1	-	-	-	25	**25**
3	Elective - II	-	-	2	-	1	-	-	25	25	**50**
4	Elective - III	-	-	2	-	1	-	-	-	50	**50**
5	R. C. C. Structural Design & Drawing-II	-	-	-	4	2	-	-	50	50	**100**
6	Project work	-	-	6	-	4	-	-	100	100	**200**
	Total			**12**	**4**	**10**			**175**	**275**	**450**
	Grand Total Semester-VIII	**14**		**12**	**4**	**24**	**120**	**455**		**275**	**850**

•**Abbreviations –** L: Lecture, T: Tutorial, P: Lab Session, D: Drawing, ESE: End Semester Examination ISE: In Semester Evaluation, ICA: Internal Continuous Assessment

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

w. e. f. Academic Year 2017-18

B. E. (CIVIL) - LIST OF ELECTIVES

B. E. Civil Part-I		B. E. Civil Part-II			
ELECTIVE I		**ELECTIVE II**		**ELECTIVE III**	
5.1	Open Channel & River Hydraulics	3.1	Advanced Engineering Geology	4.1	Advanced Design of Steel Structures
5.2	Air Pollution & control	3.2	Ground improvement Techniques	4.2	Industrial Waste Treatment
5.3	Design of Foundations	3.3	Traffic Engineering & Control	4.3	Water Power Engineering
5.4	Advanced Design of Concrete Structures	3.4	Infrastructural Engineering	4.4	Advanced Concrete Technology
5.5	Managerial Techniques	3.5	Project Appraisal	4.5	Reliability Engineering
5.6	Computer Applications in Civil Engineering	3.6	Solid and Hazardous & Waste Management	4.6	Finite Element Method
5.7	Advanced structures	3.7	Dynamics of Structures	4.7	Experimental Stress Analysis
5.8	Entrepreneurship	3.8	Environmental Management	4.8	Optimization Techniques
5.9	Remote Sensing and GIS Applications	3.9	Design of Bridges	4.9	Disaster Management

w. e. f. Academic Year 2017-18

B.E. (CIVIL) PART - I

5. ELECTIVE- I

5.2 AIR POLLUTION AND CONTROL

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1. To study Sources, Causes & effects of Air Pollution.
2. To study the relation between Meteorology and Air Pollution.
3. To learn methods used for controlling air pollution.
4. To study Air pollution Prevention and legislation.

Course Outcomes:

On successful completion of this course the students will be able to

1. Identify the sources of air pollutants and their effect on human, plants and materials.
2. Apply knowledge of meteorology for controlling air pollution
3. Design of air pollution controlling equipments.
4. Use knowledge of legislation for prevention and control of air pollution.

SECTION –I

Unit 1: Introduction **(3)**

The Structure of the atmosphere, Composition of dry ambient air and properties of air. BIS Definition and scope of Air Pollution, Scales of air pollution, Types of exposures.

Unit 2: Air pollution sources **(5)**

Air Pollutants, Classifications, Natural and Artificial, Primary and Secondary, point and Non-Point, Line and Area Sources of air pollution. Stationary and mobile sources. composition of particulate & gaseous pollutant, units of measurement.

Unit 3: Effects of Air pollutants (6)

Effect of different air pollutants on man, animals, vegetation, property, aesthetic value and visibility, air pollution episodes. Global effects of air pollution- global warming, ozonedepletion, acid rain and heat island effect.

Unit 4: Meteorology and Air pollution (8)

Solar radiation, wind circulation, factors affecting dispersion of pollutants, Lapse rate, stability conditions, wind velocity profile, Maximum mixing depth (MMD), visibility, Wind rose diagram, General characteristics of stack plume (Plume behaviour). Gaussion diffusion model for finding ground level concentration. Plume rise. Formulae for stack height and determination of minimum stack height.

SECTION –II

Unit 5: Air sampling and analysis (5)

Air pollution survey, basis and statistical considerations of sampling sites, devices and methods used for sampling gases and particulates. Stack emission monitoring, isokinetic sampling. Analysis of air samples chemical and instrumental methods. Ambient air quality monitoring.

Unit 6: Photochemical smog, Odour pollution and Indoor pollution (6)

Chemistry of air pollution, Chain reactions of hydrocarbons, nitrogen oxide, Sulphuric oxides and intermediates, photochemical smog formation, air pollution indices -aerosols, fog, smog index.

Odour pollution: Theory, sources, measurement and methods of control of odour pollution. Indoor air pollution: Causes of air pollution, sources and effects of indoor air pollutants, changes in indoor air quality, control of indoor air pollutants and air cleaning systems.

Unit 7: Control of air pollution (8)

By process modification, change of raw materials, fuels, process equipment and process operation. By use of air pollution control equipment for particulate and gaseous pollutants. Design of control equipment as Settling chamber, Cyclone, Fabric filter, Electro static precipitator and Wet scrubber.

Unit 8: Control of gaseous pollutants and Legislation (4)

Principles of removal of gaseous pollutants, design of incineration, absorption adsorption systems. Control of air pollution from automobiles. Vehicular pollution, composition, quantity and control.

Air (Prevention and Control) Pollution Act, 1981.Emission standards for stationary and mobile sources. National Ambient air quality standards, 2009 (NAAQS).

TERM WORK

1. Assignments / problems on Air pollution.
2. Sampling and analysis of Ambient Air
3. Sampling and analysis of Automobile exhaust
4. Demonstration of stack gas monitoring

Viva/Oral examination will be based on above theory syllabus and term work

TEXT BOOKS:

i. Air pollution – Wark and Warner
ii. Air Pollution – Rao and Rao, TMH
iii. Environmental Engineering – by Peavy and Rowe, TMH.
iv. Air Pollution and Control- Murali Krishna, Jain Brothers

REFERENCE BOOKS:

i. Air pollution – Martin Crawford
ii. Air Pollution and Control Technologies- Y. Anjaneyulu, Allied Publishers
iii. Fundamentals of Air Pollution- Raju BSN, IBH Publisher
iv. An Introduction to Air Pollution- R. K. Trivedi and Goyal, BS Publications.

॥ विद्यया संपन्नता ॥

B.E. Civil (Part-I)

5. ELECTIVE – I

5.8 ENTREPRENEURSHIP

Teaching Scheme	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1. To familiarize the students with the concept of Entrepreneurship, Entrepreneur and Women Entrepreneur opportunities in the country.
2. Acquaint the student's innovative business ideas in emerging industrial scenario with 'small scale industries' policy resolutions.
3. Introduce the student's with finance and accounting aspects, Industrial and commercial tax laws AND marketing management of entrepreneurship.

Course outcomes:

By the end of the course the students should be able to

1) Exhibit skills necessary to craft strategies and initiatives which can enable growth and sustainability in an entrepreneurial venture.
2) Prepare preliminary and final project report
3) Exhibit higher-level critical thinking skills, evidenced by analysis, evaluation, and synthesis.
4) Demonstrate skills to establish and manage the accounting process, to employ break even and cost-volume-profit tools.

SECTION – I

Unit 1: **(08)**

Meaning, Definition and concept of Enterprise, Entrepreneurship and Entrepreneurship Development, Evolution of Entrepreneurship, risks involved with entrepreneurship, barriers to Entrepreneurship, Factors affecting entrepreneurial growth.

Entrepreneur, qualities of a successful entrepreneur, types of entrepreneurs (on basis of business, motivation, stages of development, entrepreneurial activity), functions of an entrepreneur, entrepreneurial competencies, types of entrepreneurial competencies. Concepts of Intrapreneurship, Entrepreneur v/s Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Role of Entrepreneurship in Economic Development, Factors affecting Entrepreneurship, Problems of Entrepreneurship. Creativity and Innovation, Innovation and Entrepreneurship.

Unit 2: **(06)**

Women Entrepreneurship:- Meaning, Characteristic features, Problems of Women Entrepreneurship in India, Developing Women Entrepreneurship in India, reasons for the slow growth of women entrepreneurship, remedies to solve the problems of women entrepreneurs. Measures taken for the development of women.

Entrepreneurship In India:- Training of Rural Youth For Self Employment, BANKS, NABARD, Industrial Policy, FICCI Ladies Organization (FLO), National Alliance of Young Entrepreneurs (NAYE).

Unit 3: **(08)**

Role of Government in promoting Entrepreneurship, MSME policy in India, Agencies for Policy Formulation and Implementation: District Industries Centres (DIC), Small Industries Service Institute (SISI),Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Financial Support System: Forms of Financial support, Long term and Short term financial support, Sources of Financial support, Development Financial Institutions, Investment Institutions. Finance, Institutional finance to Entrepreneurs, Preparation of Business Plans, Commercial Banks, Other financial institutions like IDBI,IFCI, ICICI, IRBI, LIC, UTI, SFCs, SIDCs, SIDBI, EXIM.

Bank Institution Support to Entrepreneurs: Need for Institutional support - Small Entrepreneurs: NSIC, SIDO, SSIB, SSICS, SISI, DICs, Industrial Estates Specialized Institutions.

SECTION – II

Unit 4: **(08)**

Finance Analysis and accountancy: Estimation of cost of project and means of financing, working capital requirement and its financing, estimates of working results working capital and fixed capital assessment incentives from financial institutions and government, financial ratios, their significance, break even analysis cash flow charts financial statements.

Unit 5: **(07)**

Project Report: Preliminary and final project report preparation, financial technical commercial and economic viability project implementation process project profiles.

Unit 6: **(08)**

Introduction to Marking, Market study, Goal sitting, Sale and Sales Promotion. Industrial and commercial tax laws (major features only), Risk and Risk analysis, goal setting and decision making, Communication skills development and barriers.

Note: The subject may be taught with respect to suitable case studies and industrial visits. Audio video films shall be used on the above topics.

TERM WORK

1. Preparation of preliminary and final project report of anyone small scale industry from civil Engineering field.
2. Report based on two industrial visits.

TEXT BOOKS:

1) Patterns of Entrepreneurship, Jack M. Kaplan Wiley Publications.
2) Planning and Industrial Unit, Jay Narayan Vyas, GranthVitran Shreyas, Opp. Jain Temple Near Navrangpura Bus Stop, Navrangpura
3) Financing an Industrial Unit, Jay Narayan Vyas and Dilip Patel,Granthvitaran Ahmedabad .
4) Entrepreneurship Development Vol. I, II & III, Vasant Desai, Himalaya Publishing house.

w. e. f. Academic Year 2017-18

REFERENCE BOOKS:

1) Entrepreneurship for the Nineties, Gordon B. Baty, Prentice Hall Inc. College Technical Reference by Granthvitaran.
2) Small Scale Industry Handbook, Jay Narayan Vyas, Granth Vitaran Ahmedabad
3) The Practice of Entrepreneurship, Geoffery G. Meredith R.E. Nelson and P. A. Neck, Published by International Labour Office, CH 1211, Geneva 22, Switzerland
4) Entrepreneurship Theory at Cross Road, Mathew J. Manimala, Biztantra publications.
5) Entrepreneurship and small business, WEBER, LEWIS, VOLERY, SCHAPER, Wiley publications.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –II

3. ELECTIVE II

3.6 SOLID AND HAZARDOUS WASTE MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1) To study the types, sources, generation of solid &hazardous waste.
2) To impart basic knowledge of collection, transportation, treatment and disposal of solid waste
3) To study handling and storage of solid and hazardous waste.

Course Outcomes:

Upon successful completion of course, the students will be able to:

1) Suggest waste reduction and resource recovery methods
2) Explain various waste disposal methods
3) Examine legal, political and administrative considerations in design and operation of solid and hazardous waste management

SECTION I

Solid Waste Management

Unit 1: **(06)**

Solid Waste management: Functional outlines of refuse, storage, transportation of refuse, analysis, composition and quantity of refuse, Economic aspects of refuse collection and transport.

Solid waste in industries, common types of solid waste, classification, collection and transportation. Concept of biomedical & Hazardous waste management.

Unit 2: **(05)**

Solid waste handling and Processing methods, Segregation and salvage recovery of bye-products, use of solid waste as raw material in industries. Recycling of solid waste.

Unit 3: **(06)**

Composting: Theory of composting, types of composting, factors governing composting, processing before composting, mechanical composting plant, and recovery of Bio –gas energy from organic solid waste.

Unit 4: **(06)**

Incineration: Theory and types of incinerators, location, planning aspects, effects of feed, composition, rate and temperature, air supply, design of incineration plant, pyrolysis and its by-products, energy recovery.

Solid waste management rules, status of solid waste management in India.

SECTION –II

Hazardous Waste Management

Unit 5: **(06)**

Definition of Hazardous waste, Characteristics and nature of hazards, natural and man- made hazards, classification of hazards.

Unit 6 : **(04)**

Qualitative estimation of damages, risk assessment and management.

Unit 7: **(06)**

Types of hazardous waste, characteristics, Site assessment waste minimization resource recovery. Strategy for minimization of damage due to natural and manmade hazards.

Unit 8: **(06)**

Storage and handling of hazardous waste, Site Selection, Transportation of hazardous wastes. Case Studies of hazards, episodes. Sanitary landfill site selection, types of land filling, maintenance and precaution, leachate and its control, control of contamination of ground water.

TERM WORK

1. Analysis of solid waste
2. Project on Design of Refuse collection & Disposal System for medium size town or a part of city.
3. Case study of Hazards and Episodes (Any Two).
4. Assignments (One Assignment on each unit)

TEXT BOOKS:

i) Solid Waste Management – Dr. A.D. Bhide

ii) Hazardous Waste Management – C. A. Wentz McGraw Hill International Edition

iii) Management of Municipal Solid Waste- T. V. Ramchandra, Capital Publishing company, New Delhi

iv) Solid and Hazardous Waste Management- M. N. Rao and Razia Sultana BS Publication

REFERENCE BOOKS:

i) Solid Waste Management – George Tchobanoglous, Mc Graw Publication

ii) Manual on Municipal Solid Waste management by ministry of Urban Development of Govt. of India.

iii) Solid Waste Management- I. H. Khan, and Naved Ahsan, CBS Publishers and Distributors, New Delhi.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

3. ELECTIVE II

3.8 ENVIRONMENTAL MANAGEMENT

Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1) To study principles of Environmental Management System.
2) To acquaint students with different Environmental pollution control acts.
3) To study the electronic, biomedical and industrial waste properties and waste management systems
4) To inculcate idea of Environmental Impact Assessment.

Course outcomes:

Upon successful completion of course the students will be able to:

1) Demonstrate basic principles of Environmental Management System.
2) Explain different Environmental pollution control acts.
3) Select appropriate technology for management of electronic, biomedical and industrial waste
4) Perform Environmental Impact Assessment small project

SECTION-I

Unit 1: **(6)**

Fundamentals of environmental management system (EMS) and ISO 14000 series: History Background and development of ISO 14000, TC-207, ISO 14000series. Environmental management Plans- Principles and elements. The ISO 14001-Environmental management systems standard, Definitions, Eco labeling, Auditing

Unit 2: **(6)**

Environmental management acts related to environmental protection: Air, Water, Soil and Hazardous Waste. Detailed study of following acts - Water act 1974(Prevention and control of pollution), Air act 1981 (Air pollution prevention and control of pollution), Hazardous waste management handling rules -1989. Municipal solid waste rules- 2000, Noise pollution regulation and control rules 2000 **(7)**

Unit 3 : **(5)**

Electronic waste management: Objectives, Classification of E-waste, guidelines for environmentally sound management of E-waste, environmentally sound treatment technology for E-waste, guidelines for environmentally sound integrated E-waste recycling and treatment policy International scenario, hazardous substances that can occur in E-waste.

Unit 4: **(5)**

Biomedical waste management: Introduction, Classification, Types, segregation, packaging and transportation and storage, possible hazards, Effects, Detailed study of Biomedical waste management and handling rules 1998.

SECTION –II

Unit 5: **(4)**

Air pollution control:, Air quality standards, Air pollution control technologies for oxides of sulphur: Reducing SOx levels through dilution by increasing stack height, use of alternative fuels. Extraction of sulphur from fuels. Reduction of sulphur in combustion process, fuel gas desulfurization.

Air pollution control technologies for oxides of Nitrogen: Emission of nitrogen oxides. Control technologies for oxides of nitrogen emissions. Air pollution control technologies for volatile organics, Hydrocarbons and hydrogen sulphide.

Unit 6: **(5)**

Advanced waste water treatment: Carbon adsorption, Ion exchange, sodium and hydrogen cycle. Membrane process. Electro dialysis process, pressure membrane process and membrane performance characterization. Nutrients removal such as nitrogen and phosphorus removal.

Land treatment systems: Irrigation, rapid infiltration and overland flow systems. Wetland flow Systems.

Unit 7: **(7)**

Environmental Impact Management (EIA)

I) Definition, Objectives of EIA .EIA procedure in detail, Role of different actors in EIA, components of EIA, Areas of human concern (Impact categories), Contents of EIA, Categories of projects under EIA, Introduction to Impact assessment methods such as Leopold matrix Legal provision for public participation in India,

Role of general public in Environmental clearance. Limitations of EIA

II) The environmental rules 1999, sitting for industrial process, methodology for preparing environmental impact assessment, role of regulatory agencies and control boards in obtaining Environmental clearance for project.

III) **Case studies:-**Positive and negative environmental impacts of Dams, Express highways, Major industries, Power plants

Unit 8: **(7)**

Miscellaneous Topics

I) **Removal of Chromium:** General, control methods, reduction precipitation, Ion Exchange, RO, Lime coagulation and adsorption

II) **Removal of Mercury:** General, measurement of mercury, mercury losses in Chlor-Alkali industries, removal of mercury from gaseous streams, removal of Mercury through liquid streams.

III) **Treatment of phenolic effluents:** Introduction, sources of phenols, Treatment and removal.

TERM WORK

Term work shall consist of assignments on all above units and following chapters and one industrial visit report.

Oral examination shall be based on above term work.

w. e. f. Academic Year 2017-18

TEXT BOOKS:

1. Environmental engineering and management- Dhameja, Katson publications, Delhi
2. Air Pollution and control, K.V.S.G. Murli Krishna, Jain Brothers, Delhi
3. Water Management, K.V.S.G. Murli Krishna, Environmental Protection Soc., Kakinada

REFERENCE BOOKS:

1. Indian standards BIS
   - -IS/ISO 14001
   - - IS/ISO 14004
   - - IS/ISO 14011
   - - IS/ISO 14010
   - - IS/ISO 14012
2. Wastewater treatment and reuse- Metcalf and Eddy, TMG, Delhi
3. Pollution control in process industries- S. P. Mahajan, TMG, Delhi
4. Environmental science and engineering- Henry and Henke, PHI, New Delhi
5. For all environmental acts and updates - **http://www.envfor.nic.in**

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

4. ELECTIVE III

4.2 INDUSTRIAL WASTE TREATMENT

Teaching Scheme:	Examination Scheme:
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 50 Marks

Course Objectives:

1. To understand sources of waste water in different industries.
2. To study waste water treatment options for different industries.
3. To acquire knowledge about disposal of effluents and the standards for disposal

Course Outcomes:

On successful completion of this course the students will be able to:

1. Characterize different industrial wastes
2. Suggest treatment alternative based on characteristics of industrial waste.
3. Demonstrate basic knowledge of legislation for pollution control

SECTION -I

Unit 1: **(5)**

Use of water in industry, Sources of wastewater, quality, and quantity variation in waste discharge, water budgeting, characterization and monitoring of wastewater flow, Grab samples and Composite samples. Population equivalent, Relative stability and Theoretical oxygen demand. Water quality criteria and effluent standards. Introduction to water quality index (WQI), methods used.

Unit 2: **(7)**

Waste volume and strength reduction, In-Plant measure, good housekeeping, Process change, leakage prevention, segregation, recycling, neutralization, equalization and proportioning of waste. In line equalization, Side line equalization. Methods for determining volume of equalization tank.

Unit 3: **(7)** Water quality monitoring of streams, Self-purification of stream, Streeter Phelphs equation, Classification of streams. B.O.D. reaction rate - Method of least squares, Thomas method and Fuji mato method. D.O. Sag curve and D.O. deficit calculations.

Unit 4: **(4)**

Miscellaneous methods of dissolved solids removal- Ion-exchange, Electro dialysis, Reverse osmosis and Evaporation, Adsorption. Sludge disposal methods.

SECTION –II

Unit 5: **(4)**

Different types of waste treatment and their selections, Development of treatment flow diagram based on characteristics of waste. Pollution characteristics of common Industries.

Unit 6: **(9)**

Manufacturing processes in major industries, water requirements, wastewater sources, composition of wastes, Viz. Sugar, Distillery, Dairy, Pulps, Paper mill, Fertilizer, Tannery, Chemical, Steel Industry, power Plants, Textile Treatment flow sheets, alternative methods of treatment, factors affecting efficiency of treatment plant. Effect of above industrial wastes on receiving water bodies.

Unit 7: **(4)**

Introduction to the concept of zero discharge, Recycling and reuse and recovery Introduction to 3R principles to convert waste into wealth, Acclimatization of bacteria to toxic wastes, process sensitivity, operation and maintenance requirements.

Unit 8: **(5)**

Water pollution control act, organizational set up of central and state boards for water pollution control, classification of river on water use, minimal national standards, socioeconomic aspects of water pollution control.

Introduction to Wetland treatment – Root zone cleaning system. Introduction to green processes in the industries.

TERM WORK

1) Visit to any four of the following industries

i. Sugar industry

ii. Distillery industry

iii. Dairy industry

iv. Textile industry

v. Tannery

vi. Paper and Pulp

vii. Common effluent treatment plant (CETP)

Note: - Detailed visit report shall be prepared for each of the industrial visit

2) One assignment on each unit.

TEXT BOOKS:

1. Industrial Waste Treatment - Nelson Nemerow, Addison - Wesley
2. Industrial Waste Treatment – Rao & Datta, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Industrial Waste Water Treatment- Dr. A. D. Patwardhan, Prentice Hall of India

REFERENCE BOOKS:

1. Water and Waste Water Engg.- Fair G.M., Gayer J.C. and Okun D.A. , John Wiley Publication
2. Water and Waste Water Technology, M. J. Hammer and M. J. Hammer(Jr.)
3. Waste Water Engineering – Metcalf Eddy - Mc Graw Hill Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

w. e. f. Academic Year 2017-18

B.E. Civil – Part II

4. ELECTIVE – III

4.9 DISASTER MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 50 Marks

Course Objectives:

1) Study of various disasters, their characteristics, causes and impacts.
2) Acquaint with the various disaster management stages to prevent or reduce losses that occur due to hazards during disaster and emergencies.
3) Provide information regarding various programmes of International, National and State and District Level Agencies for disaster management.

Course Outcomes:

By the end of the course students should be able to

1) Apply various disaster preparedness, mitigation and management techniques.
2) Apply the Geo-informatics techniques for prepare hazard zonation maps for Disaster management.
3) Apply the various schemes and programmes of International, National and State and District Level Agencies for disaster management.

SECTION-I

Unit 1: **(08)**

Environmental Hazards and Disasters:-

Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress & Environmental Disasters. Different approaches & relation with human Ecology- Landscape Approach- Ecosystem Approach- Perception approach- Human ecology & its application in geographical researches.

Unit 2: **(08)**

Types of Environmental hazards and Disasters:-

Natural disaster and Planetary Hazards

Earthquake Hazards/ disasters- Introduction, general characteristics, mechanism, causes and effects of Earthquakes, prediction, seismic zones, seismic waves, vulnerability, damage potential – magnitude and intensity, Earthquake Hazards in India- Human adjustment, perception and mitigation of earthquake.

Volcanic Hazards/Disasters:- Volcanoes Causes of volcanism, volcanic materials, hazardous effects and impacts of volcanic eruptions.

Landslide and Land Degradation:- Causes, tectonic conditions, erosion, avalanches, rock fall, damage assessment. Landslide prone area in India.

Cyclones and Tsunamis:- Structure and nature of cyclones (Tropical cyclones & Local storms) & tsunamis, characteristics, hazard donation, factors, hazard potential, impact assessment. Cyclone prone areas in India.

Floods:- General characteristics, causes, Flood hazards India, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management (Human perception & mitigation).

Droughts:- Cause and Impacts of droughts- Drought hazards in India- Drought control measures.

Man-made Disaster and Extra Planetary Hazards/ Disasters

Man induced Hazards /Disasters-Physical hazards/ Disasters-Soil Erosion

Soil Erosion:- Mechanics & forms of Soil Erosion- Factors & causes of Soil Erosion, Conservation measures of Soil Erosion.

Mining:- Mining and environment, land & environment degradation and management, Mined land reclamation.

War and Chemicals disaster: - Release of toxic chemicals Hazardous wastes, reactivity, toxicity, nuclear war, biological weapons, armed conflicts, land mines etc.

Sedimentation processes: - Global Sedimentation problems, Regional Sedimentation problems. Sedimentation & Environmental problems- Corrective measures of Erosion & Sedimentation.

Biodiversity Extinction and Deforestation:- Biodiversity, species at risks, loss of biodiversity, management of species diversity, deforestation its causes & adverse effects.

Biological hazards/ disasters:- Population Explosion.

w. e. f. Academic Year 2017-18

Unit 3: **(06)**

Disaster Management:- Three Stages

Pre-disaster stage (Preparedness):- Introduction to disaster preparedness, Three A's of disaster preparedness, principles of disaster preparedness, steps in disaster preparedness, Preparing hazard zonation maps, Predictability/ Forecasting & warning, preparing disaster preparedness plan. Land use zoning- Preparedness through (IEC) Information, education and Communication. Disaster resistant house construction- Population reduction in vulnerable areas- Awareness.

Emergency stages: - Planning, mitigation, preparedness, response and recovery.

Post Disaster stage (Rehabilitation):- Physical and Social Infrastructure, Social and economic rehabilitation, Repair and retrofitting, Political Administrative Aspect.

SECTION-II

Unit 4: **(05)**

Natural Disaster Reduction and Management:- Provision of Immediate relief measures to disaster affected people-Prediction of Hazards & Disasters-Measures of adjustment to natural hazards.

Unit 5: **(09)**

Disaster Mitigation:-

Disaster Mitigation through Development: Disaster Mitigation: Basic Concepts, Meteorological and Seismological observation, Structured and Non Structured Mitigation, disaster mitigation strategies, importance of Information and Communication in Disaster Mitigation, Relationship between Disaster and Development, Sustainable Development for Disaster Mitigation, Importance of various Agencies/sectors involved for disaster mitigation.

Education on disasters -Community involvement, The adjustment of Human Population to Natural hazards & disasters. Role of database in Disaster Mitigation, GIS and GPS applications.

Role of Media

Monitoring Management- programme of disaster research and mitigation of disaster of following organizations. International Council for Scientific Unions (ICSU)-Scientific

committee on problems of the Environment (SCOPE), International Geosphere Biosphere programme (IGBP) – World federation of Engineering Organizations (WFED). National Academy of Sciences-World Meteorological organizations (WMO). Various U.N agencies like UNCRD, IDNDR, WHO, UNESCO, UNICEF, UNEP.

Unit 6: **(09)**

Agencies in Disaster Management

International Agencies: United Nations and its specialized agencies like UNDP, FAO, WHO AEC (Atomic Energy Commission), United Nations Disaster Management Cell, New Delhi. International Federation of Red Cross and Red Crescent Societies (IFRC) and National Red Cross/Red Crescent Societies.

National Agencies: Disaster Management Cell (Ministry of Home Affairs, Govt. of India), National Institute of Disaster Management, Indian Red Cross Society, Planning Commission, National Civil Defense Organization, Bharat Scouts and Guides. Military and Para-Military Forces; Corporate Bodies etc.

State and District Level Agencies: Disaster Management cells at state level and District level, District Magistrate office, Role and Responsibilities of DM in prevention, preparedness, mitigation, relief and rehabilitation; local bodies and role of different functionaries-

TERM WORK

1. Practical exercise on each unit
2. Each student will be required to prepare a project work of Coastal Ecosystem, Desert Eco System and Mountain Eco System & submit it at the end of year & this will be evaluated by an internal as well as external examination

TEXT BOOKS:-

1. The Environment as Hazards, Kates, B.I& White, G.F, Oxford, New York, 1978
2. Disaster Management, R.B. Singh, Rawat Publication, New Delhi, 2000.
3. Disaster Management H.K. Gupta, Universities Press, India, 2003.
4. Space Technology for Disaster Mitigation in India (INCED), R.B. Singh, University of Tokyo, 1994.
5. Disaster Management in Hills, Dr. Satender, Concept Publishing Co., New Delhi, 2003.
6. Plan for Earthquake, Disaster, Mitigation, Disaster Management, A.S. Arya, V.K.

Sharma, Action IIPA Publication New Delhi, 1994.
7. An overview on Natural and Man-made Disaster & their Reduction, R.K. Bhandani, SIR, New Delhi.
8. Disaster Mitigation, Preparedness, Recovery and Response, P. C. Sinha, SBS Publishers and Distributors Pvt. Ltd.
9. Introduction to International Disaster Management, D. P. Coppola, Butterworth-Heinemann.
10. Disaster Management M. Sharma, Vinod K., NCDM, IIPA, New Delhi, 1994
11. Housing in Disaster prone areas, National Building Organization and U.N. Regional Centre, Mathur G.C., ESCAP, New Delhi, 1986.
12. Disaster Management, Dr. Mrinalini Pandey, Wiley Publication.

REFERENCE BOOKS:-

1. Disaster Management in India – A Status Repot, National Disaster Management Division, Ministry of Home Affairs, Govt. of India, 2004.
2. Disaster Management and Preparedness, Collins Larry R. and Scheind Thomas D. (2000)., Taylor and Francis, 2000.
3. Disaster Management, Sharma V.K., Indian Institute of Public Administration, New Delhi, 1995.
4. National Disaster Response Plan, NCDM, New Delhi, 2001.
5. Manuals on Natural Disaster management in India, M.C. Gupta, National Centre for Disaster Management, IIPA, New Delhi, 2001.
6. Management of Floods, National Disaster Management Authority, Government of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Academic Year 2017-18

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology

Credit System structure of S. E. Civil Engineering, Semester-I, (W.E.F. 2017-2018)

Course Code	Theory Course Name	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
CV211	Concrete Technology	3	-	-	-	3	30	70		-	100
CV212	Structural Mechanics-I	3	1	-	-	4	30	70		25	125
CV213	Surveying –I	3	-	-	-	3	30	70		-	100
CV214	Building Construction & Drawing	3	-	-	-	3	30	70		-	100
CV215	Fluid Mechanics-I	3	-	-	-	3	30	70		-	100
CV216	Engineering Geology	2	-	-	-	2	30	70		-	100
	Total	**17**	**1**	**_**	**-**	**18**	**180**	**420**		**25**	**625**
	Laboratory/Drawings							**POE**	**OE**		
CV211	Concrete Technology	-	-	2	-	1	-	-	-	25	25
CV213	Surveying –I	-	-	2	-	1	-	25	-	25	50
CV214	Building Construction & Drawing	-	-	-	2	1	-	-	-	25	25
CV215	Fluid Mechanics-I	-	-	2	-	1	-	25	-	25	50
CV216	Engineering. Geology	-	-	2	-	1	-	25	-	25	50
CV217	Lab. Practice	-	-	2	-	1	-	-	-	25	25
	Total	**-**	**-**	**10**	**2**	**7**	**-**	**75**		**150**	**225**
	Grand Total	**17**	**1**	**10**	**2**	**25**	**180**	**495**		**175**	**850**
ENV21	Environmental Studies	**1**	–	–	–	–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Environmental Studies

For All UG Second year Semester IV

With effect from June - 2017

Structure for Environmental Studies

	Name and type of the paper		L/P	Credits	Total Marks	UA		CA	
	Type	Name							
Class	**For All UG Semester IV (Second year)**								
	Ability Enhancement Course (AECC)	**Environmental Studies**	**50**	**4**	**100**	**70**	**28**	**30**	**12**

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Environment Studies (AECC)

[Credits: Theory-(4)]

Total Theory Lectures-(45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 5 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science,* 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. *Tripathi 1992*.
14. Sengupta, R. 2003. *Ecology and economics*: An approach to sustainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	**Environment Studies**	**Environment Studies**

Nature of Question Paper :-

Time : - 2 ½ hrs. Total Marks: - 70

Q. 1 Multiple choice questions (One Marks each) 14

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)

Q. 2 Answer the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q. 3 Attempt the followings. (Short Note/Short Problem/Short Answer) 14

a) 07

b) 07

Q.4 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

Q.5 Attempt **<u>any one</u>** of the followings. (Long Answer/Problem) 14

a)

OR

b)

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2014-2015)

Credit System structure of T. E. Civil-I, W. E. F. 2016-2017; Semester- V

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Design of Steel Structures	3	-	-	-	3	30	70		-	100
Geotechnical Engg.I	3	-	-	-	3	30	70		-	100
Building Planning & Design	3	-	-	-	3	30	70		-	100
Environmental Engg.I	3	-	-	-	3	30	70		-	100
Engineering Management- I	3	-	-	-	3	30	70		25	125
Transportation Engg.-I	3	-	-	-	3	30	70		-	100
Self Learning (H.S.S. course)	-		-	-	2	-	50		-	50
Total	**18**				**20**	**180**	**470**		**25**	**675**
Laboratory/Drawings							**POE**	**OE**		
Design of Steel Structures	-	-	2	-	1	-	-	-	25	25
Geotechnical Engg.I	-	-	2	-	1	-	25	-	25	50
Building Planning & Design	-	-	-	4	2	-	-	25	25	50
Environmental Engg.I	-	-	2	-	1	-	-	-	25	25
Transportation Engg.-I	-	-	2	-	1	-		-	25	25
Total	**-**	**-**	**8**	**4**	**6**	**-**	**50**		**125**	**175**
Grand Total	**18**		**8**	**4**	**26**	**180**	**520**		**150**	**850**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing. *- Alternate week, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of T. E. Civil-II, W. E.F. 2016-2017; Semester - VI

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Structural Mechanics-III	4	-	-	-	4	30	70		-	100
Geotechnical Engg.II	4	-	-	-	4	30	70		-	100
Environmental Engg.II	3	-	-	-	3	30	70		-	100
Engineering Management- II	4	-	-	-	4	30	70		-	100
Transportation Engg.-II	3	-	-	-	3	30	70		25	125
Self Learning (Technical course)	-	-	-	-	2	-	50		-	50
Total	18	-	-	-	20	150	400		25	575
Laboratory/Drawings:						-	POE	OE		
Structural Mechanics-III	-	-	2	-	1	-	-	-	25	25
Geotechnical Engg.II	-	-	2	-	1	-	-	-	25	25
Environmental Engg.II	-	-	2	-	1	-	-	25	25	50
Engineering Management- II	-	-	2	-	1	-	-	25	25	50
Steel Structural Design & Drawing	-	-		4	2	-	-	25	50	75
Mini project (Any subject in Civil Engg.)	-	-	-	-	1	-	-	-	25	25
Assessment of field training report	-	-	-	-	-				25	25
Total	-	-	8	4	7			75	200	275
Grand Total	20	-	8	2	27	150	475		225	850

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

(1) Students shall undergo a field training of 15 days in the winter vacation after T.E. Part I and submit the field training report, which shall be assessed by faculty associated with Engineering Management- II in T.E. Part II.

(2) Students shall undergo a field training of 15 days in the summer vacation after T.E. Part II. The training report shall be assessed in B.E. Part -I by the concerned project guides.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

(4) Syllabus of Self learning (H.S.S.) is common for all Under Graduate Programs under Faculty of Engineering and Technology.

(5) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7 students, then a new batch be formed.

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1. Economics
2. Intellectual Property Rights for Technology Development and Management
3. Introduction to Sociology
4. Stress and Coping
5. Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

a) Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

b) Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

c) The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

a) Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.

b) Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.

c) P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

a) Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.

b) Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

(A) Formal organization (bureaucracy)

(B) Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

A Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).

B Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.

C General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

(A) Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.

(B) Society in India, David Mandelbaum, , 1990, Popular Publications.

(C) Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.

2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.

3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.

2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.

2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.

3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.

2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994. *w. e. f.*

T.E. (CIVIL ENGINEERING) PART- I

BUILDING PLANNING & DESIGN

Teaching Scheme:

Lectures: 3 hours per week
Drawing: 4 hours per week

Examination Scheme

Theory paper: 100 marks
Term work: 25 marks
Oral Exam: 25 Marks

Course Objectives

6. To acquaint the students with of various types of public buildings and their functional requirements.
7. Study of principles of planning and design of public buildings with special reference to aesthetics, acoustics and fire fighting.
8. To emphasize the various aspects of the 'Green Building' design considerations and their adoption in public building planning.
9. To inculcate the knowledge and skills of preparing municipal building permission drawings for the public buildings.

Course Outcomes

3. The students will be able to plan and design a public building according to requirements adhering to appropriate norms and standards.
4. The students will be able to prepare 'Municipal drawing' for public buildings for obtaining building permission from competent authority.
5. The students will be able to incorporate Green Building Design principles while designing public buildings.
6. The students will be able prepare the building drawings by using suitable 'Computer Aided Drawing and Design' application software.

SECTION-I

Unit 1:- Dimension Relationships (03)

Dimensions & Space requirement in relation to body measurements. Space design for passage between walls, service access, stairs, ramps, elevators.

Unit 2:- Planning and Design of Public Buildings (16)

Planning and Design, Site Selection, site layout for various types of building such as:

d) Educational Building: Younger age range, Middle age range, older age range, School for mentally retarded.

e) Building for health – Sanatorium, Hospitals.

f) Assembly buildings - Recreation Hall, Community hall, Cinema theaters, Gymnasiums, Restaurant, Temples, Dance hall, Clubs.

g) Business and Mercantile building – Shops, banks, markets, & departmental stores

h) Industrial Buildings: Factories, Warehouses

i) Office and Other building: Post office, Administrative building etc.

j) Building for transportations – Bus Station, Truck Terminals

k) Computers centres, Service Centre for communication and electronic media

Unit 3:- Perspective (04)

Elements of perspective drawings, parallel perspective and angular perspective.

SECTION-II

Unit 4:- Green Buildings and Cad (06)

a) Computer aided design and drawing, Development of plan, Elevation and Section.
b) Concepts of Green Building and energy efficient buildings.

UNIT 5:- Acoustic Sound Insulation (06)

d) Acoustic- Sound Frequency, Intensity, sound decibel rating, absorption of sound- Various materials. Sabine's formula, optimum reverberation time, conditions for good acoustics, effect of reflectors, flat ceiling, design of an auditorium, defects in auditorium and remedies, acoustics of various buildings such as Auditorium hall, Classrooms, broadcasting room etc.

e) Sound insulation: Acceptable noise level – Noise prevention at its source, transmission of noise, Noise control- general Consideration.

UNIT 6:- Fire Resistant Structures (05)

Fire resistant Structures - Fire protection precautions, confining of fire, Fire hazards, characteristics of fire resistant material, various building material and resistance for fire, Fire resisting construction, fire load- Normal and abnormal, distribution of fire load, grading of structural elements and buildings, fire escapes.

UNIT 7:- Aesthetics (05)

c) The Nature of Architecture- Definition and Scope of the study.

d) The Aesthetic component of building, terms such as mass, space, proportion, Symmetry, balance, contract, pattern. Introduction to concept of Interior Designing and Landscaping.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

TERM WORK

(For all drawing work use full size sheets)

(C)Planning Designing of building project for which min. 3 Sheets to be drawn as shown below.

(a) Permission Drawing- 2 Sheets

(b) Furniture layout and Drainage layout – 1 Sheet.

(c) Perspective drawing of the above building.

(II)

(a) Drawing a perspective view of two small objects, total 2 exercises-1 sheet.

(D) One dimensional line plan for each type of building from unit no.2 (a to h) on full size graph sheets – total 4

(IV) Report on building project under (I) above.

Oral examination shall be based on Term Work.

Question paper shall have section of 40 marks devoted to drawing.

TEXT BOOKS

4. Building Construction: Arora and Bindra, Dhanpat Rai Publications
5. Building Design and Drawing – Y.S.Sane, Allies Book Stall
6. Principles of Perspective drawing- Shah, Kale, Patki, Tata Mc Graw Hill Publication Ltd, Delhi
7. Building Construction by Sushil Kumar, Standard Publishers Distributors, Delhi
8. Interior Design- Principles and Practice- M. Pratap Rao, Standard Publishers and Dist., Delhi
9. Building Planning and Design by Kumar Swami and Kameshwarrao, Charotar Publishing House.
10. Civil Engg. Drawing- by M. Chakraborty, Published by M Chakraborty – Kolkata
11. Civil Engineering Drawing – by R.S.Malik, G.S.Meo, Computech Publication Ltd New Asian

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

3. Building Construction by Mckay, W. B. & Mckay, J. M. , Vol.III and IV, Donhead Publishing Limited
4. Modern Building Construction by Warland D. E., Vol.I and II, Pitman Publishing
5. Building Drawing – Shah, Kale, Patki, Tata McGraw-Hill Education
6. Built Environment by Shah, Kale, Patki, Tata McGraw-Hill Education

4. Construction science – by Edwin Walker, Selwyn Morgan, Hutchinson Educational
5. Time savers standards for buildings – Calendar Pub. McGraw Hill
6. Alternative Building Materials & Technology-by Jagdish ,Reddy, Rao Published by New Age International, New Delhi
7. Nuclear Reactor Materials by C. Smith, Addison- Wesley Pub.
8. Art in everyday life by Goldstein, Oxford Pub.
9. Planning by E and OE – Pub. London Illiffe and Sons Ltd.
10. Inside Outside- Magazine issues.
11. Maintenance of Building- by A.C. Panchdhari, Published by New Age International, New Delhi.
12. Materials for Nuclear Power Reactors- by Hausner, Henry H. And Roboff, Stanley B., Reinhold Publishing Corp
13. Environment and services-by Peter Burberry, Mitchells Building Series
14. Development Control Rules- Building Byelaws of Local Authority.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART II

ENVIRONMENTAL ENGINEERING –II

Teaching Scheme

Lectures: 3 Hours per week
Practical: 2 Hours per week

Examination Scheme

Theory papers: 100 Marks
Term Work: 25 Marks
Oral Examination: 25 Marks

Course Objectives

3. To acquaint the students with the characterization of municipal waste, as well as sewage collection & conveyance systems.
4. Study of Primary and Secondary treatment methods of sewage, and concept of recycling the wastewater.
5. Familiarize the students with stream pollution due to waste disposal and suitable centralized/decentralized wastewater Treatment system
6. Learning solid waste and hazardous waste management systems for urban areas.
7. Understanding various sources of air pollution, its measurement and control.

Course Outcomes

Upon successful completion of course the student should be able to:

1. Plan the layout of sewage collection system, matching the topography of the region and characterisation of sewage.
2. Decide sequence and design of wastewater treatment units to meet the sewage treatment standards.
3. Design the wastewater treatment plant using Trickling filter, anaerobic treatment and low cost treatment methods
4. Adopt appropriate methods of Solid waste Disposal and Management of hazardous waste.
5. Measure air pollution and adopt control measures to control of industrial air pollution.

SECTION-I

Unit -1: Collection and conveyance of Sewage (08)

Components of wastewater flows, waste water sources and flow rate. Variation in flow rates, waste water constituents, Characteristics of municipal waste water, Quantity of storm water, Ground water infiltration.

Sewerage system, layout, types of sewers, collection system. Appurtenances Design of sanitary and storm water sewers, Maintenance of sewerage systems.

Sewage and sludge pumping, location, capacity and types of pumps, pumping station design.

Unit-2: Unit Operations (10)

Primary treatment - screening, comminuting, grit removal, oil and grease trap, chemical precipitation.

Secondary treatment – Activated sludge process, Process design and operating parameters, modification of ASP , operational problems .Trickling filter , classification , process design considerations . Secondary Clarifications.

Unit -3: Anaerobic treatment and Low cost treatment (06)

Fundamentals of anaerobic treatment, sludge characteristics, Treatment and disposal, Concept of different anaerobic reactors.

Low cost waste water treatment methods- Principle of waste stabilization pond.

Design and operation of oxidation pond, aerobic and anaerobic lagoons, Aerated lagoon, Oxidation ditch, septic tank.

Selection of alternative treatment process flow sheets. Concept of recycling of wastewater (gray water and brown water.)

SECTION-II

Unit-4: Disposal of waste water (08)

a) Disposal of waste water stream pollution, Self purification, DO sag curve, Streeter Phelp's Equation.

b) Emerging Technology for wastewater Treatment- Centralized Sewage Treatment System, objectives of small & decentralized wastewater Treatment system

Unit -5: Solid Waste Disposal (06)

Solid waste management – Solid waste definition, Types, sources, characteristics.

Functional outlines- storage, collection, processing techniques,

Methods of treatments of solid waste-Composting, Incineration, Pyrolysis and sanitary land filling. Concept of hazardous waste management.

Unit -6: Air Pollution (07)

Air Pollution- Definition, Sources and classification of pollutants, Effects. Introduction to meteorological aspects of control of industrial air pollution- Settling Chamber, Bag filter, Cyclone separator, Scrubbers, Electrostatic precipitators. Control of vehicular air pollution. Air quality standards

TERM WORK

The term work includes practical work to find the characteristics of wastewater and demonstration of Air monitoring equipments and design of sewage treatment plant

Term work shall consist of the following:-

(A) List of Experiments (Analysis of Waste Water)

1. pH Value.
2. Total Solids

3. Biochemical Oxygen Demand
4. Chemical Oxygen Demand
5. Chlorides
6. Oil & Grease
7. Sulphate Content
8. Total Nitrogen
9. Demonstration of High Volume Sampler
10. Demonstration of Auto Exhaust Analyzer.

(B) Design of sewerage system & Treatment system for a small urban area.

(C) Visit to sewage treatment plant

1. Journal containing experiments carried out in part A of the term work and visit Report on C
2. Detail design and appropriate drawings required for part B of the term work.

TEXT BOOKS

1. Environmental Engineering by Peavey- H. S. Rowe, D.R. and Thobanoglous, [McGraw – Hill Book Company]
2. Water supply and pollution control - Viessman W. and Hammer M.J. [Harper Collins College Publishers.]
3. Waste Water Engineering Treatment & Disposal - Mertcalf & Eddy, [Tata McGraw Hill, 1982]
4. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
5. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
6. Waste water Supply Engineering by B. C. Punmia
7. Solid Waste Management in Developing countries - Bhide A.D. and Sundersen B.B. [Indian National Scientific Documentation Centre, New Delhi]
8. Air Pollution- Rao M.N. and Rao H.V.N. [Tata Mcgraw Hill, 1990]

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1.Manual on sewerage & sewage Treatment published by Ministry of Urban Development Govt. of India Msy-2000. 35 PDOP-4-59-85-97,Ministry of Urban development

2.Water and waste water Technology - Hammer M.J, [Prentice-Hall of India Private ltd.]

3.Masters. G.M. Introduction to Environmental Engineering and Science

4.Manual on Municipal Solid Waste Management- Ministry of Urban Development Govt. of India.

Solapur University, Solapur

Faculty of Engineering & Technology, B.E. (Civil Engineering) Semester –VII, (Revised from 2015-16)

Credit System Structure of B. E. (Civil Engineering) Semester –VII, W. E. F. 2017-18

No	Theory Course Name	Hrs/week				Credits	Examination Scheme				Total
		L	*T*	*P*	*D*		*ISE*	*ESE*		*ICA*	
1	Design of Concrete Structures-I	3	-	-	-	3	30	70		-	**100**
2	Quantity Surveying & Valuation	3	-	-	-	3	30	70		-	**100**
3	Earthquake Engineering	3	-	-	-	3	30	70		-	**100**
4	Water Resources Engineering-II	3	-	-	-	3	30	70		-	**100**
5	Elective - I	3	-	-	-	3	30	70		-	**100**
	Total	**15**				**15**	**150**	**350**			**500**
	Laboratory/Drawings							**POE**	**OE**		
1	Design of Concrete Structures-I	-	1	-	-	1	-	-	-	25	**25**
2	Quantity Surveying & Valuation	-	-	4	-	2	-	50	-	50	**100**
3	Earthquake Engineering	-	-	2	-	1	-	-	-	25	**25**
4	Water Resources Engineering- II	-	-	2	-	1	-	-	25	25	**50**
5	Elective - I	-	-	2	-	1	-	-	25	25	**50**
6	Seminar	-	-	2	-	2	-	-	-	50	**50**
7	Project work	-	-	2	-	2	-	-	-	25	**25**
8	Assessment of report on field training-II	-	-	-	-	1	-	-		25	**25**
	Total		**1**	**14**		**11**		**50**	**50**	**250**	**350**
	Grand Total Semester-VII	**15**	**1**	**14**	**-**	**26**	**150**	**450**		**250**	**850**

• **Abbreviations –** L: Lecture, T: Tutorial, P: Lab Session, D: Drawing, ESE: End Semester Examination, ISE: In Semester Evaluation, ICA: Internal Continuous Assessment

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

w. e. f. Academic Year 2017-18

Solapur University, Solapur

Faculty of Engineering & Technology, B. E. (Civil Engineering) Semester –VIII, (Revised from 2015-16)

Credit System Structure of B. E. (Civil Engineering) Semester –VIII, W. E. F. 2017-18

No	Theory Course Name	Hrs/week				Credits	Examination Scheme				Total
		L	*T*	*P*	*D*		*ISE*	*ESE*		*ICA*	
1	Design of Concrete Structures-II	4	-	-	-	4	30	70		-	**100**
2	Construction Practices and Town Planning	4	-	-	-	4	30	70		-	**100**
3	Elective - II	3	-	-	-	3	30	70		-	**100**
4	Elective - III	3	-	-	-	3	30	70		-	**100**
	Total	**14**				**14**	**120**	**280**			**400**
	Laboratory/Drawings							**POE**	**OE**		
1	Design of Concrete Structures-II	-	-	2	-	1	-	-	-	25	**25**
2	Construction Practices and Town Planning	-	-	-	-	1	-	-	-	25	**25**
3	Elective - II	-	-	2	-	1	-	-	25	25	**50**
4	Elective - III	-	-	2	-	1	-	-	-	50	**50**
5	R. C. C. Structural Design & Drawing-II	-	-	-	4	2	-	-	50	50	**100**
6	Project work	-	-	6	-	4	-	-	100	100	**200**
	Total			**12**	**4**	**10**			**175**	**275**	**450**
	Grand Total Semester-VIII	**14**		**12**	**4**	**24**	**120**	**455**		**275**	**850**

•**Abbreviations –** L: Lecture, T: Tutorial, P: Lab Session, D: Drawing, ESE: End Semester Examination ISE: In Semester Evaluation, ICA: Internal Continuous Assessment

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

w. e. f. Academic Year 2017-18

B. E. (CIVIL) - LIST OF ELECTIVES

B. E. Civil Part-I		B. E. Civil Part-II			
ELECTIVE I		**ELECTIVE II**		**ELECTIVE III**	
5.1	Open Channel & River Hydraulics	3.1	Advanced Engineering Geology	4.1	Advanced Design of Steel Structures
5.2	Air Pollution & control	3.2	Ground improvement Techniques	4.2	Industrial Waste Treatment
5.3	Design of Foundations	3.3	Traffic Engineering & Control	4.3	Water Power Engineering
5.4	Advanced Design of Concrete Structures	3.4	Infrastructural Engineering	4.4	Advanced Concrete Technology
5.5	Managerial Techniques	3.5	Project Appraisal	4.5	Reliability Engineering
5.6	Computer Applications in Civil Engineering	3.6	Solid and Hazardous & Waste Management	4.6	Finite Element Method
5.7	Advanced structures	3.7	Dynamics of Structures	4.7	Experimental Stress Analysis
5.8	Entrepreneurship	3.8	Environmental Management	4.8	Optimization Techniques
5.9	Remote Sensing and GIS Applications	3.9	Design of Bridges	4.9	Disaster Management

w. e. f. Academic Year 2017-18

B.E. (CIVIL) PART - I

5. ELECTIVE- I

5.2 AIR POLLUTION AND CONTROL

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1. To study Sources, Causes & effects of Air Pollution.
2. To study the relation between Meteorology and Air Pollution.
3. To learn methods used for controlling air pollution.
4. To study Air pollution Prevention and legislation.

Course Outcomes:

On successful completion of this course the students will be able to

1. Identify the sources of air pollutants and their effect on human, plants and materials.
2. Apply knowledge of meteorology for controlling air pollution
3. Design of air pollution controlling equipments.
4. Use knowledge of legislation for prevention and control of air pollution.

SECTION –I

Unit 1: Introduction **(3)**

The Structure of the atmosphere, Composition of dry ambient air and properties of air. BIS Definition and scope of Air Pollution, Scales of air pollution, Types of exposures.

Unit 2: Air pollution sources **(5)**

Air Pollutants, Classifications, Natural and Artificial, Primary and Secondary, point and Non-Point, Line and Area Sources of air pollution. Stationary and mobile sources. composition of particulate & gaseous pollutant, units of measurement.

Unit 3: Effects of Air pollutants (6)

Effect of different air pollutants on man, animals, vegetation, property, aesthetic value and visibility, air pollution episodes. Global effects of air pollution- global warming, ozonedepletion, acid rain and heat island effect.

Unit 4: Meteorology and Air pollution (8)

Solar radiation, wind circulation, factors affecting dispersion of pollutants, Lapse rate, stability conditions, wind velocity profile, Maximum mixing depth (MMD), visibility, Wind rose diagram, General characteristics of stack plume (Plume behaviour). Gaussion diffusion model for finding ground level concentration. Plume rise. Formulae for stack height and determination of minimum stack height.

SECTION –II

Unit 5: Air sampling and analysis (5)

Air pollution survey, basis and statistical considerations of sampling sites, devices and methods used for sampling gases and particulates. Stack emission monitoring, isokinetic sampling. Analysis of air samples chemical and instrumental methods. Ambient air quality monitoring.

Unit 6: Photochemical smog, Odour pollution and Indoor pollution (6)

Chemistry of air pollution, Chain reactions of hydrocarbons, nitrogen oxide, Sulphuric oxides and intermediates, photochemical smog formation, air pollution indices -aerosols, fog, smog index.

Odour pollution: Theory, sources, measurement and methods of control of odour pollution. Indoor air pollution: Causes of air pollution, sources and effects of indoor air pollutants, changes in indoor air quality, control of indoor air pollutants and air cleaning systems.

Unit 7: Control of air pollution (8)

By process modification, change of raw materials, fuels, process equipment and process operation. By use of air pollution control equipment for particulate and gaseous pollutants. Design of control equipment as Settling chamber, Cyclone, Fabric filter, Electro static precipitator and Wet scrubber.

Unit 8: Control of gaseous pollutants and Legislation (4)

Principles of removal of gaseous pollutants, design of incineration, absorption adsorption systems. Control of air pollution from automobiles. Vehicular pollution, composition, quantity and control.

Air (Prevention and Control) Pollution Act, 1981.Emission standards for stationary and mobile sources. National Ambient air quality standards, 2009 (NAAQS).

TERM WORK

1. Assignments / problems on Air pollution.
2. Sampling and analysis of Ambient Air
3. Sampling and analysis of Automobile exhaust
4. Demonstration of stack gas monitoring

Viva/Oral examination will be based on above theory syllabus and term work

TEXT BOOKS:

i. Air pollution – Wark and Warner
ii. Air Pollution – Rao and Rao, TMH
iii. Environmental Engineering – by Peavy and Rowe, TMH.
iv. Air Pollution and Control- Murali Krishna, Jain Brothers

REFERENCE BOOKS:

i. Air pollution – Martin Crawford
ii. Air Pollution and Control Technologies- Y. Anjaneyulu, Allied Publishers
iii. Fundamentals of Air Pollution- Raju BSN, IBH Publisher
iv. An Introduction to Air Pollution- R. K. Trivedi and Goyal, BS Publications.

॥ विद्यया संपन्नता ॥

B.E. Civil (Part-I)

5. ELECTIVE – I

5.8 ENTREPRENEURSHIP

Teaching Scheme	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1. To familiarize the students with the concept of Entrepreneurship, Entrepreneur and Women Entrepreneur opportunities in the country.
2. Acquaint the student's innovative business ideas in emerging industrial scenario with 'small scale industries' policy resolutions.
3. Introduce the student's with finance and accounting aspects, Industrial and commercial tax laws AND marketing management of entrepreneurship.

Course outcomes:

By the end of the course the students should be able to

1) Exhibit skills necessary to craft strategies and initiatives which can enable growth and sustainability in an entrepreneurial venture.
2) Prepare preliminary and final project report
3) Exhibit higher-level critical thinking skills, evidenced by analysis, evaluation, and synthesis.
4) Demonstrate skills to establish and manage the accounting process, to employ break even and cost-volume-profit tools.

SECTION – I

Unit 1: **(08)**

Meaning, Definition and concept of Enterprise, Entrepreneurship and Entrepreneurship Development, Evolution of Entrepreneurship, risks involved with entrepreneurship, barriers to Entrepreneurship, Factors affecting entrepreneurial growth.

Entrepreneur, qualities of a successful entrepreneur, types of entrepreneurs (on basis of business, motivation, stages of development, entrepreneurial activity), functions of an entrepreneur, entrepreneurial competencies, types of entrepreneurial competencies. Concepts of Intrapreneurship, Entrepreneur v/s Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Role of Entrepreneurship in Economic Development, Factors affecting Entrepreneurship, Problems of Entrepreneurship. Creativity and Innovation, Innovation and Entrepreneurship.

Unit 2: **(06)**

Women Entrepreneurship:- Meaning, Characteristic features, Problems of Women Entrepreneurship in India, Developing Women Entrepreneurship in India, reasons for the slow growth of women entrepreneurship, remedies to solve the problems of women entrepreneurs. Measures taken for the development of women.

Entrepreneurship In India:- Training of Rural Youth For Self Employment, BANKS, NABARD, Industrial Policy, FICCI Ladies Organization (FLO), National Alliance of Young Entrepreneurs (NAYE).

Unit 3: **(08)**

Role of Government in promoting Entrepreneurship, MSME policy in India, Agencies for Policy Formulation and Implementation: District Industries Centres (DIC), Small Industries Service Institute (SISI),Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Financial Support System: Forms of Financial support, Long term and Short term financial support, Sources of Financial support, Development Financial Institutions, Investment Institutions. Finance, Institutional finance to Entrepreneurs, Preparation of Business Plans, Commercial Banks, Other financial institutions like IDBI,IFCI, ICICI, IRBI, LIC, UTI, SFCs, SIDCs, SIDBI, EXIM.

Bank Institution Support to Entrepreneurs: Need for Institutional support - Small Entrepreneurs: NSIC, SIDO, SSIB, SSICS, SISI, DICs, Industrial Estates Specialized Institutions.

SECTION – II

Unit 4: **(08)**

Finance Analysis and accountancy: Estimation of cost of project and means of financing, working capital requirement and its financing, estimates of working results working capital and fixed capital assessment incentives from financial institutions and government, financial ratios, their significance, break even analysis cash flow charts financial statements.

Unit 5: **(07)**

Project Report: Preliminary and final project report preparation, financial technical commercial and economic viability project implementation process project profiles.

Unit 6: **(08)**

Introduction to Marking, Market study, Goal sitting, Sale and Sales Promotion. Industrial and commercial tax laws (major features only), Risk and Risk analysis, goal setting and decision making, Communication skills development and barriers.

Note: The subject may be taught with respect to suitable case studies and industrial visits. Audio video films shall be used on the above topics.

TERM WORK

1. Preparation of preliminary and final project report of anyone small scale industry from civil Engineering field.
2. Report based on two industrial visits.

TEXT BOOKS:

1) Patterns of Entrepreneurship, Jack M. Kaplan Wiley Publications.
2) Planning and Industrial Unit, Jay Narayan Vyas, GranthVitran Shreyas, Opp. Jain Temple Near Navrangpura Bus Stop, Navrangpura
3) Financing an Industrial Unit, Jay Narayan Vyas and Dilip Patel,Granthvitaran Ahmedabad .
4) Entrepreneurship Development Vol. I, II & III, Vasant Desai, Himalaya Publishing house.

w. e. f. Academic Year 2017-18

REFERENCE BOOKS:

1) Entrepreneurship for the Nineties, Gordon B. Baty, Prentice Hall Inc. College Technical Reference by Granthvitaran.
2) Small Scale Industry Handbook, Jay Narayan Vyas, Granth Vitaran Ahmedabad
3) The Practice of Entrepreneurship, Geoffery G. Meredith R.E. Nelson and P. A. Neck, Published by International Labour Office, CH 1211, Geneva 22, Switzerland
4) Entrepreneurship Theory at Cross Road, Mathew J. Manimala, Biztantra publications.
5) Entrepreneurship and small business, WEBER, LEWIS, VOLERY, SCHAPER, Wiley publications.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –II

3. ELECTIVE II

3.6 SOLID AND HAZARDOUS WASTE MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1) To study the types, sources, generation of solid &hazardous waste.
2) To impart basic knowledge of collection, transportation, treatment and disposal of solid waste
3) To study handling and storage of solid and hazardous waste.

Course Outcomes:

Upon successful completion of course, the students will be able to:

1) Suggest waste reduction and resource recovery methods
2) Explain various waste disposal methods
3) Examine legal, political and administrative considerations in design and operation of solid and hazardous waste management

SECTION I

Solid Waste Management

Unit 1: **(06)**

Solid Waste management: Functional outlines of refuse, storage, transportation of refuse, analysis, composition and quantity of refuse, Economic aspects of refuse collection and transport.

Solid waste in industries, common types of solid waste, classification, collection and transportation. Concept of biomedical & Hazardous waste management.

Unit 2: **(05)**

Solid waste handling and Processing methods, Segregation and salvage recovery of bye-products, use of solid waste as raw material in industries. Recycling of solid waste.

Unit 3: **(06)**

Composting: Theory of composting, types of composting, factors governing composting, processing before composting, mechanical composting plant, and recovery of Bio –gas energy from organic solid waste.

Unit 4: **(06)**

Incineration: Theory and types of incinerators, location, planning aspects, effects of feed, composition, rate and temperature, air supply, design of incineration plant, pyrolysis and its by-products, energy recovery.

Solid waste management rules, status of solid waste management in India.

SECTION –II

Hazardous Waste Management

Unit 5: **(06)**

Definition of Hazardous waste, Characteristics and nature of hazards, natural and man- made hazards, classification of hazards.

Unit 6 : **(04)**

Qualitative estimation of damages, risk assessment and management.

Unit 7: **(06)**

Types of hazardous waste, characteristics, Site assessment waste minimization resource recovery. Strategy for minimization of damage due to natural and manmade hazards.

Unit 8: **(06)**

Storage and handling of hazardous waste, Site Selection, Transportation of hazardous wastes. Case Studies of hazards, episodes. Sanitary landfill site selection, types of land filling, maintenance and precaution, leachate and its control, control of contamination of ground water.

TERM WORK

1. Analysis of solid waste
2. Project on Design of Refuse collection & Disposal System for medium size town or a part of city.
3. Case study of Hazards and Episodes (Any Two).
4. Assignments (One Assignment on each unit)

TEXT BOOKS:

i) Solid Waste Management – Dr. A.D. Bhide

ii) Hazardous Waste Management – C. A. Wentz McGraw Hill International Edition

iii) Management of Municipal Solid Waste- T. V. Ramchandra, Capital Publishing company, New Delhi

iv) Solid and Hazardous Waste Management- M. N. Rao and Razia Sultana BS Publication

REFERENCE BOOKS:

i) Solid Waste Management – George Tchobanoglous, Mc Graw Publication

ii) Manual on Municipal Solid Waste management by ministry of Urban Development of Govt. of India.

iii) Solid Waste Management- I. H. Khan, and Naved Ahsan, CBS Publishers and Distributors, New Delhi.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

3. ELECTIVE II

3.8 ENVIRONMENTAL MANAGEMENT

Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1) To study principles of Environmental Management System.
2) To acquaint students with different Environmental pollution control acts.
3) To study the electronic, biomedical and industrial waste properties and waste management systems
4) To inculcate idea of Environmental Impact Assessment.

Course outcomes:

Upon successful completion of course the students will be able to:

1) Demonstrate basic principles of Environmental Management System.
2) Explain different Environmental pollution control acts.
3) Select appropriate technology for management of electronic, biomedical and industrial waste
4) Perform Environmental Impact Assessment small project

SECTION-I

Unit 1: **(6)**

Fundamentals of environmental management system (EMS) and ISO 14000 series: History Background and development of ISO 14000, TC-207, ISO 14000series. Environmental management Plans- Principles and elements. The ISO 14001-Environmental management systems standard, Definitions, Eco labeling, Auditing

Unit 2: **(6)**

Environmental management acts related to environmental protection: Air, Water, Soil and Hazardous Waste. Detailed study of following acts - Water act 1974(Prevention and control of pollution), Air act 1981 (Air pollution prevention and control of pollution), Hazardous waste management handling rules -1989. Municipal solid waste rules- 2000, Noise pollution regulation and control rules 2000 **(7)**

Unit 3 : **(5)**

Electronic waste management: Objectives, Classification of E-waste, guidelines for environmentally sound management of E-waste, environmentally sound treatment technology for E-waste, guidelines for environmentally sound integrated E-waste recycling and treatment policy International scenario, hazardous substances that can occur in E-waste.

Unit 4: **(5)**

Biomedical waste management: Introduction, Classification, Types, segregation, packaging and transportation and storage, possible hazards, Effects, Detailed study of Biomedical waste management and handling rules 1998.

SECTION –II

Unit 5: **(4)**

Air pollution control:, Air quality standards, Air pollution control technologies for oxides of sulphur: Reducing SOx levels through dilution by increasing stack height, use of alternative fuels. Extraction of sulphur from fuels. Reduction of sulphur in combustion process, fuel gas desulfurization.

Air pollution control technologies for oxides of Nitrogen: Emission of nitrogen oxides. Control technologies for oxides of nitrogen emissions. Air pollution control technologies for volatile organics, Hydrocarbons and hydrogen sulphide.

Unit 6: **(5)**

Advanced waste water treatment: Carbon adsorption, Ion exchange, sodium and hydrogen cycle. Membrane process. Electro dialysis process, pressure membrane process and membrane performance characterization. Nutrients removal such as nitrogen and phosphorus removal.

Land treatment systems: Irrigation, rapid infiltration and overland flow systems. Wetland flow Systems.

Unit 7: **(7)**

Environmental Impact Management (EIA)

I) Definition, Objectives of EIA .EIA procedure in detail, Role of different actors in EIA, components of EIA, Areas of human concern (Impact categories), Contents of EIA, Categories of projects under EIA, Introduction to Impact assessment methods such as Leopold matrix Legal provision for public participation in India,

Role of general public in Environmental clearance. Limitations of EIA

II) The environmental rules 1999, sitting for industrial process, methodology for preparing environmental impact assessment, role of regulatory agencies and control boards in obtaining Environmental clearance for project.

III) **Case studies:-**Positive and negative environmental impacts of Dams, Express highways, Major industries, Power plants

Unit 8: **(7)**

Miscellaneous Topics

I) **Removal of Chromium:** General, control methods, reduction precipitation, Ion Exchange, RO, Lime coagulation and adsorption

II) **Removal of Mercury:** General, measurement of mercury, mercury losses in Chlor-Alkali industries, removal of mercury from gaseous streams, removal of Mercury through liquid streams.

III) **Treatment of phenolic effluents:** Introduction, sources of phenols, Treatment and removal.

TERM WORK

Term work shall consist of assignments on all above units and following chapters and one industrial visit report.

Oral examination shall be based on above term work.

w. e. f. Academic Year 2017-18

TEXT BOOKS:

1. Environmental engineering and management- Dhameja, Katson publications, Delhi
2. Air Pollution and control, K.V.S.G. Murli Krishna, Jain Brothers, Delhi
3. Water Management, K.V.S.G. Murli Krishna, Environmental Protection Soc., Kakinada

REFERENCE BOOKS:

1. Indian standards BIS
   - -IS/ISO 14001
   - - IS/ISO 14004
   - - IS/ISO 14011
   - - IS/ISO 14010
   - - IS/ISO 14012
2. Wastewater treatment and reuse- Metcalf and Eddy, TMG, Delhi
3. Pollution control in process industries- S. P. Mahajan, TMG, Delhi
4. Environmental science and engineering- Henry and Henke, PHI, New Delhi
5. For all environmental acts and updates - **http://www.envfor.nic.in**

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

4. ELECTIVE III

4.2 INDUSTRIAL WASTE TREATMENT

Teaching Scheme:	Examination Scheme:
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 50 Marks

Course Objectives:

1. To understand sources of waste water in different industries.
2. To study waste water treatment options for different industries.
3. To acquire knowledge about disposal of effluents and the standards for disposal

Course Outcomes:

On successful completion of this course the students will be able to:

1. Characterize different industrial wastes
2. Suggest treatment alternative based on characteristics of industrial waste.
3. Demonstrate basic knowledge of legislation for pollution control

SECTION -I

Unit 1: **(5)**

Use of water in industry, Sources of wastewater, quality, and quantity variation in waste discharge, water budgeting, characterization and monitoring of wastewater flow, Grab samples and Composite samples. Population equivalent, Relative stability and Theoretical oxygen demand. Water quality criteria and effluent standards. Introduction to water quality index (WQI), methods used.

Unit 2: **(7)**

Waste volume and strength reduction, In-Plant measure, good housekeeping, Process change, leakage prevention, segregation, recycling, neutralization, equalization and proportioning of waste. In line equalization, Side line equalization. Methods for determining volume of equalization tank.

Unit 3: **(7)** Water quality monitoring of streams, Self-purification of stream, Streeter Phelphs equation, Classification of streams. B.O.D. reaction rate - Method of least squares, Thomas method and Fuji mato method. D.O. Sag curve and D.O. deficit calculations.

Unit 4: **(4)**

Miscellaneous methods of dissolved solids removal- Ion-exchange, Electro dialysis, Reverse osmosis and Evaporation, Adsorption. Sludge disposal methods.

SECTION –II

Unit 5: **(4)**

Different types of waste treatment and their selections, Development of treatment flow diagram based on characteristics of waste. Pollution characteristics of common Industries.

Unit 6: **(9)**

Manufacturing processes in major industries, water requirements, wastewater sources, composition of wastes, Viz. Sugar, Distillery, Dairy, Pulps, Paper mill, Fertilizer, Tannery, Chemical, Steel Industry, power Plants, Textile Treatment flow sheets, alternative methods of treatment, factors affecting efficiency of treatment plant. Effect of above industrial wastes on receiving water bodies.

Unit 7: **(4)**

Introduction to the concept of zero discharge, Recycling and reuse and recovery Introduction to 3R principles to convert waste into wealth, Acclimatization of bacteria to toxic wastes, process sensitivity, operation and maintenance requirements.

Unit 8: **(5)**

Water pollution control act, organizational set up of central and state boards for water pollution control, classification of river on water use, minimal national standards, socioeconomic aspects of water pollution control.

Introduction to Wetland treatment – Root zone cleaning system. Introduction to green processes in the industries.

TERM WORK

1) Visit to any four of the following industries

i. Sugar industry

ii. Distillery industry

iii. Dairy industry

iv. Textile industry

v. Tannery

vi. Paper and Pulp

vii. Common effluent treatment plant (CETP)

Note: - Detailed visit report shall be prepared for each of the industrial visit

2) One assignment on each unit.

TEXT BOOKS:

1. Industrial Waste Treatment - Nelson Nemerow, Addison - Wesley
2. Industrial Waste Treatment – Rao & Datta, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Industrial Waste Water Treatment- Dr. A. D. Patwardhan, Prentice Hall of India

REFERENCE BOOKS:

1. Water and Waste Water Engg.- Fair G.M., Gayer J.C. and Okun D.A. , John Wiley Publication
2. Water and Waste Water Technology, M. J. Hammer and M. J. Hammer(Jr.)
3. Waste Water Engineering – Metcalf Eddy - Mc Graw Hill Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

w. e. f. Academic Year 2017-18

B.E. Civil – Part II

4. ELECTIVE – III

4.9 DISASTER MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 50 Marks

Course Objectives:

1) Study of various disasters, their characteristics, causes and impacts.
2) Acquaint with the various disaster management stages to prevent or reduce losses that occur due to hazards during disaster and emergencies.
3) Provide information regarding various programmes of International, National and State and District Level Agencies for disaster management.

Course Outcomes:

By the end of the course students should be able to

1) Apply various disaster preparedness, mitigation and management techniques.
2) Apply the Geo-informatics techniques for prepare hazard zonation maps for Disaster management.
3) Apply the various schemes and programmes of International, National and State and District Level Agencies for disaster management.

SECTION-I

Unit 1: **(08)**

Environmental Hazards and Disasters:-

Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress & Environmental Disasters. Different approaches & relation with human Ecology- Landscape Approach- Ecosystem Approach- Perception approach- Human ecology & its application in geographical researches.

Unit 2: **(08)**

Types of Environmental hazards and Disasters:-

Natural disaster and Planetary Hazards

Earthquake Hazards/ disasters- Introduction, general characteristics, mechanism, causes and effects of Earthquakes, prediction, seismic zones, seismic waves, vulnerability, damage potential – magnitude and intensity, Earthquake Hazards in India- Human adjustment, perception and mitigation of earthquake.

Volcanic Hazards/Disasters:- Volcanoes Causes of volcanism, volcanic materials, hazardous effects and impacts of volcanic eruptions.

Landslide and Land Degradation:- Causes, tectonic conditions, erosion, avalanches, rock fall, damage assessment. Landslide prone area in India.

Cyclones and Tsunamis:- Structure and nature of cyclones (Tropical cyclones & Local storms) & tsunamis, characteristics, hazard donation, factors, hazard potential, impact assessment. Cyclone prone areas in India.

Floods:- General characteristics, causes, Flood hazards India, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management (Human perception & mitigation).

Droughts:- Cause and Impacts of droughts- Drought hazards in India- Drought control measures.

Man-made Disaster and Extra Planetary Hazards/ Disasters

Man induced Hazards /Disasters-Physical hazards/ Disasters-Soil Erosion

Soil Erosion:- Mechanics & forms of Soil Erosion- Factors & causes of Soil Erosion, Conservation measures of Soil Erosion.

Mining:- Mining and environment, land & environment degradation and management, Mined land reclamation.

War and Chemicals disaster: - Release of toxic chemicals Hazardous wastes, reactivity, toxicity, nuclear war, biological weapons, armed conflicts, land mines etc.

Sedimentation processes: - Global Sedimentation problems, Regional Sedimentation problems. Sedimentation & Environmental problems- Corrective measures of Erosion & Sedimentation.

Biodiversity Extinction and Deforestation:- Biodiversity, species at risks, loss of biodiversity, management of species diversity, deforestation its causes & adverse effects.

Biological hazards/ disasters:- Population Explosion.

w. e. f. Academic Year 2017-18

Unit 3: **(06)**

Disaster Management:- Three Stages

Pre-disaster stage (Preparedness):- Introduction to disaster preparedness, Three A's of disaster preparedness, principles of disaster preparedness, steps in disaster preparedness, Preparing hazard zonation maps, Predictability/ Forecasting & warning, preparing disaster preparedness plan. Land use zoning- Preparedness through (IEC) Information, education and Communication. Disaster resistant house construction- Population reduction in vulnerable areas- Awareness.

Emergency stages: - Planning, mitigation, preparedness, response and recovery.

Post Disaster stage (Rehabilitation):- Physical and Social Infrastructure, Social and economic rehabilitation, Repair and retrofitting, Political Administrative Aspect.

SECTION-II

Unit 4: **(05)**

Natural Disaster Reduction and Management:- Provision of Immediate relief measures to disaster affected people-Prediction of Hazards & Disasters-Measures of adjustment to natural hazards.

Unit 5: **(09)**

Disaster Mitigation:-

Disaster Mitigation through Development: Disaster Mitigation: Basic Concepts, Meteorological and Seismological observation, Structured and Non Structured Mitigation, disaster mitigation strategies, importance of Information and Communication in Disaster Mitigation, Relationship between Disaster and Development, Sustainable Development for Disaster Mitigation, Importance of various Agencies/sectors involved for disaster mitigation.

Education on disasters -Community involvement, The adjustment of Human Population to Natural hazards & disasters. Role of database in Disaster Mitigation, GIS and GPS applications.

Role of Media

Monitoring Management- programme of disaster research and mitigation of disaster of following organizations. International Council for Scientific Unions (ICSU)-Scientific

committee on problems of the Environment (SCOPE), International Geosphere Biosphere programme (IGBP) – World federation of Engineering Organizations (WFED). National Academy of Sciences-World Meteorological organizations (WMO). Various U.N agencies like UNCRD, IDNDR, WHO, UNESCO, UNICEF, UNEP.

Unit 6: **(09)**

Agencies in Disaster Management

International Agencies: United Nations and its specialized agencies like UNDP, FAO, WHO AEC (Atomic Energy Commission), United Nations Disaster Management Cell, New Delhi. International Federation of Red Cross and Red Crescent Societies (IFRC) and National Red Cross/Red Crescent Societies.

National Agencies: Disaster Management Cell (Ministry of Home Affairs, Govt. of India), National Institute of Disaster Management, Indian Red Cross Society, Planning Commission, National Civil Defense Organization, Bharat Scouts and Guides. Military and Para-Military Forces; Corporate Bodies etc.

State and District Level Agencies: Disaster Management cells at state level and District level, District Magistrate office, Role and Responsibilities of DM in prevention, preparedness, mitigation, relief and rehabilitation; local bodies and role of different functionaries-

TERM WORK

1. Practical exercise on each unit
2. Each student will be required to prepare a project work of Coastal Ecosystem, Desert Eco System and Mountain Eco System & submit it at the end of year & this will be evaluated by an internal as well as external examination

TEXT BOOKS:-

1. The Environment as Hazards, Kates, B.I& White, G.F, Oxford, New York, 1978
2. Disaster Management, R.B. Singh, Rawat Publication, New Delhi, 2000.
3. Disaster Management H.K. Gupta, Universities Press, India, 2003.
4. Space Technology for Disaster Mitigation in India (INCED), R.B. Singh, University of Tokyo, 1994.
5. Disaster Management in Hills, Dr. Satender, Concept Publishing Co., New Delhi, 2003.
6. Plan for Earthquake, Disaster, Mitigation, Disaster Management, A.S. Arya, V.K.

Sharma, Action IIPA Publication New Delhi, 1994.
7. An overview on Natural and Man-made Disaster & their Reduction, R.K. Bhandani, SIR, New Delhi.
8. Disaster Mitigation, Preparedness, Recovery and Response, P. C. Sinha, SBS Publishers and Distributors Pvt. Ltd.
9. Introduction to International Disaster Management, D. P. Coppola, Butterworth-Heinemann.
10. Disaster Management M. Sharma, Vinod K., NCDM, IIPA, New Delhi, 1994
11. Housing in Disaster prone areas, National Building Organization and U.N. Regional Centre, Mathur G.C., ESCAP, New Delhi, 1986.
12. Disaster Management, Dr. Mrinalini Pandey, Wiley Publication.

REFERENCE BOOKS:-

1. Disaster Management in India – A Status Repot, National Disaster Management Division, Ministry of Home Affairs, Govt. of India, 2004.
2. Disaster Management and Preparedness, Collins Larry R. and Scheind Thomas D. (2000)., Taylor and Francis, 2000.
3. Disaster Management, Sharma V.K., Indian Institute of Public Administration, New Delhi, 1995.
4. National Disaster Response Plan, NCDM, New Delhi, 2001.
5. Manuals on Natural Disaster management in India, M.C. Gupta, National Centre for Disaster Management, IIPA, New Delhi, 2001.
6. Management of Floods, National Disaster Management Authority, Government of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Academic Year 2016-17

S.E
New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S. E. Civil- I, W. E. F. 2015-2016; Semester- I

Theory Course Name	Hrs./week				Credits	Examination Scheme			
	L	T	P	D		ISE	ESE	ICA	Total
Concrete Technology	2	-	-	-	2	30	70	-	100
Structural Mechanics-I	3	-	-	-	3	30	70	-	100
Surveying –I	3	-	-	-	3	30	70	-	100
Building Construction & Drawing	3	-	-	-	3	30	70	-	100
Fluid Mechanics-I	3	-	-	-	3	30	70	-	100
Engg. Geology	3	-	-	-	3	30	70	-	100
Total	**17**		–		**17**	**180**	**420**	**-**	**600**
Laboratory/Drawings							**POE**	**OE**	
Concrete Technology	-	-	2	-	1	-	-	-	25	25
Structural Mechanics-I	-	-	2	-	1	-	-	-	25	25
Surveying –I	-	-	2	-	1	-	25	-	25	50
Building Construction& Drawing	-	-	-	2	1	-	-	-	25	25
Fluid Mechanics-I	-	-	2	-	1	-	25	-	25	50
Engg. Geology	-	-	2	-	1	-	25	-	25	50
Lab. Practice	-	-	2*	-	0.5	-	-	-	25	25
Total	**-**	**-**	**11**	**2**	**6.5**	–	**75**		**175**	**250**
Grand Total	**17**	**-**	**11**	**2**	**23.5**	**180**	**495**		**175**	**850**
Environmental Science	**1**	–	–		–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing. *- Alternate week, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

(1) The number of students in a practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

S.E
New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S. E. Civil-II, W. E.F. 2015-2016; Semester -II

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Structural Mechanics-II	3	1	-	-	4	30	70		25	125
Surveying –II	3	-	-	-	3	30	70		-	100
Building Construction & Design	3	-	-	-	3	30	70		-	100
Fluid Mechanics-II	3	-	-	-	3	30	70		-	100
Water Resources Engg.I	3	-	-	-	3	30	70		25	125
Engg. Math-III	3	1	-	-	4	30	70		25	125
Total	**18**	**2**	**-**	**-**	**20**	**180**	**420**		**75**	**675**
Laboratory/Drawings:							**POE**	**OE**		
Surveying –II	-	-	2	-	1	-	-	25	25	50
Building Construction & Design	-	-	-	2	1	-	-	25	25	50
Fluid Mechanics-II	-	-	2	-	1	-	-	-	25	25
Computer Programming & Numerical Methods	2	-	2	-	3	-	25	-	25	50
Total	**2**	**-**	**6**	**2**	**6**	**-**	**25**	**50**	**100**	**175**
Grand Total	**20**	**2**	**6**	**2**	**26**	**180**	**495**		**175**	**850**
Environmental Science	1	–	–		–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

(1) The number of students in a Practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2014-2015)

Credit System structure of T. E. Civil-I, W. E. F. 2016-2017; Semester- V

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Design of Steel Structures	3	-	-	-	3	30	70		-	100
Geotechnical Engg.I	3	-	-	-	3	30	70		-	100
Building Planning & Design	3	-	-	-	3	30	70		-	100
Environmental Engg.I	3	-	-	-	3	30	70		-	100
Engineering Management- I	3	-	-	-	3	30	70		25	125
Transportation Engg.-I	3	-	-	-	3	30	70		-	100
Self Learning (H.S.S. course)	-		-	-	2	-	50		-	50
Total	**18**				**20**	**180**	**470**		**25**	**675**
Laboratory/Drawings							**POE**	**OE**		
Design of Steel Structures	-	-	2	-	1	-	-	-	25	25
Geotechnical Engg.I	-	-	2	-	1	-	25	-	25	50
Building Planning & Design	-	-	-	4	2	-	-	25	25	50
Environmental Engg.I	-	-	2	-	1	-	-	-	25	25
Transportation Engg.-I	-	-	2	-	1	-		-	25	25
Total	**-**	**-**	**8**	**4**	**6**	**-**	**50**		**125**	**175**
Grand Total	**18**		**8**	**4**	**26**	**180**	**520**		**150**	**850**

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing. *- Alternate week, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of T. E. Civil-II, W. E.F. 2016-2017; Semester - VI

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Structural Mechanics-III	4	-	-	-	4	30	70		-	100
Geotechnical Engg.II	4	-	-	-	4	30	70		-	100
Environmental Engg.II	3	-	-	-	3	30	70		-	100
Engineering Management- II	4	-	-	-	4	30	70		-	100
Transportation Engg.-II	3	-	-	-	3	30	70		25	125
Self Learning (Technical course)	-	-	-	-	2	-	50		-	50
Total	18	-	-	-	20	150	400		25	575
Laboratory/Drawings:						-	POE	OE		
Structural Mechanics-III	-	-	2	-	1	-	-	-	25	25
Geotechnical Engg.II	-	-	2	-	1	-	-	-	25	25
Environmental Engg.II	-	-	2	-	1	-	-	25	25	50
Engineering Management- II	-	-	2	-	1	-	-	25	25	50
Steel Structural Design & Drawing	-	-		4	2	-	-	25	50	75
Mini project (Any subject in Civil Engg.)	-	-	-	-	1	-	-	-	25	25
Assessment of field training report	-	-	-	-	-				25	25
Total	-	-	8	4	7			75	200	275
Grand Total	20	-	8	2	27	150	475		225	850

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

(1) Students shall undergo a field training of 15 days in the winter vacation after T.E. Part I and submit the field training report, which shall be assessed by faculty associated with Engineering Management- II in T.E. Part II.

(2) Students shall undergo a field training of 15 days in the summer vacation after T.E. Part II. The training report shall be assessed in B.E. Part -I by the concerned project guides.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

(4) Syllabus of Self learning (H.S.S.) is common for all Under Graduate Programs under Faculty of Engineering and Technology.

(5) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7 students, then a new batch be formed.

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1. Economics
2. Intellectual Property Rights for Technology Development and Management
3. Introduction to Sociology
4. Stress and Coping
5. Professional Ethics & Human Values

Third Year Engineering (Semester V)

ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

a) Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

b) Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

c) The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

a) Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.

b) Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.

c) P. Narayan: Patent Law. Eastern Law Co., Calcutta.

REFERENCE BOOKS

a) Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.

b) Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

(A) Formal organization (bureaucracy)

(B) Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

A Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).

B Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.

C General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

(A) Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.

(B) Society in India, David Mandelbaum, , 1990, Popular Publications.

(C) Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.

2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.

3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.

2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus.
(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.

2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.

3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.

2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994. *w. e. f.*

T.E. (CIVIL ENGINEERING) PART- I

BUILDING PLANNING & DESIGN

Teaching Scheme:

Lectures: 3 hours per week
Drawing: 4 hours per week

Examination Scheme

Theory paper: 100 marks
Term work: 25 marks
Oral Exam: 25 Marks

Course Objectives

6. To acquaint the students with of various types of public buildings and their functional requirements.
7. Study of principles of planning and design of public buildings with special reference to aesthetics, acoustics and fire fighting.
8. To emphasize the various aspects of the 'Green Building' design considerations and their adoption in public building planning.
9. To inculcate the knowledge and skills of preparing municipal building permission drawings for the public buildings.

Course Outcomes

3. The students will be able to plan and design a public building according to requirements adhering to appropriate norms and standards.
4. The students will be able to prepare 'Municipal drawing' for public buildings for obtaining building permission from competent authority.
5. The students will be able to incorporate Green Building Design principles while designing public buildings.
6. The students will be able prepare the building drawings by using suitable 'Computer Aided Drawing and Design' application software.

SECTION-I

Unit 1:- Dimension Relationships (03)

Dimensions & Space requirement in relation to body measurements. Space design for passage between walls, service access, stairs, ramps, elevators.

Unit 2:- Planning and Design of Public Buildings (16)

Planning and Design, Site Selection, site layout for various types of building such as:

d) Educational Building: Younger age range, Middle age range, older age range, School for mentally retarded.

e) Building for health – Sanatorium, Hospitals.

f) Assembly buildings - Recreation Hall, Community hall, Cinema theaters, Gymnasiums, Restaurant, Temples, Dance hall, Clubs.

g) Business and Mercantile building – Shops, banks, markets, & departmental stores

h) Industrial Buildings: Factories, Warehouses

i) Office and Other building: Post office, Administrative building etc.

j) Building for transportations – Bus Station, Truck Terminals

k) Computers centres, Service Centre for communication and electronic media

Unit 3:- Perspective (04)

Elements of perspective drawings, parallel perspective and angular perspective.

SECTION-II

Unit 4:- Green Buildings and Cad (06)

a) Computer aided design and drawing, Development of plan, Elevation and Section.
b) Concepts of Green Building and energy efficient buildings.

UNIT 5:- Acoustic Sound Insulation (06)

d) Acoustic- Sound Frequency, Intensity, sound decibel rating, absorption of sound- Various materials. Sabine's formula, optimum reverberation time, conditions for good acoustics, effect of reflectors, flat ceiling, design of an auditorium, defects in auditorium and remedies, acoustics of various buildings such as Auditorium hall, Classrooms, broadcasting room etc.

e) Sound insulation: Acceptable noise level – Noise prevention at its source, transmission of noise, Noise control- general Consideration.

UNIT 6:- Fire Resistant Structures (05)

Fire resistant Structures - Fire protection precautions, confining of fire, Fire hazards, characteristics of fire resistant material, various building material and resistance for fire, Fire resisting construction, fire load- Normal and abnormal, distribution of fire load, grading of structural elements and buildings, fire escapes.

UNIT 7:- Aesthetics (05)

c) The Nature of Architecture- Definition and Scope of the study.

d) The Aesthetic component of building, terms such as mass, space, proportion, Symmetry, balance, contract, pattern. Introduction to concept of Interior Designing and Landscaping.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

TERM WORK

(For all drawing work use full size sheets)

(C)Planning Designing of building project for which min. 3 Sheets to be drawn as shown below.

(a) Permission Drawing- 2 Sheets

(b) Furniture layout and Drainage layout – 1 Sheet.

(c) Perspective drawing of the above building.

(II)

(a) Drawing a perspective view of two small objects, total 2 exercises-1 sheet.

(D) One dimensional line plan for each type of building from unit no.2 (a to h) on full size graph sheets – total 4

(IV) Report on building project under (I) above.

Oral examination shall be based on Term Work.

Question paper shall have section of 40 marks devoted to drawing.

TEXT BOOKS

4. Building Construction: Arora and Bindra, Dhanpat Rai Publications
5. Building Design and Drawing – Y.S.Sane, Allies Book Stall
6. Principles of Perspective drawing- Shah, Kale, Patki, Tata Mc Graw Hill Publication Ltd, Delhi
7. Building Construction by Sushil Kumar, Standard Publishers Distributors, Delhi
8. Interior Design- Principles and Practice- M. Pratap Rao, Standard Publishers and Dist., Delhi
9. Building Planning and Design by Kumar Swami and Kameshwarrao, Charotar Publishing House.
10. Civil Engg. Drawing- by M. Chakraborty, Published by M Chakraborty – Kolkata
11. Civil Engineering Drawing – by R.S.Malik, G.S.Meo, Computech Publication Ltd New Asian

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

3. Building Construction by Mckay, W. B. & Mckay, J. M. , Vol.III and IV, Donhead Publishing Limited
4. Modern Building Construction by Warland D. E., Vol.I and II, Pitman Publishing
5. Building Drawing – Shah, Kale, Patki, Tata McGraw-Hill Education
6. Built Environment by Shah, Kale, Patki, Tata McGraw-Hill Education

4. Construction science – by Edwin Walker, Selwyn Morgan, Hutchinson Educational
5. Time savers standards for buildings – Calendar Pub. McGraw Hill
6. Alternative Building Materials & Technology-by Jagdish ,Reddy, Rao Published by New Age International, New Delhi
7. Nuclear Reactor Materials by C. Smith, Addison- Wesley Pub.
8. Art in everyday life by Goldstein, Oxford Pub.
9. Planning by E and OE – Pub. London Illiffe and Sons Ltd.
10. Inside Outside- Magazine issues.
11. Maintenance of Building- by A.C. Panchdhari, Published by New Age International, New Delhi.
12. Materials for Nuclear Power Reactors- by Hausner, Henry H. And Roboff, Stanley B., Reinhold Publishing Corp
13. Environment and services-by Peter Burberry, Mitchells Building Series
14. Development Control Rules- Building Byelaws of Local Authority.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART II

ENVIRONMENTAL ENGINEERING –II

Teaching Scheme

Lectures: 3 Hours per week
Practical: 2 Hours per week

Examination Scheme

Theory papers: 100 Marks
Term Work: 25 Marks
Oral Examination: 25 Marks

Course Objectives

3. To acquaint the students with the characterization of municipal waste, as well as sewage collection & conveyance systems.
4. Study of Primary and Secondary treatment methods of sewage, and concept of recycling the wastewater.
5. Familiarize the students with stream pollution due to waste disposal and suitable centralized/decentralized wastewater Treatment system
6. Learning solid waste and hazardous waste management systems for urban areas.
7. Understanding various sources of air pollution, its measurement and control.

Course Outcomes

Upon successful completion of course the student should be able to:

1. Plan the layout of sewage collection system, matching the topography of the region and characterisation of sewage.
2. Decide sequence and design of wastewater treatment units to meet the sewage treatment standards.
3. Design the wastewater treatment plant using Trickling filter, anaerobic treatment and low cost treatment methods
4. Adopt appropriate methods of Solid waste Disposal and Management of hazardous waste.
5. Measure air pollution and adopt control measures to control of industrial air pollution.

SECTION-I

Unit -1: Collection and conveyance of Sewage (08)

Components of wastewater flows, waste water sources and flow rate. Variation in flow rates, waste water constituents, Characteristics of municipal waste water, Quantity of storm water, Ground water infiltration.

Sewerage system, layout, types of sewers, collection system. Appurtenances Design of sanitary and storm water sewers, Maintenance of sewerage systems.

Sewage and sludge pumping, location, capacity and types of pumps, pumping station design.

Unit-2: Unit Operations (10)

Primary treatment - screening, comminuting, grit removal, oil and grease trap, chemical precipitation.

Secondary treatment – Activated sludge process, Process design and operating parameters, modification of ASP , operational problems .Trickling filter , classification , process design considerations . Secondary Clarifications.

Unit -3: Anaerobic treatment and Low cost treatment (06)

Fundamentals of anaerobic treatment, sludge characteristics, Treatment and disposal, Concept of different anaerobic reactors.

Low cost waste water treatment methods- Principle of waste stabilization pond.

Design and operation of oxidation pond, aerobic and anaerobic lagoons, Aerated lagoon, Oxidation ditch, septic tank.

Selection of alternative treatment process flow sheets. Concept of recycling of wastewater (gray water and brown water.)

SECTION-II

Unit-4: Disposal of waste water (08)

a) Disposal of waste water stream pollution, Self purification, DO sag curve, Streeter Phelp's Equation.

b) Emerging Technology for wastewater Treatment- Centralized Sewage Treatment System, objectives of small & decentralized wastewater Treatment system

Unit -5: Solid Waste Disposal (06)

Solid waste management – Solid waste definition, Types, sources, characteristics.

Functional outlines- storage, collection, processing techniques,

Methods of treatments of solid waste-Composting, Incineration, Pyrolysis and sanitary land filling. Concept of hazardous waste management.

Unit -6: Air Pollution (07)

Air Pollution- Definition, Sources and classification of pollutants, Effects. Introduction to meteorological aspects of control of industrial air pollution- Settling Chamber, Bag filter, Cyclone separator, Scrubbers, Electrostatic precipitators. Control of vehicular air pollution. Air quality standards

TERM WORK

The term work includes practical work to find the characteristics of wastewater and demonstration of Air monitoring equipments and design of sewage treatment plant

Term work shall consist of the following:-

(A) List of Experiments (Analysis of Waste Water)

1. pH Value.
2. Total Solids

3. Biochemical Oxygen Demand
4. Chemical Oxygen Demand
5. Chlorides
6. Oil & Grease
7. Sulphate Content
8. Total Nitrogen
9. Demonstration of High Volume Sampler
10. Demonstration of Auto Exhaust Analyzer.

(B) Design of sewerage system & Treatment system for a small urban area.

(C) Visit to sewage treatment plant

1. Journal containing experiments carried out in part A of the term work and visit Report on C
2. Detail design and appropriate drawings required for part B of the term work.

TEXT BOOKS

1. Environmental Engineering by Peavey- H. S. Rowe, D.R. and Thobanoglous, [McGraw – Hill Book Company]
2. Water supply and pollution control - Viessman W. and Hammer M.J. [Harper Collins College Publishers.]
3. Waste Water Engineering Treatment & Disposal - Mertcalf & Eddy, [Tata McGraw Hill, 1982]
4. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
5. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
6. Waste water Supply Engineering by B. C. Punmia
7. Solid Waste Management in Developing countries - Bhide A.D. and Sundersen B.B. [Indian National Scientific Documentation Centre, New Delhi]
8. Air Pollution- Rao M.N. and Rao H.V.N. [Tata Mcgraw Hill, 1990]

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1.Manual on sewerage & sewage Treatment published by Ministry of Urban Development Govt. of India Msy-2000. 35 PDOP-4-59-85-97,Ministry of Urban development

2.Water and waste water Technology - Hammer M.J, [Prentice-Hall of India Private ltd.]

3.Masters. G.M. Introduction to Environmental Engineering and Science

4.Manual on Municipal Solid Waste Management- Ministry of Urban Development Govt. of India.

Solapur University, Solapur

Faculty of Engineering & Technology, B.E. (Civil Engineering) Semester –VII, (Revised from 2015-16)

Credit System Structure of B. E. (Civil Engineering) Semester –VII, W. E. F. 2017-18

No	Theory Course Name	Hrs/week				Credits	Examination Scheme				Total
		L	*T*	*P*	*D*		*ISE*	*ESE*		*ICA*	
1	Design of Concrete Structures-I	3	-	-	-	3	30	70		-	**100**
2	Quantity Surveying & Valuation	3	-	-	-	3	30	70		-	**100**
3	Earthquake Engineering	3	-	-	-	3	30	70		-	**100**
4	Water Resources Engineering-II	3	-	-	-	3	30	70		-	**100**
5	Elective - I	3	-	-	-	3	30	70		-	**100**
	Total	**15**				**15**	**150**	**350**			**500**
	Laboratory/Drawings							**POE**	**OE**		
1	Design of Concrete Structures-I	-	1	-	-	1	-	-	-	25	**25**
2	Quantity Surveying & Valuation	-	-	4	-	2	-	50	-	50	**100**
3	Earthquake Engineering	-	-	2	-	1	-	-	-	25	**25**
4	Water Resources Engineering- II	-	-	2	-	1	-	-	25	25	**50**
5	Elective - I	-	-	2	-	1	-	-	25	25	**50**
6	Seminar	-	-	2	-	2	-	-	-	50	**50**
7	Project work	-	-	2	-	2	-	-	-	25	**25**
8	Assessment of report on field training-II	-	-	-	-	1	-	-		25	**25**
	Total		**1**	**14**		**11**		**50**	**50**	**250**	**350**
	Grand Total Semester-VII	**15**	**1**	**14**	**-**	**26**	**150**	**450**		**250**	**850**

• **Abbreviations –** L: Lecture, T: Tutorial, P: Lab Session, D: Drawing, ESE: End Semester Examination, ISE: In Semester Evaluation, ICA: Internal Continuous Assessment

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

w. e. f. Academic Year 2017-18

Solapur University, Solapur

Faculty of Engineering & Technology, B. E. (Civil Engineering) Semester –VIII, (Revised from 2015-16)

Credit System Structure of B. E. (Civil Engineering) Semester –VIII, W. E. F. 2017-18

No	Theory Course Name	Hrs/week				Credits	Examination Scheme				Total
		L	*T*	*P*	*D*		*ISE*	*ESE*		*ICA*	
1	Design of Concrete Structures-II	4	-	-	-	4	30	70		-	**100**
2	Construction Practices and Town Planning	4	-	-	-	4	30	70		-	**100**
3	Elective - II	3	-	-	-	3	30	70		-	**100**
4	Elective - III	3	-	-	-	3	30	70		-	**100**
	Total	**14**				**14**	**120**	**280**			**400**
	Laboratory/Drawings							**POE**	**OE**		
1	Design of Concrete Structures-II	-	-	2	-	1	-	-	-	25	**25**
2	Construction Practices and Town Planning	-	-	-	-	1	-	-	-	25	**25**
3	Elective - II	-	-	2	-	1	-	-	25	25	**50**
4	Elective - III	-	-	2	-	1	-	-	-	50	**50**
5	R. C. C. Structural Design & Drawing-II	-	-	-	4	2	-	-	50	50	**100**
6	Project work	-	-	6	-	4	-	-	100	100	**200**
	Total			**12**	**4**	**10**			**175**	**275**	**450**
	Grand Total Semester-VIII	**14**		**12**	**4**	**24**	**120**	**455**		**275**	**850**

•**Abbreviations –** L: Lecture, T: Tutorial, P: Lab Session, D: Drawing, ESE: End Semester Examination ISE: In Semester Evaluation, ICA: Internal Continuous Assessment

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

w. e. f. Academic Year 2017-18

B. E. (CIVIL) - LIST OF ELECTIVES

B. E. Civil Part-I		B. E. Civil Part-II			
ELECTIVE I		**ELECTIVE II**		**ELECTIVE III**	
5.1	Open Channel & River Hydraulics	3.1	Advanced Engineering Geology	4.1	Advanced Design of Steel Structures
5.2	Air Pollution & control	3.2	Ground improvement Techniques	4.2	Industrial Waste Treatment
5.3	Design of Foundations	3.3	Traffic Engineering & Control	4.3	Water Power Engineering
5.4	Advanced Design of Concrete Structures	3.4	Infrastructural Engineering	4.4	Advanced Concrete Technology
5.5	Managerial Techniques	3.5	Project Appraisal	4.5	Reliability Engineering
5.6	Computer Applications in Civil Engineering	3.6	Solid and Hazardous & Waste Management	4.6	Finite Element Method
5.7	Advanced structures	3.7	Dynamics of Structures	4.7	Experimental Stress Analysis
5.8	Entrepreneurship	3.8	Environmental Management	4.8	Optimization Techniques
5.9	Remote Sensing and GIS Applications	3.9	Design of Bridges	4.9	Disaster Management

w. e. f. Academic Year 2017-18

B.E. (CIVIL) PART - I

5. ELECTIVE- I

5.2 AIR POLLUTION AND CONTROL

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1. To study Sources, Causes & effects of Air Pollution.
2. To study the relation between Meteorology and Air Pollution.
3. To learn methods used for controlling air pollution.
4. To study Air pollution Prevention and legislation.

Course Outcomes:

On successful completion of this course the students will be able to

1. Identify the sources of air pollutants and their effect on human, plants and materials.
2. Apply knowledge of meteorology for controlling air pollution
3. Design of air pollution controlling equipments.
4. Use knowledge of legislation for prevention and control of air pollution.

SECTION –I

Unit 1: Introduction **(3)**

The Structure of the atmosphere, Composition of dry ambient air and properties of air. BIS Definition and scope of Air Pollution, Scales of air pollution, Types of exposures.

Unit 2: Air pollution sources **(5)**

Air Pollutants, Classifications, Natural and Artificial, Primary and Secondary, point and Non-Point, Line and Area Sources of air pollution. Stationary and mobile sources. composition of particulate & gaseous pollutant, units of measurement.

Unit 3: Effects of Air pollutants (6)

Effect of different air pollutants on man, animals, vegetation, property, aesthetic value and visibility, air pollution episodes. Global effects of air pollution- global warming, ozonedepletion, acid rain and heat island effect.

Unit 4: Meteorology and Air pollution (8)

Solar radiation, wind circulation, factors affecting dispersion of pollutants, Lapse rate, stability conditions, wind velocity profile, Maximum mixing depth (MMD), visibility, Wind rose diagram, General characteristics of stack plume (Plume behaviour). Gaussion diffusion model for finding ground level concentration. Plume rise. Formulae for stack height and determination of minimum stack height.

SECTION –II

Unit 5: Air sampling and analysis (5)

Air pollution survey, basis and statistical considerations of sampling sites, devices and methods used for sampling gases and particulates. Stack emission monitoring, isokinetic sampling. Analysis of air samples chemical and instrumental methods. Ambient air quality monitoring.

Unit 6: Photochemical smog, Odour pollution and Indoor pollution (6)

Chemistry of air pollution, Chain reactions of hydrocarbons, nitrogen oxide, Sulphuric oxides and intermediates, photochemical smog formation, air pollution indices -aerosols, fog, smog index.

Odour pollution: Theory, sources, measurement and methods of control of odour pollution. Indoor air pollution: Causes of air pollution, sources and effects of indoor air pollutants, changes in indoor air quality, control of indoor air pollutants and air cleaning systems.

Unit 7: Control of air pollution (8)

By process modification, change of raw materials, fuels, process equipment and process operation. By use of air pollution control equipment for particulate and gaseous pollutants. Design of control equipment as Settling chamber, Cyclone, Fabric filter, Electro static precipitator and Wet scrubber.

Unit 8: Control of gaseous pollutants and Legislation (4)

Principles of removal of gaseous pollutants, design of incineration, absorption adsorption systems. Control of air pollution from automobiles. Vehicular pollution, composition, quantity and control.

Air (Prevention and Control) Pollution Act, 1981.Emission standards for stationary and mobile sources. National Ambient air quality standards, 2009 (NAAQS).

TERM WORK

1. Assignments / problems on Air pollution.
2. Sampling and analysis of Ambient Air
3. Sampling and analysis of Automobile exhaust
4. Demonstration of stack gas monitoring

Viva/Oral examination will be based on above theory syllabus and term work

TEXT BOOKS:

i. Air pollution – Wark and Warner
ii. Air Pollution – Rao and Rao, TMH
iii. Environmental Engineering – by Peavy and Rowe, TMH.
iv. Air Pollution and Control- Murali Krishna, Jain Brothers

REFERENCE BOOKS:

i. Air pollution – Martin Crawford
ii. Air Pollution and Control Technologies- Y. Anjaneyulu, Allied Publishers
iii. Fundamentals of Air Pollution- Raju BSN, IBH Publisher
iv. An Introduction to Air Pollution- R. K. Trivedi and Goyal, BS Publications.

॥ विद्यया संपन्नता ॥

B.E. Civil (Part-I)

5. ELECTIVE – I

5.8 ENTREPRENEURSHIP

Teaching Scheme	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1. To familiarize the students with the concept of Entrepreneurship, Entrepreneur and Women Entrepreneur opportunities in the country.
2. Acquaint the student's innovative business ideas in emerging industrial scenario with 'small scale industries' policy resolutions.
3. Introduce the student's with finance and accounting aspects, Industrial and commercial tax laws AND marketing management of entrepreneurship.

Course outcomes:

By the end of the course the students should be able to

1) Exhibit skills necessary to craft strategies and initiatives which can enable growth and sustainability in an entrepreneurial venture.
2) Prepare preliminary and final project report
3) Exhibit higher-level critical thinking skills, evidenced by analysis, evaluation, and synthesis.
4) Demonstrate skills to establish and manage the accounting process, to employ break even and cost-volume-profit tools.

SECTION – I

Unit 1: **(08)**

Meaning, Definition and concept of Enterprise, Entrepreneurship and Entrepreneurship Development, Evolution of Entrepreneurship, risks involved with entrepreneurship, barriers to Entrepreneurship, Factors affecting entrepreneurial growth.

Entrepreneur, qualities of a successful entrepreneur, types of entrepreneurs (on basis of business, motivation, stages of development, entrepreneurial activity), functions of an entrepreneur, entrepreneurial competencies, types of entrepreneurial competencies. Concepts of Intrapreneurship, Entrepreneur v/s Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Role of Entrepreneurship in Economic Development, Factors affecting Entrepreneurship, Problems of Entrepreneurship. Creativity and Innovation, Innovation and Entrepreneurship.

Unit 2: **(06)**

Women Entrepreneurship:- Meaning, Characteristic features, Problems of Women Entrepreneurship in India, Developing Women Entrepreneurship in India, reasons for the slow growth of women entrepreneurship, remedies to solve the problems of women entrepreneurs. Measures taken for the development of women.

Entrepreneurship In India:- Training of Rural Youth For Self Employment, BANKS, NABARD, Industrial Policy, FICCI Ladies Organization (FLO), National Alliance of Young Entrepreneurs (NAYE).

Unit 3: **(08)**

Role of Government in promoting Entrepreneurship, MSME policy in India, Agencies for Policy Formulation and Implementation: District Industries Centres (DIC), Small Industries Service Institute (SISI),Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Financial Support System: Forms of Financial support, Long term and Short term financial support, Sources of Financial support, Development Financial Institutions, Investment Institutions. Finance, Institutional finance to Entrepreneurs, Preparation of Business Plans, Commercial Banks, Other financial institutions like IDBI,IFCI, ICICI, IRBI, LIC, UTI, SFCs, SIDCs, SIDBI, EXIM.

Bank Institution Support to Entrepreneurs: Need for Institutional support - Small Entrepreneurs: NSIC, SIDO, SSIB, SSICS, SISI, DICs, Industrial Estates Specialized Institutions.

SECTION – II

Unit 4: **(08)**

Finance Analysis and accountancy: Estimation of cost of project and means of financing, working capital requirement and its financing, estimates of working results working capital and fixed capital assessment incentives from financial institutions and government, financial ratios, their significance, break even analysis cash flow charts financial statements.

Unit 5: **(07)**

Project Report: Preliminary and final project report preparation, financial technical commercial and economic viability project implementation process project profiles.

Unit 6: **(08)**

Introduction to Marking, Market study, Goal sitting, Sale and Sales Promotion. Industrial and commercial tax laws (major features only), Risk and Risk analysis, goal setting and decision making, Communication skills development and barriers.

Note: The subject may be taught with respect to suitable case studies and industrial visits. Audio video films shall be used on the above topics.

TERM WORK

1. Preparation of preliminary and final project report of anyone small scale industry from civil Engineering field.
2. Report based on two industrial visits.

TEXT BOOKS:

1) Patterns of Entrepreneurship, Jack M. Kaplan Wiley Publications.
2) Planning and Industrial Unit, Jay Narayan Vyas, GranthVitran Shreyas, Opp. Jain Temple Near Navrangpura Bus Stop, Navrangpura
3) Financing an Industrial Unit, Jay Narayan Vyas and Dilip Patel,Granthvitaran Ahmedabad .
4) Entrepreneurship Development Vol. I, II & III, Vasant Desai, Himalaya Publishing house.

w. e. f. Academic Year 2017-18

REFERENCE BOOKS:

1) Entrepreneurship for the Nineties, Gordon B. Baty, Prentice Hall Inc. College Technical Reference by Granthvitaran.
2) Small Scale Industry Handbook, Jay Narayan Vyas, Granth Vitaran Ahmedabad
3) The Practice of Entrepreneurship, Geoffery G. Meredith R.E. Nelson and P. A. Neck, Published by International Labour Office, CH 1211, Geneva 22, Switzerland
4) Entrepreneurship Theory at Cross Road, Mathew J. Manimala, Biztantra publications.
5) Entrepreneurship and small business, WEBER, LEWIS, VOLERY, SCHAPER, Wiley publications.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –II

3. ELECTIVE II

3.6 SOLID AND HAZARDOUS WASTE MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1) To study the types, sources, generation of solid &hazardous waste.
2) To impart basic knowledge of collection, transportation, treatment and disposal of solid waste
3) To study handling and storage of solid and hazardous waste.

Course Outcomes:

Upon successful completion of course, the students will be able to:

1) Suggest waste reduction and resource recovery methods
2) Explain various waste disposal methods
3) Examine legal, political and administrative considerations in design and operation of solid and hazardous waste management

SECTION I

Solid Waste Management

Unit 1: **(06)**

Solid Waste management: Functional outlines of refuse, storage, transportation of refuse, analysis, composition and quantity of refuse, Economic aspects of refuse collection and transport.

Solid waste in industries, common types of solid waste, classification, collection and transportation. Concept of biomedical & Hazardous waste management.

Unit 2: **(05)**

Solid waste handling and Processing methods, Segregation and salvage recovery of bye-products, use of solid waste as raw material in industries. Recycling of solid waste.

Unit 3: **(06)**

Composting: Theory of composting, types of composting, factors governing composting, processing before composting, mechanical composting plant, and recovery of Bio –gas energy from organic solid waste.

Unit 4: **(06)**

Incineration: Theory and types of incinerators, location, planning aspects, effects of feed, composition, rate and temperature, air supply, design of incineration plant, pyrolysis and its by-products, energy recovery.

Solid waste management rules, status of solid waste management in India.

SECTION –II

Hazardous Waste Management

Unit 5: **(06)**

Definition of Hazardous waste, Characteristics and nature of hazards, natural and man- made hazards, classification of hazards.

Unit 6 : **(04)**

Qualitative estimation of damages, risk assessment and management.

Unit 7: **(06)**

Types of hazardous waste, characteristics, Site assessment waste minimization resource recovery. Strategy for minimization of damage due to natural and manmade hazards.

Unit 8: **(06)**

Storage and handling of hazardous waste, Site Selection, Transportation of hazardous wastes. Case Studies of hazards, episodes. Sanitary landfill site selection, types of land filling, maintenance and precaution, leachate and its control, control of contamination of ground water.

TERM WORK

1. Analysis of solid waste
2. Project on Design of Refuse collection & Disposal System for medium size town or a part of city.
3. Case study of Hazards and Episodes (Any Two).
4. Assignments (One Assignment on each unit)

TEXT BOOKS:

i) Solid Waste Management – Dr. A.D. Bhide

ii) Hazardous Waste Management – C. A. Wentz McGraw Hill International Edition

iii) Management of Municipal Solid Waste- T. V. Ramchandra, Capital Publishing company, New Delhi

iv) Solid and Hazardous Waste Management- M. N. Rao and Razia Sultana BS Publication

REFERENCE BOOKS:

i) Solid Waste Management – George Tchobanoglous, Mc Graw Publication

ii) Manual on Municipal Solid Waste management by ministry of Urban Development of Govt. of India.

iii) Solid Waste Management- I. H. Khan, and Naved Ahsan, CBS Publishers and Distributors, New Delhi.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

3. ELECTIVE II

3.8 ENVIRONMENTAL MANAGEMENT

Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 25 Marks
	ESE (OE) - 25 Marks

Course Objectives:

1) To study principles of Environmental Management System.
2) To acquaint students with different Environmental pollution control acts.
3) To study the electronic, biomedical and industrial waste properties and waste management systems
4) To inculcate idea of Environmental Impact Assessment.

Course outcomes:

Upon successful completion of course the students will be able to:

1) Demonstrate basic principles of Environmental Management System.
2) Explain different Environmental pollution control acts.
3) Select appropriate technology for management of electronic, biomedical and industrial waste
4) Perform Environmental Impact Assessment small project

SECTION-I

Unit 1: **(6)**

Fundamentals of environmental management system (EMS) and ISO 14000 series: History Background and development of ISO 14000, TC-207, ISO 14000series. Environmental management Plans- Principles and elements. The ISO 14001-Environmental management systems standard, Definitions, Eco labeling, Auditing

Unit 2: **(6)**

Environmental management acts related to environmental protection: Air, Water, Soil and Hazardous Waste. Detailed study of following acts - Water act 1974(Prevention and control of pollution), Air act 1981 (Air pollution prevention and control of pollution), Hazardous waste management handling rules -1989. Municipal solid waste rules- 2000, Noise pollution regulation and control rules 2000 **(7)**

Unit 3 : **(5)**

Electronic waste management: Objectives, Classification of E-waste, guidelines for environmentally sound management of E-waste, environmentally sound treatment technology for E-waste, guidelines for environmentally sound integrated E-waste recycling and treatment policy International scenario, hazardous substances that can occur in E-waste.

Unit 4: **(5)**

Biomedical waste management: Introduction, Classification, Types, segregation, packaging and transportation and storage, possible hazards, Effects, Detailed study of Biomedical waste management and handling rules 1998.

SECTION –II

Unit 5: **(4)**

Air pollution control:, Air quality standards, Air pollution control technologies for oxides of sulphur: Reducing SOx levels through dilution by increasing stack height, use of alternative fuels. Extraction of sulphur from fuels. Reduction of sulphur in combustion process, fuel gas desulfurization.

Air pollution control technologies for oxides of Nitrogen: Emission of nitrogen oxides. Control technologies for oxides of nitrogen emissions. Air pollution control technologies for volatile organics, Hydrocarbons and hydrogen sulphide.

Unit 6: **(5)**

Advanced waste water treatment: Carbon adsorption, Ion exchange, sodium and hydrogen cycle. Membrane process. Electro dialysis process, pressure membrane process and membrane performance characterization. Nutrients removal such as nitrogen and phosphorus removal.

Land treatment systems: Irrigation, rapid infiltration and overland flow systems. Wetland flow Systems.

Unit 7: **(7)**

Environmental Impact Management (EIA)

I) Definition, Objectives of EIA .EIA procedure in detail, Role of different actors in EIA, components of EIA, Areas of human concern (Impact categories), Contents of EIA, Categories of projects under EIA, Introduction to Impact assessment methods such as Leopold matrix Legal provision for public participation in India,

Role of general public in Environmental clearance. Limitations of EIA

II) The environmental rules 1999, sitting for industrial process, methodology for preparing environmental impact assessment, role of regulatory agencies and control boards in obtaining Environmental clearance for project.

III) **Case studies:-**Positive and negative environmental impacts of Dams, Express highways, Major industries, Power plants

Unit 8: **(7)**

Miscellaneous Topics

I) **Removal of Chromium:** General, control methods, reduction precipitation, Ion Exchange, RO, Lime coagulation and adsorption

II) **Removal of Mercury:** General, measurement of mercury, mercury losses in Chlor-Alkali industries, removal of mercury from gaseous streams, removal of Mercury through liquid streams.

III) **Treatment of phenolic effluents:** Introduction, sources of phenols, Treatment and removal.

TERM WORK

Term work shall consist of assignments on all above units and following chapters and one industrial visit report.

Oral examination shall be based on above term work.

w. e. f. Academic Year 2017-18

TEXT BOOKS:

1. Environmental engineering and management- Dhameja, Katson publications, Delhi
2. Air Pollution and control, K.V.S.G. Murli Krishna, Jain Brothers, Delhi
3. Water Management, K.V.S.G. Murli Krishna, Environmental Protection Soc., Kakinada

REFERENCE BOOKS:

1. Indian standards BIS
   - -IS/ISO 14001
   - - IS/ISO 14004
   - - IS/ISO 14011
   - - IS/ISO 14010
   - - IS/ISO 14012
2. Wastewater treatment and reuse- Metcalf and Eddy, TMG, Delhi
3. Pollution control in process industries- S. P. Mahajan, TMG, Delhi
4. Environmental science and engineering- Henry and Henke, PHI, New Delhi
5. For all environmental acts and updates - **http://www.envfor.nic.in**

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

4. ELECTIVE III

4.2 INDUSTRIAL WASTE TREATMENT

Teaching Scheme:	Examination Scheme:
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 50 Marks

Course Objectives:

1. To understand sources of waste water in different industries.
2. To study waste water treatment options for different industries.
3. To acquire knowledge about disposal of effluents and the standards for disposal

Course Outcomes:

On successful completion of this course the students will be able to:

1. Characterize different industrial wastes
2. Suggest treatment alternative based on characteristics of industrial waste.
3. Demonstrate basic knowledge of legislation for pollution control

SECTION -I

Unit 1: **(5)**

Use of water in industry, Sources of wastewater, quality, and quantity variation in waste discharge, water budgeting, characterization and monitoring of wastewater flow, Grab samples and Composite samples. Population equivalent, Relative stability and Theoretical oxygen demand. Water quality criteria and effluent standards. Introduction to water quality index (WQI), methods used.

Unit 2: **(7)**

Waste volume and strength reduction, In-Plant measure, good housekeeping, Process change, leakage prevention, segregation, recycling, neutralization, equalization and proportioning of waste. In line equalization, Side line equalization. Methods for determining volume of equalization tank.

Unit 3: **(7)** Water quality monitoring of streams, Self-purification of stream, Streeter Phelphs equation, Classification of streams. B.O.D. reaction rate - Method of least squares, Thomas method and Fuji mato method. D.O. Sag curve and D.O. deficit calculations.

Unit 4: **(4)**

Miscellaneous methods of dissolved solids removal- Ion-exchange, Electro dialysis, Reverse osmosis and Evaporation, Adsorption. Sludge disposal methods.

SECTION –II

Unit 5: **(4)**

Different types of waste treatment and their selections, Development of treatment flow diagram based on characteristics of waste. Pollution characteristics of common Industries.

Unit 6: **(9)**

Manufacturing processes in major industries, water requirements, wastewater sources, composition of wastes, Viz. Sugar, Distillery, Dairy, Pulps, Paper mill, Fertilizer, Tannery, Chemical, Steel Industry, power Plants, Textile Treatment flow sheets, alternative methods of treatment, factors affecting efficiency of treatment plant. Effect of above industrial wastes on receiving water bodies.

Unit 7: **(4)**

Introduction to the concept of zero discharge, Recycling and reuse and recovery Introduction to 3R principles to convert waste into wealth, Acclimatization of bacteria to toxic wastes, process sensitivity, operation and maintenance requirements.

Unit 8: **(5)**

Water pollution control act, organizational set up of central and state boards for water pollution control, classification of river on water use, minimal national standards, socioeconomic aspects of water pollution control.

Introduction to Wetland treatment – Root zone cleaning system. Introduction to green processes in the industries.

TERM WORK

1) Visit to any four of the following industries

i. Sugar industry

ii. Distillery industry

iii. Dairy industry

iv. Textile industry

v. Tannery

vi. Paper and Pulp

vii. Common effluent treatment plant (CETP)

Note: - Detailed visit report shall be prepared for each of the industrial visit

2) One assignment on each unit.

TEXT BOOKS:

1. Industrial Waste Treatment - Nelson Nemerow, Addison - Wesley
2. Industrial Waste Treatment – Rao & Datta, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Industrial Waste Water Treatment- Dr. A. D. Patwardhan, Prentice Hall of India

REFERENCE BOOKS:

1. Water and Waste Water Engg.- Fair G.M., Gayer J.C. and Okun D.A. , John Wiley Publication
2. Water and Waste Water Technology, M. J. Hammer and M. J. Hammer(Jr.)
3. Waste Water Engineering – Metcalf Eddy - Mc Graw Hill Publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

w. e. f. Academic Year 2017-18

B.E. Civil – Part II

4. ELECTIVE – III

4.9 DISASTER MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lectures – 3 Hrs/Week, 3 Credits	**ISE –** 30 Marks
Practical – 2 Hr/Week, 1 Credit	**ESE –**70 Marks
	ICA – 50 Marks

Course Objectives:

1) Study of various disasters, their characteristics, causes and impacts.
2) Acquaint with the various disaster management stages to prevent or reduce losses that occur due to hazards during disaster and emergencies.
3) Provide information regarding various programmes of International, National and State and District Level Agencies for disaster management.

Course Outcomes:

By the end of the course students should be able to

1) Apply various disaster preparedness, mitigation and management techniques.
2) Apply the Geo-informatics techniques for prepare hazard zonation maps for Disaster management.
3) Apply the various schemes and programmes of International, National and State and District Level Agencies for disaster management.

SECTION-I

Unit 1: **(08)**

Environmental Hazards and Disasters:-

Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress & Environmental Disasters. Different approaches & relation with human Ecology- Landscape Approach- Ecosystem Approach- Perception approach- Human ecology & its application in geographical researches.

Unit 2: **(08)**

Types of Environmental hazards and Disasters:-

Natural disaster and Planetary Hazards

Earthquake Hazards/ disasters- Introduction, general characteristics, mechanism, causes and effects of Earthquakes, prediction, seismic zones, seismic waves, vulnerability, damage potential – magnitude and intensity, Earthquake Hazards in India- Human adjustment, perception and mitigation of earthquake.

Volcanic Hazards/Disasters:- Volcanoes Causes of volcanism, volcanic materials, hazardous effects and impacts of volcanic eruptions.

Landslide and Land Degradation:- Causes, tectonic conditions, erosion, avalanches, rock fall, damage assessment. Landslide prone area in India.

Cyclones and Tsunamis:- Structure and nature of cyclones (Tropical cyclones & Local storms) & tsunamis, characteristics, hazard donation, factors, hazard potential, impact assessment. Cyclone prone areas in India.

Floods:- General characteristics, causes, Flood hazards India, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management (Human perception & mitigation).

Droughts:- Cause and Impacts of droughts- Drought hazards in India- Drought control measures.

Man-made Disaster and Extra Planetary Hazards/ Disasters

Man induced Hazards /Disasters-Physical hazards/ Disasters-Soil Erosion

Soil Erosion:- Mechanics & forms of Soil Erosion- Factors & causes of Soil Erosion, Conservation measures of Soil Erosion.

Mining:- Mining and environment, land & environment degradation and management, Mined land reclamation.

War and Chemicals disaster: - Release of toxic chemicals Hazardous wastes, reactivity, toxicity, nuclear war, biological weapons, armed conflicts, land mines etc.

Sedimentation processes: - Global Sedimentation problems, Regional Sedimentation problems. Sedimentation & Environmental problems- Corrective measures of Erosion & Sedimentation.

Biodiversity Extinction and Deforestation:- Biodiversity, species at risks, loss of biodiversity, management of species diversity, deforestation its causes & adverse effects.

Biological hazards/ disasters:- Population Explosion.

w. e. f. Academic Year 2017-18

Unit 3: **(06)**

Disaster Management:- Three Stages

Pre-disaster stage (Preparedness):- Introduction to disaster preparedness, Three A's of disaster preparedness, principles of disaster preparedness, steps in disaster preparedness, Preparing hazard zonation maps, Predictability/ Forecasting & warning, preparing disaster preparedness plan. Land use zoning- Preparedness through (IEC) Information, education and Communication. Disaster resistant house construction- Population reduction in vulnerable areas- Awareness.

Emergency stages: - Planning, mitigation, preparedness, response and recovery.

Post Disaster stage (Rehabilitation):- Physical and Social Infrastructure, Social and economic rehabilitation, Repair and retrofitting, Political Administrative Aspect.

SECTION-II

Unit 4: **(05)**

Natural Disaster Reduction and Management:- Provision of Immediate relief measures to disaster affected people-Prediction of Hazards & Disasters-Measures of adjustment to natural hazards.

Unit 5: **(09)**

Disaster Mitigation:-

Disaster Mitigation through Development: Disaster Mitigation: Basic Concepts, Meteorological and Seismological observation, Structured and Non Structured Mitigation, disaster mitigation strategies, importance of Information and Communication in Disaster Mitigation, Relationship between Disaster and Development, Sustainable Development for Disaster Mitigation, Importance of various Agencies/sectors involved for disaster mitigation.

Education on disasters -Community involvement, The adjustment of Human Population to Natural hazards & disasters. Role of database in Disaster Mitigation, GIS and GPS applications.

Role of Media

Monitoring Management- programme of disaster research and mitigation of disaster of following organizations. International Council for Scientific Unions (ICSU)-Scientific

committee on problems of the Environment (SCOPE), International Geosphere Biosphere programme (IGBP) – World federation of Engineering Organizations (WFED). National Academy of Sciences-World Meteorological organizations (WMO). Various U.N agencies like UNCRD, IDNDR, WHO, UNESCO, UNICEF, UNEP.

Unit 6: **(09)**

Agencies in Disaster Management

International Agencies: United Nations and its specialized agencies like UNDP, FAO, WHO AEC (Atomic Energy Commission), United Nations Disaster Management Cell, New Delhi. International Federation of Red Cross and Red Crescent Societies (IFRC) and National Red Cross/Red Crescent Societies.

National Agencies: Disaster Management Cell (Ministry of Home Affairs, Govt. of India), National Institute of Disaster Management, Indian Red Cross Society, Planning Commission, National Civil Defense Organization, Bharat Scouts and Guides. Military and Para-Military Forces; Corporate Bodies etc.

State and District Level Agencies: Disaster Management cells at state level and District level, District Magistrate office, Role and Responsibilities of DM in prevention, preparedness, mitigation, relief and rehabilitation; local bodies and role of different functionaries-

TERM WORK

1. Practical exercise on each unit
2. Each student will be required to prepare a project work of Coastal Ecosystem, Desert Eco System and Mountain Eco System & submit it at the end of year & this will be evaluated by an internal as well as external examination

TEXT BOOKS:-

1. The Environment as Hazards, Kates, B.I& White, G.F, Oxford, New York, 1978
2. Disaster Management, R.B. Singh, Rawat Publication, New Delhi, 2000.
3. Disaster Management H.K. Gupta, Universities Press, India, 2003.
4. Space Technology for Disaster Mitigation in India (INCED), R.B. Singh, University of Tokyo, 1994.
5. Disaster Management in Hills, Dr. Satender, Concept Publishing Co., New Delhi, 2003.
6. Plan for Earthquake, Disaster, Mitigation, Disaster Management, A.S. Arya, V.K.

Sharma, Action IIPA Publication New Delhi, 1994.
7. An overview on Natural and Man-made Disaster & their Reduction, R.K. Bhandani, SIR, New Delhi.
8. Disaster Mitigation, Preparedness, Recovery and Response, P. C. Sinha, SBS Publishers and Distributors Pvt. Ltd.
9. Introduction to International Disaster Management, D. P. Coppola, Butterworth-Heinemann.
10. Disaster Management M. Sharma, Vinod K., NCDM, IIPA, New Delhi, 1994
11. Housing in Disaster prone areas, National Building Organization and U.N. Regional Centre, Mathur G.C., ESCAP, New Delhi, 1986.
12. Disaster Management, Dr. Mrinalini Pandey, Wiley Publication.

REFERENCE BOOKS:-

1. Disaster Management in India – A Status Repot, National Disaster Management Division, Ministry of Home Affairs, Govt. of India, 2004.
2. Disaster Management and Preparedness, Collins Larry R. and Scheind Thomas D. (2000)., Taylor and Francis, 2000.
3. Disaster Management, Sharma V.K., Indian Institute of Public Administration, New Delhi, 1995.
4. National Disaster Response Plan, NCDM, New Delhi, 2001.
5. Manuals on Natural Disaster management in India, M.C. Gupta, National Centre for Disaster Management, IIPA, New Delhi, 2001.
6. Management of Floods, National Disaster Management Authority, Government of India.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Academic Year 2015-16

S.E
New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S. E. Civil-II, W. E.F. 2015-2016; Semester -II

Theory Course Name	Hrs./week				Credits	Examination Scheme				
	L	T	P	D		ISE	ESE		ICA	Total
Structural Mechanics-II	3	1	-	-	4	30	70		25	125
Surveying –II	3	-	-	-	3	30	70		-	100
Building Construction & Design	3	-	-	-	3	30	70		-	100
Fluid Mechanics-II	3	-	-	-	3	30	70		-	100
Water Resources Engg.I	3	-	-	-	3	30	70		25	125
Engg. Math-III	3	1	-	-	4	30	70		25	125
Total	**18**	**2**	**-**	**-**	**20**	**180**	**420**		**75**	**675**
Laboratory/Drawings:							**POE**	**OE**		
Surveying –II	-	-	2	-	1	-	-	25	25	50
Building Construction & Design	-	-	-	2	1	-	-	25	25	50
Fluid Mechanics-II	-	-	2	-	1	-	-	-	25	25
Computer Programming & Numerical Methods	2	-	2	-	3	-	25	-	25	50
Total	**2**	**-**	**6**	**2**	**6**	**-**	**25**	**50**	**100**	**175**
Grand Total	**20**	**2**	**6**	**2**	**26**	**180**	**495**		**175**	**850**
Environmental Science	**1**	–	–		–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

(1) The number of students in a Practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

S.E
New [CGPA]

SOLAPUR UNIVERSITY, SOLAPUR

Faculty of Engineering & Technology (Revised from 2013-2014)

Credit System structure of S. E. Civil- I, W. E. F. 2015-2016; Semester- I

Theory Course Name	Hrs./week				Credits	Examination Scheme			
	L	T	P	D		ISE	ESE	ICA	Total
Concrete Technology	2	-	-	-	2	30	70	-	100
Structural Mechanics-I	3	-	-	-	3	30	70	-	100
Surveying –I	3	-	-	-	3	30	70	-	100
Building Construction & Drawing	3	-	-	-	3	30	70	-	100
Fluid Mechanics-I	3	-	-	-	3	30	70	-	100
Engg. Geology	3	-	-	-	3	30	70	-	100
Total	**17**		–		**17**	**180**	**420**	**-**	**600**
Laboratory/Drawings							**POE**	**OE**	
Concrete Technology	-	-	2	-	1	-	-	-	25	25
Structural Mechanics-I	-	-	2	-	1	-	-	-	25	25
Surveying –I	-	-	2	-	1	-	25	-	25	50
Building Construction& Drawing	-	-	-	2	1	-	-	-	25	25
Fluid Mechanics-I	-	-	2	-	1	-	25	-	25	50
Engg. Geology	-	-	2	-	1	-	25	-	25	50
Lab. Practice	-	-	2*	-	0.5	-	-	-	25	25
Total	**-**	**-**	**11**	**2**	**6.5**	–	**75**		**175**	**250**
Grand Total	**17**	**-**	**11**	**2**	**23.5**	**180**	**495**		**175**	**850**
Environmental Science	**1**	–	–		–	–	–		–	–

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing. *- Alternate week, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

Note:

(1) The number of students in a practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Solapur University, Solapur
Structure of T.E. (Civil Engineering) Semester -V

T.E. (Civil Engineering) Semester –V

Sr. No.	Subject	Teaching/Week					Examination scheme				
		L	Pr.	Tu.	Dr.	Total	Theory	TW	POE	OE	Total
1	Design of Steel Structures	3	2	-	-	5	100	25	-	-	125
2	Geotechnical Engg.I	3	2	-	-	5	100	25	25	-	150
3	Building Planning & Design	3	-	-	4	7	100	25	-	25	150
4	Environmental Engg.I	3	2	-	-	5	100	25	-	-	125
5	Engineering Management- I	3	-	-	-	3	100	25	-	-	125
6	Transportation Engg.-I	3	2	-	-	5	100	25	-	-	125
7	Self Learning (H.S.S. course)	-	-	-	-	-	50	-	-	-	50
Total		18	8		4	30	600	200	25	25	**850**

Note:

(1) Students shall undergo a field training of 15 days in the winter vacation after T.E. Part I and submit the field training report, which shall be assessed by faculty associated with Engineering Management- II in T.E. Part II.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

(3) Syllabus of Self learning (H.S.S.) is common for all Under Graduate Programs under Faculty of Engineering and Technology.

T.E. (Civil Engineering) Semester –VI

Sr. No.	Subject	Teaching/Week					Examination scheme				
		L	Pr.	Tu.	Dr.	Total	Theory	TW	POE	OE	Total
1	Structural Mechanics-III	4	2	-	-	6	100	25	-	-	125
2	Geotechnical Engg.II	4	2	-	-	6	100	25	-	-	125
3	Environmental Engg.II	3	2	-	-	5	100	25	-	25	150
4	Engineering Management- II	4	2	-	-	6	100	25	-	25	150
5	Transportation Engg.-II	3	-	-	-	3	100	25	-	-	125
6	Steel Structural Design & Drawing	-	-	-	4	4	-	50	-	25	75
7	Mini project (Any subject in Civil Engg.)	-	-	-	-	-	-	25	-	-	25
8	Assessment of field training report	-	-	-	-	-	-	25	-	-	25
9	Self Learning (Technical course)	-	-	-	-	-	50	-	-	-	50
Total		18	8	-	4	30	500	275	-	75	**850**

Note:

(1) Students shall undergo a field training of 15 days in the summer vacation after T.E. Part II. The training report shall be assessed in B.E. Part -I by the concerned project guides.

(2) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7 students, then a new batch be formed.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

Solapur University Solapur

List of Self Learning- H.S.S. courses, common for all the branches of Engineering and Technology at Third Year Engineering (Semester-V)

The student will opt for any one of the following course

1) Economics
2) Intellectual Property Rights for Technology Development and Management
3) Introduction to Sociology
4) Stress and Coping
5) Professional Ethics & Human Values

Third Year Engineering (Semester V)ECONOMICS

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

SECTION I

Unit 1: Introduction.

History of Economic thought, Basic Economic problems, Resource Constraints and Welfare maximization,

Nature of Economics: Positive and Normative Economics, Micro and Macro Economics, Basic concepts in Economics, The role of State in economic activity, Market and Government failures, New economic Policy in India.

Unit 2: Theories of Economics

Theory of utility and consumer's choice, Theories of Demand, supply and market equilibrium, Theories of firm, production and costs, Market structures, Perfect and imperfect competitions, oligopoly, monopoly.

Unit 3: Macroeconomics

An overview of Macroeconomics, measurement and determination of national income, Consumption, saving and investment.

Unit 4: Banking & Inflation.

Commercial and Central Banking, Relationship between money, output and prices. Inflation

causes, consequences and remedies.

Unit 5: International Influences on Economics

International Trade, foreign exchange and balance payments, stabilization policies, Monetary, Fiscal and exchange rate policies.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

1. Economics : P.A. samuelson & W.D Nordhaus (Mc. Graw Hill, New York, 1995.)
2. Modern Microeconomics : A. Koutsoyiannis (Macmillan,1975)

REFERENCE BOOKS

1. Microeconomics : R Pindyck and D.L. Rubinfield. (Macmillan New York, 1989

2. Microeconomics : Gordon, 4th edition, Little Brown & Co., Boston,1987.

3. The Organization of Industry: William F. Shughart II, Richard D. Irwin, Illinois, 1990.

Third Year Engineering (Semester V)

INTELLECTUAL PROPERTY RIGHTS FOR TECHNOLOGY DEVELOPMENT AND MANAGEMENT

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Dynamics of Knowledge evolution, creation of ownership domains in the knowledge space using various instruments of IPR,

Unit 2.

Outlines concepts of confidentiality and information security, explores their role in technology development and transfer integrating Intellectual Property in project planning, execution & commercialization,

Unit 3.

Discussion on the shifting paradigms of R&D and their linkage to IPR, Introduction to concepts of Valuation of IP & Value Realization,

Unit 4.

Comparison the Indian IPR system with international IPR frameworks especially in the context of WTO, followed by a few sessions on IPR litigations both for the enforcement of rights and business strategy.

Unit 5.

Discussion on contentious issues of current interest such as Biotechnology and Intellectual Property, Protection of Traditional Knowledge, IPR and Electronic Commerce, TRIPS and Access to Medicines, Copyright issues in creative works, etc.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.
(One assignment for every unit of the syllabus)
In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Prabuddha Ganguli: Intellectual Property Rights Unleashing the Knowledge Economy. Tata McGraw Hill, New Delhi, 2001.
2. Prabuddha Ganguli: Gearing Up for Patents The Indian Scenario. Universities Press India Ltd., Hyderabad, 1998.
3. P. Narayan: Patent Law. Eastern Law Co., Calcutta.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Global Dimensions of Intellectual Property Rights in Science and Technology, Author: National Research Council , National Academies Press,1993.
2. Technology Transfer: Intellectual Property Rights, C Sri Krishna, ICFAI University press (2008)

Third Year Engineering (Semester V)

INTRODUCTION TO SOCIOLOGY

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change.

Social stratification - various approaches and concept of social mobility.

Unit 2.

Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world.

Unit 3.

Major social institutions - Family and marriage, caste and tribe and organizations:

i. Formal organization (bureaucracy)

ii. Informal organization.

Unit 4.

Processes of social change- Modernization (including Sanskritization), industrialization, environmental/ecological changes and development.

Unit 5.

Social movements - protest movements, reformist movement and radical movements in India.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Sociology, L. Broom, P. Selznick and D. Dorrock, , 11th Edn. 1990 (Harper International).
2. Sociology: Themes and Perspectives , M. Haralambos, Oxford University Press, 1980.
3. General Introduction to Sociology, Guy Rocher, A. , MacMillan, 1982.

REFERENCE BOOKS

1. Social movements in India, vols. 1-2, 1984, M.S.A. Rao, Manohar Publications.
2. Society in India, David Mandelbaum, , 1990, Popular Publications.
3. Social change in modern India, M.N. Srinivas, 1991, Orient Longman Publications.

Third Year Engineering (Semester V)

STRESS AND COPING

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1.

Concept of stress-current and historical status. The nature of the stress response.

Unit 2

Common sources of stress biological, personality and environmental.

Unit 3.

Coping styles defensive behaviors and problem-solving. Consequences of stress - medical, psychological and behavioral.

Unit 4.

The role of social support in mitigating stress.

Unit 5.

Stress management techniques-relaxation, meditation, cognitive restructuring, self-control, bio-feedback and time management.
The students will prepare their stress profile.

ASSIGNMENTS

The term work will consist of total five assignments, based on syllabus.

(One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Walt, S. "Stress Management for Wellness". Harcourt Brace & Jovanovich, N.York, 1994.
2. D. Girdano and G. Everly., "Controlling Stress and Tension", Prentice-Hall, 1986.
3. Monat and R. Lazarus, "Stress and Coping: An Anthology", Columbia Univ. Press, 1985.

REFERENCE BOOKS

1. Weisman, "The Coping Capacity", Human Services Press, 1984.
2. Stress and Coping: The Indian Experience, D.M. Pestonjee, SAGE India; Second edition (1998)

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

Third Year Engineering (Semester V)

PROFESSIONAL ETHICS & HUMAN VALUES

(Self Learning- H.S.S. course, common for all the branches of Engineering and Technology)

Examination Scheme:

Theory paper: 50 marks

(Duration 2 Hours)

Unit 1. Human Values

Morals, Values and Ethics - Integrity, - Work Ethics - Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - sharing - Honesty - Courage - Valuing Time - Cooperation - Commitment - Empathy – Self-Confidence - Character - spirituality

Unit 2. Engineering Ethics

Senses of engineering ethics - Variety of Moral Issues - Types of inquiry - Moral Dilemmas Moral Autonomy - Kohlberg's Theory - Gilligan's Theory - Consensus and Controversy - Models of Professional Roles - Theories about Right Action - Self-Interest - Customs and Religion .

Unit 3. Safety, Responsibilities and Rights

Safety and Risk - Assessment of safety and Risk - Risk Benefit Analysis and Reducing Risk - The Three Mile Island. and Chernobyl Case Studies.

Collegiality and Loyalty - Respect for Authority - Collective Bargaining - Confidentiality - Conflicts of Interest - Occupational Crime - Whistle Blowing - Professional Rights – Employee Rights - Intellectual Property Rights (IPR) – Discrimination

Unit 4. Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics - Weapons Development - Engineers as Managers - Consulting Engineers - Engineers as Expert Witnesses and Advisors - Sample Code of Ethics of ASME, ASCE, IEEE, Institution of Engineers (India), etc.

ASSIGNMENTS

The term work will consist of total four assignments, based on syllabus. (One assignment for every unit of the syllabus)

In addition to the above, the institute may prescribe additional modes of assessment such as Unit test, Quiz, Presentation, Course seminar etc. for ensuring continuous assessment of the students.

Note: Term will be granted only on satisfactory completion of assignments during stipulated period. The student will be detained in case of non-completion/non-submission of the term work.

TEXT BOOKS

1. Bayles, M.D.: Professional Ethics, California: Wadsworth Publishing Company, 1981.
2. Koehn, D.: The Ground of Professional Ethics, Routledge, 1995.
3. R.S. Naagarazan, A Text Book of Professional Ethics & Human Values, New Age International, 2006

REFERENCE BOOKS

1. Camenisch, P.F.: Grounding Professional Ethics in a Pluralistic Society, N.Y.: Haven Publications, 1983.
2. Wuest, D.E. : Professional Ethics and Social Responsibility, Rowman & Littlefield, 1994.

T.E. (CIVIL ENGINEERING) PART- I

BUILDING PLANNING & DESIGN

Teaching Scheme:

Lectures: 3 hours per week
Drawing: 4 hours per week

Examination Scheme

Theory paper: 100 marks
Term work: 25 marks
Oral Exam: 25 Marks

Course Objectives

1. To acquaint the students with of various types of public buildings and their functional requirements.
2. Study of principles of planning and design of public buildings with special reference to aesthetics, acoustics and fire fighting.
3. To emphasize the various aspects of the 'Green Building' design considerations and their adoption in public building planning.
4. To inculcate the knowledge and skills of preparing municipal building permission drawings for the public buildings.

Course Outcomes

1. The students will be able to plan and design a public building according to requirements adhering to appropriate norms and standards.
2. The students will be able to prepare 'Municipal drawing' for public buildings for obtaining building permission from competent authority.
3. The students will be able to incorporate Green Building Design principles while designing public buildings.
4. The students will be able prepare the building drawings by using suitable 'Computer Aided Drawing and Design' application software.

SECTION-I

Unit 1:- Dimension Relationships **(03)**

Dimensions & Space requirement in relation to body measurements. Space design for passage between walls, service access, stairs, ramps, elevators.

Unit 2:- Planning and Design of Public Buildings **(16)**

Planning and Design, Site Selection, site layout for various types of building such as:

a) Educational Building: Younger age range, Middle age range, older age range, School for mentally retarded.

b) Building for health – Sanatorium, Hospitals.

c) Assembly buildings - Recreation Hall, Community hall, Cinema theaters, Gymnasiums, Restaurant, Temples, Dance hall, Clubs.

d) Business and Mercantile building – Shops, banks, markets, & departmental stores

e) Industrial Buildings: Factories, Warehouses

f) Office and Other building: Post office, Administrative building etc.

g) Building for transportations – Bus Station, Truck Terminals

h) Computers centres, Service Centre for communication and electronic media

Unit 3:- Perspective **(04)**

Elements of perspective drawings, parallel perspective and angular perspective.

SECTION-II

Unit 4:- Green Buildings and Cad **(06)**

a) Computer aided design and drawing, Development of plan, Elevation and Section.

b) Concepts of Green Building and energy efficient buildings.

UNIT 5:- Acoustic Sound Insulation **(06)**

a) Acoustic- Sound Frequency, Intensity, sound decibel rating, absorption of sound-Various materials. Sabine's formula, optimum reverberation time, conditions for good acoustics, effect of reflectors, flat ceiling, design of an auditorium, defects in auditorium and remedies, acoustics of various buildings such as Auditorium hall, Classrooms, broadcasting room etc.

b) Sound insulation: Acceptable noise level – Noise prevention at its source, transmission of noise, Noise control- general Consideration.

UNIT 6:- Fire Resistant Structures **(05)**

Fire resistant Structures - Fire protection precautions, confining of fire, Fire hazards, characteristics of fire resistant material, various building material and resistance for fire, Fire resisting construction, fire load- Normal and abnormal, distribution of fire load, grading of structural elements and buildings, fire escapes.

UNIT 7:- Aesthetics **(05)**

a) The Nature of Architecture- Definition and Scope of the study.

b) The Aesthetic component of building, terms such as mass, space, proportion, Symmetry, balance, contract, pattern. Introduction to concept of Interior Designing and Landscaping.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

TERM WORK

(For all drawing work use full size sheets)

(I) Planning Designing of building project for which min. 3 Sheets to be drawn as shown below.

(a) Permission Drawing- 2 Sheets

(b) Furniture layout and Drainage layout – 1 Sheet.

(c) Perspective drawing of the above building.

(II)

(a) Drawing a perspective view of two small objects, total 2 exercises-1 sheet.

(III) One dimensional line plan for each type of building from unit no.2 (a to h) on full size graph sheets – total 4

(IV) Report on building project under (I) above.

Oral examination shall be based on Term Work.

Question paper shall have section of 40 marks devoted to drawing.

TEXT BOOKS

1. Building Construction: Arora and Bindra, Dhanpat Rai Publications
2. Building Design and Drawing – Y.S.Sane, Allies Book Stall
3. Principles of Perspective drawing- Shah, Kale, Patki, Tata Mc Graw Hill Publication Ltd, Delhi
4. Building Construction by Sushil Kumar, Standard Publishers Distributors, Delhi
5. Interior Design- Principles and Practice- M. Pratap Rao, Standard Publishers and Dist., Delhi
6. Building Planning and Design by Kumar Swami and Kameshwarrao, Charotar Publishing House.
7. Civil Engg. Drawing- by M. Chakraborty, Published by M Chakraborty – Kolkata
8. Civil Engineering Drawing – by R.S.Malik, G.S.Meo, Computech Publication Ltd New Asian

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

REFERENCE BOOKS

1. Building Construction by Mckay, W. B. & Mckay, J. M. , Vol.III and IV, Donhead Publishing Limited
2. Modern Building Construction by Warland D. E., Vol.I and II, Pitman Publishing
3. Building Drawing – Shah, Kale, Patki, Tata McGraw-Hill Education
4. Built Environment by Shah, Kale, Patki, Tata McGraw-Hill Education

5. Construction science – by Edwin Walker, Selwyn Morgan, Hutchinson Educational
6. Time savers standards for buildings – Calendar Pub. McGraw Hill
7. Alternative Building Materials & Technology-by Jagdish ,Reddy, Rao Published by New Age International, New Delhi
8. Nuclear Reactor Materials by C. Smith, Addison- Wesley Pub.
9. Art in everyday life by Goldstein, Oxford Pub.
10. Planning by E and OE – Pub. London Illiffe and Sons Ltd.
11. Inside Outside- Magazine issues.
12. Maintenance of Building- by A.C. Panchdhari, Published by New Age International, New Delhi.
13. Materials for Nuclear Power Reactors- by Hausner, Henry H. And Roboff, Stanley B., Reinhold Publishing Corp
14. Environment and services-by Peter Burberry, Mitchells Building Series
15. Development Control Rules- Building Byelaws of Local Authority.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

T.E. (CIVIL ENGINEERING) PART II

ENVIRONMENTAL ENGINEERING –II

Teaching Scheme

Lectures: 3 Hours per week
Practical: 2 Hours per week

Examination Scheme

Theory papers: 100 Marks
Term Work: 25 Marks
Oral Examination: 25 Marks

Course Objectives

1. To acquaint the students with the characterization of municipal waste, as well as sewage collection & conveyance systems.
2. Study of Primary and Secondary treatment methods of sewage, and concept of recycling the wastewater.
3. Familiarize the students with stream pollution due to waste disposal and suitable centralized/decentralized wastewater Treatment system
4. Learning solid waste and hazardous waste management systems for urban areas.
5. Understanding various sources of air pollution, its measurement and control.

Course Outcomes

Upon successful completion of course the student should be able to:

1. Plan the layout of sewage collection system, matching the topography of the region and characterisation of sewage.
2. Decide sequence and design of wastewater treatment units to meet the sewage treatment standards.
3. Design the wastewater treatment plant using Trickling filter, anaerobic treatment and low cost treatment methods
4. Adopt appropriate methods of Solid waste Disposal and Management of hazardous waste.
5. Measure air pollution and adopt control measures to control of industrial air pollution.

SECTION-I

Unit -1: Collection and conveyance of Sewage **(08)**

Components of wastewater flows, waste water sources and flow rate. Variation in flow rates, waste water constituents, Characteristics of municipal waste water, Quantity of storm water, Ground water infiltration.

Sewerage system, layout, types of sewers, collection system. Appurtenances Design of sanitary and storm water sewers, Maintenance of sewerage systems.

Sewage and sludge pumping, location, capacity and types of pumps, pumping station design.

Unit-2: Unit Operations **(10)**

Primary treatment - screening, comminuting, grit removal, oil and grease trap, chemical precipitation.

Secondary treatment – Activated sludge process, Process design and operating parameters, modification of ASP , operational problems .Trickling filter , classification , process design considerations . Secondary Clarifications.

Unit -3: Anaerobic treatment and Low cost treatment **(06)**

Fundamentals of anaerobic treatment, sludge characteristics, Treatment and disposal, Concept of different anaerobic reactors.

Low cost waste water treatment methods- Principle of waste stabilization pond.

Design and operation of oxidation pond, aerobic and anaerobic lagoons, Aerated lagoon, Oxidation ditch, septic tank.

Selection of alternative treatment process flow sheets. Concept of recycling of wastewater (gray water and brown water.)

SECTION-II

Unit-4: Disposal of waste water **(08)**

a) Disposal of waste water stream pollution, Self purification, DO sag curve, Streeter Phelp's Equation.

b) Emerging Technology for wastewater Treatment- Centralized Sewage Treatment System, objectives of small & decentralized wastewater Treatment system

Unit -5: Solid Waste Disposal **(06)**

Solid waste management – Solid waste definition, Types, sources, characteristics.
Functional outlines- storage, collection, processing techniques,
Methods of treatments of solid waste-Composting, Incineration, Pyrolysis and sanitary land filling. Concept of hazardous waste management.

Unit -6: Air Pollution **(07)**

Air Pollution- Definition, Sources and classification of pollutants, Effects. Introduction to meteorological aspects of control of industrial air pollution- Settling Chamber, Bag filter, Cyclone separator, Scrubbers, Electrostatic precipitators. Control of vehicular air pollution. Air quality standards

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

TERM WORK

The term work includes practical work to find the characteristics of wastewater and demonstration of Air monitoring equipments and design of sewage treatment plant

Term work shall consist of the following:-

(A) List of Experiments (Analysis of Waste Water)

1. pH Value.
2. Total Solids

3. Biochemical Oxygen Demand
4. Chemical Oxygen Demand
5. Chlorides
6. Oil & Grease
7. Sulphate Content
8. Total Nitrogen
9. Demonstration of High Volume Sampler
10. Demonstration of Auto Exhaust Analyzer.

(B) Design of sewerage system & Treatment system for a small urban area.

(C) Visit to sewage treatment plant

Term work submission shall consist of the following –

1. Journal containing experiments carried out in part A of the term work and visit Report on C
2. Detail design and appropriate drawings required for part B of the term work.

TEXT BOOKS

1. Environmental Engineering by Peavey- H. S. Rowe, D.R. and Thobanoglous, [McGraw – Hill Book Company]
2. Water supply and pollution control - Viessman W. and Hammer M.J. [Harper Collins College Publishers.]
3. Waste Water Engineering Treatment & Disposal - Mertcalf & Eddy, [Tata McGraw Hill, 1982]
4. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
5. Sewage Disposal and Air Pollution Engineering - Garg S.K., [Khanna Publishers]
6. Waste water Supply Engineering by B. C. Punmia
7. Solid Waste Management in Developing countries - Bhide A.D. and Sundersen B.B. [Indian National Scientific Documentation Centre, New Delhi]
8. Air Pollution- Rao M.N. and Rao H.V.N. [Tata Mcgraw Hill, 1990]

REFERENCE BOOKS

1. Manual on sewerage & sewage Treatment published by Ministry of Urban Development Govt. of India Msy-2000. 35 PDOP-4-59-85-97,Ministry of Urban development
2. Water and waste water Technology - Hammer M.J, [Prentice-Hall of India Private ltd.]
3. Masters. G.M. Introduction to Environmental Engineering and Science
4. Manual on Municipal Solid Waste Management- Ministry of Urban Development Govt. of India.

Solapur University, Solapur
Structure of B .E. (Civil Engineering)
w. e. f. Academic Year 2015-16.

B.E. (Civil Engineering) Semester –VII

Sr. No.	Subject	Teaching/Week					Examination scheme				
		L	Pr.	Tu.	Dr.	Total	Theory	TW	POE	OE	Total
1	Design of Concrete Structures-I	3	-	1	-	4	100	25	-	-	125
2	Quantity Surveying & Valuation	3	4	-	-	7	100	50	50	-	200
3	Earthquake Engg.	3	2	-	-	5	100	25	-	-	125
4	Water Resources Engg. II	3	2	-	-	5	100	25	-	25	150
5	Elective - I	3	2	-	-	5	100	25	-	25	150
6	Seminar	-	2	-	-	2	-	50	-	-	50
7	a) Project work b) Assessment of report on field training-II	-	2	-	-	2	-	25 25	-	-	25 25
Total		15	14	1	-	30	500	250	50	50	850

B.E. (Civil Engineering) Semester –VIII

Sr. No.	Subject	Teaching/Week					Examination scheme				
		L	Pr.	Tu.	Dr.	Total	Theory	TW	POE	OE	Total
1	Design of Concrete Structures-II	4	2	-	-	6	100	25	-	-	125
2	Construction Practices and Town Planning	4	-	-	-	4	100	25	-	-	125
3	Elective - II	3	2	-	-	5	100	25	-	25	150
4	Elective - III	3	2	-	-	5	100	50	-		150
5	R. C. C. Structural Design & Drawing-II	-	-	-	4	4	-	50	-	50	100
6	Project work	-	6	-	-	6	-	100	-	100	200
Total		14	12	-	4	30	400	275	-	175	850

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the Performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

B. E. (CIVIL) - LIST OF ELECTIVES

B. E. Civil Part-I		B. E. Civil Part-II			
ELECTIVE I		**ELECTIVE II**		**ELECTIVE III**	
5.1	Open Channel & River Hydraulics	3.1	Advanced Engg. Geology	4.1	Advanced Design of Steel Structures
5.2	Air Pollution & control	3.2	Ground improvement Techniques	4.2	Industrial Waste Treatment
5.3	Design of Foundations	3.3	Traffic Engg. & Control	4.3	Water Power Engg.
5.4	Advanced Design of Concrete Structures	3.4	Infrastructural Engineering	4.4	Advanced Concrete Technology
5.5	Managerial Techniques	3.5	Project Appraisal	4.5	Reliability Engg.
5.6	Computer Applications in Civil Engg	3.6	Solid and Hazardous & Waste Management	4.6	Finite Element Method
5.7	Advanced structures	3.7	Dynamics of Structures	4.7	Experimental Stress Analysis
5.8	Entrepreneurship	3.8	Environmental Management	4.8	Optimization Techniques
5.9	Remote Sensing and GIS Applications	3.9	Design of Bridges	4.9	Disaster Management

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART - I

5. ELECTIVE- I

5.2 AIR POLLUTION AND CONTROL

Teaching Scheme:	**Examination Scheme:**
Lectures: 3Hrs/ Week	Theory paper: 100 Marks
Practical: 2Hrs/Week	Term Work: 25 Marks
	Oral Exam: 25 marks

Course Objectives:

1. To study Sources, Causes & effects of Air Pollution.
2. To study the relation between Meteorology and Air Pollution.
3. To learn methods used for controlling air pollution.
4. To study Air pollution Prevention and legislation.

Course Outcomes:

On successful completion of this course the students will be able to

1. Identify the sources of air pollutants and their effect on human, plants and materials.
2. Apply knowledge of meteorology for controlling air pollution
3. Design of air pollution controlling equipments.
4. Use knowledge of legislation for prevention and control of air pollution.

SECTION –I

Unit 1: Introduction (3)

The Structure of the atmosphere, Composition of dry ambient air and properties of air. BIS Definition and scope of Air Pollution, Scales of air pollution, Types of exposures.

Unit 2: Air pollution sources (5)

Air Pollutants, Classifications, Natural and Artificial, Primary and Secondary, point and Non-Point, Line and Area Sources of air pollution. Stationary and mobile sources. composition of particulate & gaseous pollutant, units of measurement.

Unit 3: Effects of Air pollutants (6)

Effect of different air pollutants on man, animals, vegetation, property, aesthetic value and visibility, air pollution episodes. Global effects of air pollution- global warming, ozonedepletion, acid rain and heat island effect.

Unit 4: Meteorology and Air pollution (8)

Solar radiation, wind circulation, factors affecting dispersion of pollutants, Lapse rate, stability conditions, wind velocity profile, Maximum mixing depth (MMD), visibility, Wind rose diagram, General characteristics of stack plume (Plume behaviour). Gaussion diffusion model for finding ground level concentration. Plume rise. Formulae for stack height and determination of minimum stack height.

SECTION –II

Unit 5: Air sampling and analysis (5)

Air pollution survey, basis and statistical considerations of sampling sites, devices and methods used for sampling gases and particulates. Stack emission monitoring, isokinetic sampling. Analysis of air samples chemical and instrumental methods. Ambient air quality monitoring.

Unit 6: Photochemical smog, Odour pollution and Indoor pollution (6)

Chemistry of air pollution, Chain reactions of hydrocarbons, nitrogen oxide, Sulphuric oxides and intermediates, photochemical smog formation, air pollution indices -aerosols, fog, smog index.

Odour pollution: Theory, sources, measurement and methods of control of odour pollution. Indoor air pollution: Causes of air pollution, sources and effects of indoor air pollutants, changes in indoor air quality, control of indoor air pollutants and air cleaning systems.

Unit 7: Control of air pollution (8)

By process modification, change of raw materials, fuels, process equipment and process operation. By use of air pollution control equipment for particulate and gaseous pollutants. Design of control equipment as Settling chamber, Cyclone, Fabric filter, Electro static precipitator and Wet scrubber.

Unit 8: Control of gaseous pollutants and Legislation (4)

Principles of removal of gaseous pollutants, design of incineration, absorption adsorption systems. Control of air pollution from automobiles. Vehicular pollution, composition, quantity and control.

Air (Prevention and Control) Pollution Act, 1981.Emission standards for stationary and mobile sources. National Ambient air quality standards, 2009 (NAAQS).

TERM WORK

1. Assignments / problems on Air pollution.
2. Sampling and analysis of Ambient Air
3. Sampling and analysis of Automobile exhaust
4. Demonstration of stack gas monitoring

Viva/Oral examination will be based on above theory syllabus and term work

TEXT BOOKS:

i. Air pollution – Wark and Warner
ii. Air Pollution – Rao and Rao, TMH
iii. Environmental Engineering – by Peavy and Rowe, TMH.
iv. Air Pollution and Control- Murali Krishna, Jain Brothers

REFERENCE BOOKS:

i. Air pollution – Martin Crawford
ii. Air Pollution and Control Technologies- Y.Anjaneyulu, Allied Publishers
iii. Fundamentals of Air Pollution- Raju BSN, IBH Publisher
iv. An Introduction to Air Pollution- R. K. Trivedi and Goyal, BS Publications.

॥ विद्यया संपन्नता ॥

B.E. Civil (Part-I)

5. ELECTIVE – I

5.8 ENTREPRENEURSHIP

Teaching Scheme	**Examination Scheme:**
Lecture: 3 Hrs/Week	Theory Paper – 100 Marks
Practical:2 Hrs/Week	Term Work –25 Marks
	Oral – 25 Marks

Course Objectives:

1. To familiarize the students with the concept of Entrepreneurship, Entrepreneur and Women Entrepreneur opportunities in the country.
2. Acquaint the student's innovative business ideas in emerging industrial scenario with 'small scale industries' policy resolutions.
3. Introduce the student's with finance and accounting aspects, Industrial and commercial tax laws AND marketing management of entrepreneurship.

Course outcomes:

By the end of the course the students should be able to

1) Exhibit skills necessary to craft strategies and initiatives which can enable growth and sustainability in an entrepreneurial venture.
2) Prepare preliminary and final project report
3) Exhibit higher-level critical thinking skills, evidenced by analysis, evaluation, and synthesis.
4) Demonstrate skills to establish and manage the accounting process, to employ break even and cost-volume-profit tools.

SECTION – I

Unit 1: **(08)**

Meaning, Definition and concept of Enterprise, Entrepreneurship and Entrepreneurship Development, Evolution of Entrepreneurship, risks involved with entrepreneurship, barriers to Entrepreneurship, Factors affecting entrepreneurial growth.

Entrepreneur, qualities of a successful entrepreneur, types of entrepreneurs (on basis of business, motivation, stages of development, entrepreneurial activity), functions of an entrepreneur, entrepreneurial competencies, types of entrepreneurial competencies. Concepts of Intrapreneurship, Entrepreneur v/s Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Role of Entrepreneurship in Economic Development, Factors affecting Entrepreneurship, Problems of Entrepreneurship. Creativity and Innovation, Innovation and Entrepreneurship.

Unit 2: (06)

Women Entrepreneurship:- Meaning, Characteristic features, Problems of Women Entrepreneurship in India, Developing Women Entrepreneurship in India, reasons for the slow growth of women entrepreneurship, remedies to solve the problems of women entrepreneurs. Measures taken for the development of women.

Entrepreneurship In India:- Training of Rural Youth For Self Employment, BANKS, NABARD, Industrial Policy, FICCI Ladies Organization (FLO), National Alliance of Young Entrepreneurs (NAYE).

Unit 3: (08)

Role of Government in promoting Entrepreneurship, MSME policy in India, Agencies for Policy Formulation and Implementation: District Industries Centres (DIC), Small Industries Service Institute (SISI),Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Financial Support System: Forms of Financial support, Long term and Short term financial support, Sources of Financial support, Development Financial Institutions, Investment Institutions. Finance, Institutional finance to Entrepreneurs, Preparation of Business Plans, Commercial Banks, Other financial institutions like IDBI,IFCI, ICICI, IRBI, LIC, UTI, SFCs, SIDCs, SIDBI, EXIM.

Bank Institution Support to Entrepreneurs: Need for Institutional support - Small Entrepreneurs: NSIC, SIDO, SSIB, SSICS, SISI, DICs, Industrial Estates Specialized Institutions.

SECTION – II

Unit 4: **(08)**

Finance Analysis and accountancy: Estimation of cost of project and means of financing, working capital requirement and its financing, estimates of working results working capital and fixed capital assessment incentives from financial institutions and government, financial ratios, their significance, break even analysis cash flow charts financial statements.

Unit 5: **(07)**

Project Report: Preliminary and final project report preparation, financial technical commercial and economic viability project implementation process project profiles.

Unit 6: **(08)**

Introduction to Marking, Market study, Goal sitting, Sale and Sales Promotion. Industrial and commercial tax laws (major features only), Risk and Risk analysis, goal setting and decision making, Communication skills development and barriers.

Note: The subject may be taught with respect to suitable case studies and industrial visits. Audio video films shall be used on the above topics.

TERM WORK

1. Preparation of preliminary and final project report of anyone small scale industry from civil Engineering field.
2. Report based on two industrial visits.

TEXT BOOKS:

1) Patterns of Entrepreneurship, Jack M. Kaplan Wiley Publications.
2) Planning and Industrial Unit, Jay Narayan Vyas, GranthVitran Shreyas, Opp. Jain Temple Near Navrangpura Bus Stop, Navrangpura
3) Financing an Industrial Unit, Jay Narayan Vyas and Dilip Patel,Granthvitaran Ahmedabad .
4) Entrepreneurship Development Vol. I, II & III, Vasant Desai, Himalaya Publishing house.

REFERENCE BOOKS:

1) Entrepreneurship for the Nineties, Gordon B. Baty, Prentice Hall Inc. College Technical Reference by Granthvitaran.
2) Small Scale Industry Handbook, Jay Narayan Vyas, Granth Vitaran Ahmedabad
3) The Practice of Entrepreneurship, Geoffery G. Meredith R.E. Nelson and P. A. Neck, Published by International Labour Office, CH 1211, Geneva 22, Switzerland
4) Entrepreneurship Theory at Cross Road, Mathew J. Manimala, Biztantra publications.
5) Entrepreneurship and small business, WEBER, LEWIS, VOLERY, SCHAPER, Wiley publications.

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –II

3. ELECTIVE II

3.6 SOLID AND HAZARDOUS WASTE MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lecture: 3 Hrs/Week	Theory Paper: 100 Marks
Practical: 2 Hrs/Week	Term Work: 25 Marks
	Oral Exam: 25 Marks

Course Objectives:

1) To study the types, sources, generation of solid &hazardous waste.
2) To impart basic knowledge of collection, transportation, treatment and disposal of solid waste
3) To study handling and storage of solid and hazardous waste.

Course Outcomes:

Upon successful completion of course, the students will be able to:

1) Suggest waste reduction and resource recovery methods
2) Explain various waste disposal methods
3) Examine legal, political and administrative considerations in design and operation of solid and hazardous waste management

SECTION I

Solid Waste Management

Unit 1: (06)

Solid Waste management: Functional outlines of refuse, storage, transportation of refuse, analysis, composition and quantity of refuse, Economic aspects of refuse collection and transport.

Solid waste in industries, common types of solid waste, classification, collection and transportation. Concept of biomedical & Hazardous waste management.

Unit 2: **(05)**

Solid waste handling and Processing methods, Segregation and salvage recovery of bye-products, use of solid waste as raw material in industries. Recycling of solid waste.

Unit 3: **(06)**

Composting: Theory of composting, types of composting, factors governing composting, processing before composting, mechanical composting plant, and recovery of Bio –gas energy from organic solid waste.

Unit 4: **(06)**

Incineration: Theory and types of incinerators, location, planning aspects, effects of feed, composition, rate and temperature, air supply, design of incineration plant, pyrolysis and its by-products, energy recovery.

Solid waste management rules, status of solid waste management in India.

SECTION –II

Hazardous Waste Management

Unit 5: **(06)**

Definition of Hazardous waste, Characteristics and nature of hazards, natural and man-made hazards, classification of hazards.

Unit 6 : **(04)**

Qualitative estimation of damages, risk assessment and management.

Unit 7: **(06)**

Types of hazardous waste, characteristics, Site assessment waste minimization resource recovery. Strategy for minimization of damage due to natural and manmade hazards.

Unit 8: **(06)**

Storage and handling of hazardous waste, Site Selection, Transportation of hazardous wastes. Case Studies of hazards, episodes. Sanitary landfill site selection, types of land filling, maintenance and precaution, leachate and its control, control of contamination of ground water.

TERM WORK

1. Analysis of solid waste

2. Project on Design of Refuse collection & Disposal System for medium size town or a part of city.

3. Case study of Hazards and Episodes (Any Two).

4. Assignments (One Assignment on each unit)

TEXT BOOKS:

i) Solid Waste Management – Dr. A.D. Bhide

ii) Hazardous Waste Management – C. A. Wentz McGraw Hill International Edition

iii) Management of Municipal Solid Waste- T. V. Ramchandra, Capital Publishing company, New Delhi

iv) Solid and Hazardous Waste Management- M. N. Rao and Razia Sultana BS Publication

REFERENCE BOOKS:

i) Solid Waste Management – George Tchobanoglous, Mc Graw Publication

ii) Manual on Municipal Solid Waste management by ministry of Urban Development of Govt. of India.

iii) Solid Waste Management- I. H. Khan, and Naved Ahsan, CBS Publishers and Distributors, New Delhi.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I

3. ELECTIVE II

3.8 ENVIRONMENTAL MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lecture : 3 Hrs / Week	Theory Paper: 100 Marks
Practical: 2 Hrs / Week	Term Work: 25 Marks
	Oral Exam: 25 Marks

Course Objectives:

1) To study principles of Environmental Management System.
2) To acquaint students with different Environmental pollution control acts.
3) To study the electronic, biomedical and industrial waste properties and waste management systems
4) To inculcate idea of Environmental Impact Assessment.

Course outcomes:

Upon successful completion of course the students will be able to:

1) Demonstrate basic principles of Environmental Management System.
2) Explain different Environmental pollution control acts.
3) Select appropriate technology for management of electronic, biomedical and industrial waste
4) Perform Environmental Impact Assessment small project

SECTION-I

Unit 1: **(6)**

Fundamentals of environmental management system (EMS) and ISO 14000 series: History Background and development of ISO 14000, TC-207, ISO 14000series. Environmental management Plans- Principles and elements. The ISO 14001-Environmental management systems standard, Definitions, Eco labeling, Auditing

Unit 2: **(6)**

Environmental management acts related to environmental protection: Air, Water, Soil and Hazardous Waste. Detailed study of following acts - Water act 1974(Prevention and control of pollution), Air act 1981 (Air pollution prevention and control of pollution), Hazardous waste management handling rules -1989. Municipal solid waste rules- 2000, Noise pollution regulation and control rules 2000 **(7)**

Unit 3 : **(5)**

Electronic waste management: Objectives, Classification of E-waste, guidelines for environmentally sound management of E-waste, environmentally sound treatment technology for E-waste, guidelines for environmentally sound integrated E-waste recycling and treatment policy International scenario, hazardous substances that can occur in E-waste.

Unit 4: **(5)**

Biomedical waste management: Introduction, Classification, Types, segregation, packaging and transportation and storage, possible hazards, Effects, Detailed study of Biomedical waste management and handling rules 1998.

SECTION –II

Unit 5: **(4)**

Air pollution control:, Air quality standards, Air pollution control technologies for oxides of sulphur: Reducing SOx levels through dilution by increasing stack height, use of alternative fuels. Extraction of sulphur from fuels. Reduction of sulphur in combustion process, fuel gas desulfurization.

Air pollution control technologies for oxides of Nitrogen: Emission of nitrogen oxides. Control technologies for oxides of nitrogen emissions. Air pollution control technologies for volatile organics, Hydrocarbons and hydrogen sulphide.

Unit 6: **(5)**

Advanced waste water treatment: Carbon adsorption, Ion exchange, sodium and hydrogen cycle. Membrane process. Electro dialysis process, pressure membrane process and membrane performance characterization. Nutrients removal such as nitrogen and phosphorus

removal. Land treatment systems: Irrigation, rapid infiltration and overland flow systems. Wetland flow Systems.

Unit 7: (7)

Environmental Impact Management (EIA)

I) Definition, Objectives of EIA .EIA procedure in detail, Role of different actors in EIA, components of EIA, Areas of human concern (Impact categories), Contents of EIA, Categories of projects under EIA, Introduction to Impact assessment methods such as Leopold matrix Legal provision for public participation in India,
Role of general public in Environmental clearance. Limitations of EIA

II) The environmental rules 1999, sitting for industrial process, methodology for preparing environmental impact assessment, role of regulatory agencies and control boards in obtaining Environmental clearance for project.

III) **Case studies:-**Positive and negative environmental impacts of Dams,
Express highways, Major industries, Power plants

Unit 8: (7)

Miscellaneous Topics

I) **Removal of Chromium:** General, control methods, reduction precipitation, Ion Exchange, RO, Lime coagulation and adsorption

II) **Removal of Mercury:** General, measurement of mercury, mercury losses in Chlor-Alkali industries, removal of mercury from gaseous streams, removal of Mercury through liquid streams.

III) **Treatment of phenolic effluents:** Introduction, sources of phenols, Treatment and removal.

TERM WORK

Term work shall consist of assignments on all above units and following chapters and one industrial visit report.

Oral examination shall be based on above term work.

TEXT BOOKS:

1. Environmental engineering and management- Dhameja, Katson publications, Delhi

2. Air Pollution and control, K.V.S.G. Murli Krishna, Jain Brothers, Delhi

3. Water Management, K.V.S.G. Murli Krishna, Environmental Protection Soc., Kakinada

REFERENCE BOOKS:

1. Indian standards
BIS -IS/ISO 14001

- IS/ISO 14004
- IS/ISO 14011
- IS/ISO 14010
- IS/ISO 14012

2. Wastewater treatment and reuse- Metcalf and Eddy, TMG, Delhi

3. Pollution control in process industries- S. P. Mahajan, TMG, Delhi

4. Environmental science and engineering- Henry and Henke, PHI, New Delhi

5. For all environmental acts and updates - **http://www.envfor.nic.in**

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

B.E. (CIVIL) PART –I I
4. ELECTIVE III
4.2 INDUSTRIAL WASTE TREATMENT

Teaching Scheme:	Examination Scheme:
Lecture – 3 Hrs / Week	Theory Paper – 100 Marks
Practical - 2 Hrs / Week	Term Work – 50 Marks

Course Objectives:

1. To understand sources of waste water in different industries.
2. To study waste water treatment options for different industries.
3. To acquire knowledge about disposal of effluents and the standards for disposal

Course Outcomes:
On successful completion of this course the students will be able to:

1. Characterize different industrial wastes
2. Suggest treatment alternative based on characteristics of industrial waste.
3. Demonstrate basic knowledge of legislation for pollution control

SECTION -I

Unit 1: **(5)**

Use of water in industry, Sources of wastewater, quality, and quantity variation in waste discharge, water budgeting, characterization and monitoring of wastewater flow, Grab samples and Composite samples. Population equivalent, Relative stability and Theoretical oxygen demand. Water quality criteria and effluent standards. Introduction to water quality index (WQI), methods used.

Unit 2: **(7)**

Waste volume and strength reduction, In-Plant measure, good housekeeping, Process change, leakage prevention, segregation, recycling, neutralization, equalization and proportioning of waste. In line equalization, Side line equalization. Methods for determining volume of equalization tank.

Unit 3: **(7)**

Water quality monitoring of streams, Self-purification of stream, Streeter Phelphs equation, Classification of streams. B.O.D. reaction rate - Method of least squares, Thomas method and Fuji mato method. D.O. Sag curve and D.O. deficit calculations.

Unit 4: **(4)**

Miscellaneous methods of dissolved solids removal- Ion-exchange, Electro dialysis, Reverse osmosis and Evaporation, Adsorption. Sludge disposal methods.

SECTION –II

Unit 5: **(4)**

Different types of waste treatment and their selections, Development of treatment flow diagram based on characteristics of waste. Pollution characteristics of common Industries.

Unit 6: **(9)**

Manufacturing processes in major industries, water requirements, wastewater sources, composition of wastes, Viz. Sugar, Distillery, Dairy, Pulps, Paper mill, Fertilizer, Tannery, Chemical, Steel Industry, power Plants, Textile Treatment flow sheets, alternative methods of treatment, factors affecting efficiency of treatment plant. Effect of above industrial wastes on receiving water bodies.

Unit 7: **(4)**

Introduction to the concept of zero discharge, Recycling and reuse and recovery Introduction to 3R principles to convert waste into wealth, Acclimatization of bacteria to toxic wastes, process sensitivity, operation and maintenance requirements.

Unit 8: **(5)**

Water pollution control act, organizational set up of central and state boards for water pollution control, classification of river on water use, minimal national standards, socioeconomic aspects of water pollution control.

Introduction to Wetland treatment – Root zone cleaning system. Introduction to green processes in the industries.

TERM WORK

1) Visit to any four of the following industries

i. Sugar industry

ii. Distillery industry

iii. Dairy industry

iv. Textile industry

v. Tannery

vi. Paper and Pulp

vii. Common effluent treatment plant (CETP)

Note: - Detailed visit report shall be prepared for each of the industrial visit

2) One assignment on each unit.

TEXT BOOKS:

1. Industrial Waste Treatment - Nelson Nemerow, Addison - Wesley

2. Industrial Waste Treatment – Rao & Datta, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi

3. Industrial Waste Water Treatment- Dr. A. D. Patwardhan, Prentice Hall of India

REFERENCE BOOKS:

1. Water and Waste Water Engg.- Fair G.M., Gayer J.C. and Okun D.A. , John Wiley Publication

2. Water and Waste Water Technology, M. J. Hammer and M. J. Hammer(Jr.)

3. Waste Water Engineering – Metcalf Eddy - Mc Graw Hill Publications.

सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

B.E. Civil – Part II

4. ELECTIVE – III

4.9 DISASTER MANAGEMENT

Teaching Scheme:	**Examination Scheme:**
Lecture:- 3 Hrs/Week	Theory Paper – 100 Marks
Practical: 2Hrs/Week	Term Work – 50 Marks

Course Objectives:

1) Study of various disasters, their characteristics, causes and impacts.
2) Acquaint with the various disaster management stages to prevent or reduce losses that occur due to hazards during disaster and emergencies.
3) Provide information regarding various programmes of International, National and State and District Level Agencies for disaster management.

Course Outcomes:

By the end of the course students should be able to

1) Apply various disaster preparedness, mitigation and management techniques.
2) Apply the Geo-informatics techniques for prepare hazard zonation maps for Disaster management.
3) Apply the various schemes and programmes of International, National and State and District Level Agencies for disaster management.

SECTION-I

Unit 1: **(08)**

Environmental Hazards and Disasters:-

Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress & Environmental Disasters. Different approaches & relation with human Ecology- Landscape Approach- Ecosystem Approach- Perception approach- Human ecology & its application in geographical researches.

Unit 2: **(08)**

Types of Environmental hazards and Disasters:-

Natural disaster and Planetary Hazards

Earthquake Hazards/ disasters- Introduction, general characteristics, mechanism, causes and effects of Earthquakes, prediction, seismic zones, seismic waves, vulnerability, damage potential – magnitude and intensity, Earthquake Hazards in India- Human adjustment, perception and mitigation of earthquake.

Volcanic Hazards/Disasters:- Volcanoes Causes of volcanism, volcanic materials, hazardous effects and impacts of volcanic eruptions.

Landslide and Land Degradation:- Causes, tectonic conditions, erosion, avalanches, rock fall, damage assessment. Landslide prone area in India.

Cyclones and Tsunamis:- Structure and nature of cyclones (Tropical cyclones & Local storms) & tsunamis, characteristics, hazard donation, factors, hazard potential, impact assessment. Cyclone prone areas in India.

Floods:- General characteristics, causes, Flood hazards India, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management (Human perception & mitigation). **Droughts:-** Cause and Impacts of droughts- Drought hazards in India- Drought control measures.

Man-made Disaster and Extra Planetary Hazards/ Disasters

Man induced Hazards /Disasters-Physical hazards/ Disasters-Soil Erosion

Soil Erosion:- Mechanics & forms of Soil Erosion- Factors & causes of Soil Erosion, Conservation measures of Soil Erosion.

Mining:- Mining and environment, land & environment degradation and management, Mined land reclamation.

War and Chemicals disaster: - Release of toxic chemicals Hazardous wastes, reactivity, toxicity, nuclear war, biological weapons, armed conflicts, land mines etc.

Sedimentation processes: - Global Sedimentation problems, Regional Sedimentation problems. Sedimentation & Environmental problems- Corrective measures of Erosion & Sedimentation.

Biodiversity Extinction and Deforestation:- Biodiversity, species at risks, loss of biodiversity, management of species diversity, deforestation its causes & adverse effects.

Biological hazards/ disasters:- Population Explosion.

Unit 3: **(06)**

Disaster Management:- Three Stages

Pre-disaster stage (Preparedness):- Introduction to disaster preparedness, Three A's of disaster preparedness, principles of disaster preparedness, steps in disaster preparedness, Preparing hazard zonation maps, Predictability/ Forecasting & warning, preparing disaster preparedness plan. Land use zoning- Preparedness through (IEC) Information, education and Communication. Disaster resistant house construction- Population reduction in vulnerable areas- Awareness.

Emergency stages: - Planning, mitigation, preparedness, response and recovery.

Post Disaster stage (Rehabilitation):- Physical and Social Infrastructure, Social and economic rehabilitation, Repair and retrofitting, Political Administrative Aspect.

SECTION-II

Unit 4: **(05)**

Natural Disaster Reduction and Management:- Provision of Immediate relief measures to disaster affected people-Prediction of Hazards & Disasters-Measures of adjustment to natural hazards.

Unit 5: **(09)**

Disaster Mitigation:-

Disaster Mitigation through Development: Disaster Mitigation: Basic Concepts, Meteorological and Seismological observation, Structured and Non Structured Mitigation, disaster mitigation strategies, importance of Information and Communication in Disaster Mitigation, Relationship between Disaster and Development, Sustainable Development for Disaster Mitigation, Importance of various Agencies/sectors involved for disaster mitigation.

Education on disasters -Community involvement, The adjustment of Human Population to Natural hazards & disasters. Role of database in Disaster Mitigation, GIS and GPS applications.

Role of Media

Monitoring Management- programme of disaster research and mitigation of disaster of following organizations. International Council for Scientific Unions (ICSU)-Scientific

committee on problems of the Environment (SCOPE), International Geosphere Biosphere programme (IGBP) – World federation of Engineering Organizations (WFED). National Academy of Sciences-World Meteorological organizations (WMO). Various U.N agencies like UNCRD, IDNDR, WHO, UNESCO, UNICEF, UNEP.

Unit 6: **(09)**

Agencies in Disaster Management

International Agencies: United Nations and its specialized agencies like UNDP, FAO, WHO AEC (Atomic Energy Commission), United Nations Disaster Management Cell, New Delhi. International Federation of Red Cross and Red Crescent Societies (IFRC) and National Red Cross/Red Crescent Societies.

National Agencies: Disaster Management Cell (Ministry of Home Affairs, Govt. of India), National Institute of Disaster Management, Indian Red Cross Society, Planning Commission, National Civil Defense Organization, Bharat Scouts and Guides. Military and Para-Military Forces; Corporate Bodies etc.

State and District Level Agencies: Disaster Management cells at state level and District level, District Magistrate office, Role and Responsibilities of DM in prevention, preparedness, mitigation, relief and rehabilitation; local bodies and role of different functionaries-

TERM WORK

1. Practical exercise on each unit
2. Each student will be required to prepare a project work of Coastal Ecosystem, Desert Eco System and Mountain Eco System & submit it at the end of year & this will be evaluated by an internal as well as external examination

TEXT BOOKS:-

1. The Environment as Hazards, Kates, B.I& White, G.F, Oxford, New York, 1978
2. Disaster Management, R.B. Singh, Rawat Publication, New Delhi, 2000.
3. Disaster Management H.K. Gupta, Universities Press, India, 2003.
4. Space Technology for Disaster Mitigation in India (INCED), R.B. Singh, University of Tokyo, 1994.
5. Disaster Management in Hills, Dr. Satender, Concept Publishing Co., New Delhi,

2003.

6. Plan for Earthquake, Disaster, Mitigation, Disaster Management, A.S. Arya, V.K. Sharma, Action IIPA Publication New Delhi, 1994.
7. An overview on Natural and Man-made Disaster & their Reduction, R.K. Bhandani, , SIR, New Delhi.
8. Disaster Mitigation, Preparedness, Recovery and Response, P. C. Sinha, SBS Publishers and Distributors Pvt. Ltd.
9. Introduction to International Disaster Management, D. P. Coppola, Butterworth-Heinemann.
10. Disaster Management M. Sharma, Vinod K., NCDM, IIPA, New Delhi, 1994
11. Housing in Disaster prone areas, National Building Organization and U.N. Regional Centre, Mathur G.C., ESCAP, New Delhi, 1986.
12. Disaster Management, Dr. Mrinalini Pandey, Wiley Publication.

REFERENCE BOOKS:-

1. Disaster Management in India – A Status Repot, National Disaster Management Division, Ministry of Home Affairs, Govt. of India, 2004.
2. Disaster Management and Preparedness, Collins Larry R. and Scheind Thomas D. (2000)., Taylor and Francis, 2000.
3. Disaster Management, Sharma V.K., Indian Institute of Public Administration, New Delhi, 1995.
4. National Disaster Response Plan, NCDM, New Delhi, 2001.
5. Manuals on Natural Disaster management in India, M.C. Gupta, National Centre for Disaster Management, IIPA, New Delhi, 2001.
6. Management of Floods, National Disaster Management Authority, Government of India.

॥ विद्यया संपन्नता ॥

1.3.1. List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Department Name:- First Year Engineering		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2019-20	F.Y. B. Tech. (All Branches)	Communication Skills
		Professional Communication
		Democracy, Elections and Good Governance
2018-19	F.Y. B. Tech. (All Branches)	Communication Skills
		Professional Communication
		Democracy, Elections and Good Governance
2017-18	F.E. (All Branches)	Communication Skills
		Professional Communication
2016-17	F.E. (All Branches)	Communication Skills
		Professional Communication
2015-16	F.E. (All Branches)	Communication Skills-I
		Communication Skills-II

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

ALL BRANCHES

CBCS Syllabus for

First Year B.Tech. (All Branches)
w.e.f. Academic Year 2018-19

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
CBCS Curriculum for First Year B.Tech. (All Branches)
WEF 2018-19

- Semester I : Theory Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$	3			3	70	30		100
C112	Engineering Mathematics I	3			3	70	30		100
C113	Basic Electrical & Electronics Engineering	4			4	70	30		100
C114	Engineering Mechanics	3			3	70	30		100
C115	Basic Mechanical Engineering	3			3	70	30		100
C116	Communication Skills	1			1		25		25
	Total	17			17	350	175		525

- Semester I : Laboratory / Tutorial Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$			2	1			25	25
C112	Engineering Mathematics I		1		1			25	25
C113	Basic Electrical & Electronics Engineering			2	1			25	25
C114	Engineering Mechanics			2	1			25	25
C115	Basic Mechanical Engineering			2	1			25	25
C116	Communication Skills			2	1			25	25
C117	Workshop Practice			2	1			25	25
	Total		1	12	7			175	175
	Grand Total	**17**	**1**	**12**	**24**	**350**	**175**	**175**	**700**
C118	Induction Program	*# (Please see note below)*							

PDF Reader Trial

- Semester II : Theory Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$	3			3	70	30		100
C122	Engineering Mathematics II	3			3	70	30		100
C123	Engineering Graphics & Design	3			3	70	30		100
C124	Basic Civil Engineering	3			3	70	30		100
C125	Programming for Problem Solving	2			2		25		25
C126	Professional Communication	1			1		25		25
	Total	15			15	280	170		450
C127	Democracy, Elections and Good Governance					30			30

- Semester II : Laboratory / Tutorial Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE (POE)*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$			2	1			25	25
C122	Engineering Mathematics II		1		1			25	25
C123	Engineering Graphics & Design			4	2			50	50
C124	Basic Civil Engineering			2	1			25	25
C125	Programming for Problem Solving			4	2	50#		50	100
C127	Professional Communication			2	1			25	25
	Total		1	14	8	50		200	250
	Grand Total	**15**	**1**	**14**	**23**	**330**	**170**	**200**	**700**
C128	Democracy, Elections and Good Governance							20	

PDF Reader Trial

- Legends used –

L	Lecture	FA	Formative Assessment
T	Tutorial	SA	Summative Assessment
P	Lab Session	ESE	End Semester Examination
		ISE	In Semester Evaluation
		ICA	Internal Continuous Assessment

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. # - Indicates the subject 'Programming for Problem Solving' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

3. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

4. Democracy, Elections & Good Governance is mandatory course. The marks earned by student with this course shall not be considered for calculation of SGPA/CGPA. However student must complete ICA of 20 marks and End Semester Examination (ESE) of 30 marks (as prescribed by university, time to time) for fulfillment of this course. This course is not considered as a passing head for counting passing heads for ATKT. However, student must pass this subject for award of the degree

5. Student must complete induction program of minimum five days before commencement of the regular academic schedule at the first semester.

PDF Reader Trial

GUIDELINES FOR INDUCTION PROGRAM (C128)

New entrants into an Engineering program come with diverse thoughts, mind set and different social, economical, regional and cultural backgrounds. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

A **Five day** induction program for the new UG entrant students is proposed at the commencement of the first semester. It is expected to complete this induction program before commencement of the regular academic schedule.

Its purpose is to make new entrants comfortable in their new environment, open them up, set a healthy daily routine for them, create bonding amongst the peers as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature.

The Induction Program shall encompass (but not limited to) below activity –

1. Physical Activities
2. Creative Arts
3. Exposure to Universal Human Values
4. Literary Activities
5. Proficiency Modules
6. Lectures by Experts / Eminent Persons
7. Visit to Local Establishments like Hospital / Orphanage
8. Familiarization to Department

Induction Program Course do not have any marks or credits however performance of students for Induction Program is assessed at institute level using below mandatory criteria –

1. Attendance and active participation
2. Report writing

PDF Reader Trial

Solapur University, Solapur

First Year B.Tech (All Branches) Semester-I

C116 COMMUNICATION SKILLS

Teaching Scheme
Theory– 1 Hr /Week, 1 Credit
Laboratory– 2 Hrs. /Week, 1 Credit

Examination Scheme
ISE – 25 Marks
ICA– 25 Marks

- **Course Objectives :**

C116.O1	To make students understand English Grammar and its application in communication
C116.O2	To develop writing skills amongst students
C116.O3	To develop and enhance oral communication skills of students
C116.O4	To nurture reading and comprehension skills of the students.
C116.O5	To prepare students for professional written communication.
C116.O6	To prepare students for competitive exams with focus on verbal ability

- **Course Outcomes :**

At the end of this course,

C116.1	Student can frame grammatically correct sentences for day to day communication
C116.2	Student can use numerous appropriate words and sentences in written communication.
C116.3	Student can demonstrate effective oral communication skills in various situations.
C116.4	Student can read, comprehend and answer the questions based on a passage.
C116.5	Student can draft letters, emails, write paragraphs and essays with appropriate content and context.
C116.6	Students are able to solve verbal ability questions in competitive exams

PDF Reader Trial

- **Course Curriculum**

Unit No 01: English Grammar		**Hours : 06**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
1.1	Articles, nouns, pronouns, verbs, modal verbs, auxiliary verbs & tenses	03	Sentence formation, corrections / error finding	Remembering, understanding, applying, creating
1.2	Adjectives, adverbs, prepositions, conjunctions	02	Sentence formation, corrections / error finding	Remembering, understanding, applying, creating
1.3	i. Idioms& phrases ii.Clichés iii. Redundancies	01	Identifying Meaning of the idioms, phrases and Clichés and using them appropriately. Sentence Correction/ error finding	Remembering Understanding applying , creating
Unit No 02: Vocabulary		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
2.1	Synonyms & antonyms	01	Synonym / antonym of the given word	Remembering, understanding, applying
2.2	Prefixes & suffixes	01	Word formation.	Remembering, understanding, apply
Unit No 03:Oral Communication		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
3.1	Situational conversation	01	Role play based on formal or informal conversation, writing a conversation based on a situation	Applying, creating
3.2	Impromptu speaking –extempore	01	extempore speech	Applying, creating, evaluating

PDF Reader Trial

Unit No 04: Reading Comprehension		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
4.0	Reading comprehension	02	Questions based on a passage	understanding, evaluating, applying,
Unit No 05:Writing Practices-1		**Hours : 03**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
5.1	Writing business letters	01	Writing a professional / business letter	Understanding, applying, creating
5.2	E-mail communication	01	Writing a professional e-mail	Understanding, applying, creating
5.3	Paragraph writing&Essay writing	01	Writing a paragraph of about 120 words & an essayof about 300 words	Understanding, applying, Creating

- **In Semester Evaluation (ISE) –**
  ISE shall be based on three theory examination conducted at institute level covering above curriculum. Examinations shall include sufficient questions covering all topics / subtopics
- **Internal Continuous Assessment (ICA) -**
  ICA shall be based on performance of the student during the laboratory sessions in Language Lab covering minimum12 exercises out of blow-

1. Grammar Exercise –I based on articles, nouns and pronouns.
2. Grammar Exercise –II based on verbs, modal verbs, auxiliary verbs & tenses
3. Grammar Exercise –III based on adjectives, adverbs, prepositions, conjunctions
4. Grammar Exercise –IVbased on idioms and phrases, clichés & redundancies
5. Vocabulary – Based on the synonym of the given word
6. Vocabulary – Find the antonym of the given word
7. Exercise on word formation (prefixes / suffixes)
8. Writing conversation based on a formal situation
9. Writing conversation based on a formal situation
10. Exercise based on reading comprehension
11. Professional / business letter writing
12. Professional / business E mail writing
13. Writing a paragraph of about 120 words / an essay of about 300 words on a given topic.
14. Extempore speech on a given topic

PDF Reader Trial

- **Text Books:**

1. English Grammar Just for You. RajeevanKaral. Oxford University Press
2. Technical English.Dr. M. Hemamalini. Wiley India Pvt.
3. English for Practical Purposes, Z. N. Patil, B.S. Valke, A.R. Thorat, Zeenath Merchant
4. Study Writing. Liz Hamp-Lyons and Ben Heasly. Cambridge University Press.2006.
5. Exercises in Spoken English. Parts. I-III. CIEFL, Hyderabad.Oxford University Press.
6. Communication Skills, Sanjay Kumar and PushpaLata. Oxford University Press. 2011

- **References Books:**

1. English Grammar & Composition , Wrenn& Martin, S. Chand
2. Practical English Usage . Michael Swan.OUP.1995.
3. Remedial English Grammar.F.T.Wood.Macmillan.2007.
4. On Writing Well. William Zinsser. Harper Resource Book.2001.
5. Business Communication, ShaliniKalia, ShailjaAgarwal, Wiley
6. Communication Skills for Technical Students, T. M. Farhathullah, Orient BlackSwan
7. Longman Dictionary of Contemporary English
8. Essential Activator, Longman
9. Word Power Made Easy, Norman Lewis

PDF Reader Trial

Solapur University, Solapur

First Year B.Tech (All Branches) Semester-II

C127 PROFESSIONAL COMMUNICATION

Teaching Scheme
Theory– 1 Hr /Week, 1 Credit
Laboratory– 2 Hrs. /Week, 1 Credit

Examination Scheme
ISE – 25 Marks
ICA - 25 Marks

- ## Course Objectives :

C127.O1	To nurture student's effective presentations skills
C127.O2	To equip student with skills for participating effectively in group discussion.
C127.O3	To equip student with skills for performing effectively in personal interview
C127.O4	To develop resume writing skills of students
C127.O5	To develop and enhance the report writing skills of the students
C127.O6	To inculcate soft skills in students for personal and professional success.

- ## Course Outcomes :

At the end of this course, student will able to

C127.1	Prepare good quality presentation and deliver it effectively.
C127.2	Participate effectively in group discussion
C127.3	Perform effectively in personal interview
C127.4	Prepare effective resume for job interviews
C127.5	Draft and write various reports professionally.
C127.6	Demonstrate various soft skills like team skills, leadership, creativity, etc. in different situations.

PDF Reader Trial

- **Course Curriculum**

Unit No 01: Presentation Skills		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
1.1	Pronunciation, Intonation, Stress and Rhythm	01	Making a Presentation	Understanding, applying, evaluating, creating
1.2	Presentation- effective planning, preparing & delivering	01	Preparing and delivering presentations	Understanding, applying, evaluating, creating
Unit No 02: Group Discussion		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
2.0	Group Discussion- introduction, traits evaluated, types, tips for successful participation, individual Traits	02	Mock group discussion	Remembering, understanding, applying, evaluating, creating
Unit No 03: Personal Interview		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
3.0	Introduction, types of interviews, preparatory steps for employment interviews, skill tips, frequently asked questions during interviews	02	Mock personal interview	Remembering, understanding, applying, evaluating, creating
Unit No 04: Writing Practices -II		**Hours : 03**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
4.1	Resume Writing	01	Writing resume for campus placement	Remembering, understanding, applying, evaluating, creating
4.2	Technical report writing- types, structures, data collection, content, form	01	Write a report on event / industrial visit / project	Remembering, understanding, applying, evaluating, creating
4.3	Précis Writing	01	Précis Writing	Remembering, understanding, applying, evaluating, creating

PDF Reader Trial

Unit No 05: Induction to Soft Skills		**Hours : 06**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
5.1	Personal SWOCanalysis	06	Assessment through presentation, exercise, case study, role play, skit and group activity	Remembering, understanding, applying, evaluating, creating
5.2	Goal setting			
5.3	Motivation			
5.4	Leadership and team working			
5.5	Ethical values			
5.6	Stress management			
5.7	Emotional intelligence			
5.8	Positive thinking and attitude			
5.9	Decision making			
5.10	Creativity			

- **In Semester Evaluation (ISE) –**
  ISE shall be based on three theory examination conducted at institute level covering above curriculum. Examinations shall include sufficient questions covering all topics / subtopics

- **Internal Continuous Assessment (ICA) -**
  ICA shall be based on performance of the student during the laboratory sessions in language Lab covering minimum12 exercises out of the following exercises:

1. Power point presentation and a delivery
2. Writing views on a topic for group discussion in about 180 words
3. Participation in a group discussion
4. Writing responses to the frequently asked questions in personal interview
5. Mock personal interview.
6. Resume writing for campus placement
7. Industrial visit report writing
8. Other technical report writing
9. Self SWOC analysis
10. Oral presentation on self-short term and long term goals
11. Writingself-short term and long term goals
12. Role play on leadership and team working
13. Exercise on Précis Writing
14. Case study on decision making, stress management, success stories, positive thinking, entrepreneurship, etc.

✓ *Note – Students shall be encouraged to use ICT tools for compilation, analysis, report writing and presentation.*

PDF Reader Trial

- **Text Books:**

7. Soft Skills: An Integrated Approach to Maximize Personality, Gajendra Singh Chauhan & Sangeeta Sharma, Willy Indian Pvt. Ltd.
8. On Writing Well. William Zinsser. Harper Resource Book.2001.
9. Technical English. Dr. M. Hemamalini, Willy Indian Pvt. Ltd
10. Professional Speaking Skills. Aruna Koneru. Oxford University Press

- **References Books:**

1. Soft Skills. K. Alex., S. Chand Publications
2. Soft Skills – A Text book for Undergraduates. Ajay R Tengse, Orient Black Swan
3. Communication Skills Sanjay Kumar Pushpa Lata Oxford University Press
4. Managing Soft Skills for Personality Development, B N Ghosh- McGraw Hill Publication
5. Soft Skills for Everyone Jeff Butterfield, Cengage Learning
6. Soft Skills for Mangers. Dr. T. Kalyana Chakravarthi & Dr. T. Ltha Chakravarthi Biztantra Publication

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

For All Faculty

Syllabus of

Democracy, Elections and Good Governance

For All UG First year Semester - II

With effect from June – 2018

PDF Reader Trial

Structure for Democracy, Elections and Good Governance

	Name and type of the paper		L/P	Credits	Total Marks	UA	
	Type	Name					
Class	For All UG Semester-II (First year)						
	Fundamental	Democracy, Elections and Good Governance	15	01	50	50	20

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

PDF Reader Trial

Preamble & Objective of the Course (*Rationale)-*

Rationale: the rationale of the study is to make the pupils aware of the importance of democracy. What constitute democracy, what is its importance from the point of view of the role of individual and what exactly can a individual get if he performs his role well in the society. This module also aims to make the individual understand the different aspects of democracy and its implications in the overall development of the state. The syllabus is introduced from the point of view that all students upon entering into the college, enroll themselves as voters and encourage and enthuse other members of the society to participate not only in election process but also electoral and political process in general.

PDF Reader Trial

Democracy, Elections and Good Governance

[Credits:01, Theory-(01)]

Total Theory Lectures- 15

- **Unit no. 1 - Democracy in India** (No. of Lectures 05)
  - Dimensions of Democracy: Social, Economic and Political
  - Decentralisation: Grassroots Level Democracy
  - Challenges before Democracy: women and marginalised sections of the society
- **Unit no. 2 - Election to Local Self Government Bodies** (No. of Lectures 05)
  - 73rd and 74th Constitutional Amendment Acts: Institutions at the local level and Role of State Election commission
  - Local Body Elections: Urban & Rural
  - Duties of an Individual towards electoral process
- **Unit no. 3 - Good Governance** (No. of Lectures 05)
  - Meaning and concept
  - Government and Governance
  - Good Governance initiatives in India

PDF Reader Trial

I. Democracy

A. Introduction

Democracy is derived from the Greek word _*Krates'* meaning power or rule. Democracy thus means rule of the demos (the demos refereeing to the people, although the Greeks originally used this to mean the _poor' or the _many'. Thus democracy essentially links to the govt to the people and hence Abhram Lincon's famous definition of –Democracy is government of the people, by the people and for the people‖ rightly expresses the spirit of democracy.

Very broadly, democracy may mean the following

1. The system of rule by the poor and disadvantaged.
2. A form of government in which the people rule themselves directly and without the need for professional politicians or public officials.
3. A society based on equal opportunity and individual merit rather than hierarchy and privileges.
4. A system of welfare and redistribution aimed at narrow social inequalities.
5. A system of decision making based on the Principe of majority rule
6. A system of rule that secures the right and interests of minorities by placing checks upon the power of the majority.
7. A means of filling public offices through a competitive struggle for the popular vote.
8. A system of government that serves the interest of people regardless of their participation in political life.

Democracy is broadly classified as:

Direct Democracy and

Representative Democracy

Direct Democracy is also called as participatory democracy this was the first ever model of democracy introduced in the Greek city state of Athens in 3rd century BC. In this form of democracy, citizens participated in the affairs of the state directly and had a say in the governance of the city state. Every citizen had a political right in theism state. (women and slaves were not allowed to participate).

Direct democracy thus obliterates the distinction between government and the governed and between the state and civil society.

Features of Direct Democracy

It heightens the control that citizens can exercise over their own destinies as it si the only pure form of government.

It creates a better informed and more politically sophisticated citizens.

It enables the public to express their own views and interests without having to rely in self-serving politicians

PDF Reader Trial

Representative Democracy

It is also called limited or indirect democracy. The narrow meaning of representative democracy as understood by many is periodic voting after a stipulated time (in case of India it is every five years). However the larger meaning of democracy is full participation in the day to day affairs of governance. The process of election is essentially to establish a link between the government and the governed.

Features of representative democracy:

It is a practicable form of democracy.

It relieves ordinary citizens the burden of decision making thus possible a division of labour in politics.

It allows governed to be placed in the hands of those with better education, expert knowledge and greater experience.

Principles of Democracy are as follows

1. **Government by consent:** democracy is government by consent of the people. Rational consent can be obtained by persuasion for which an atmosphere of free discussion is essential. Consent is obtained at two levels.

A) Among the representatives of the people in the legislative assemblies where members of the opposition have their full say and

B) At a public level where there is a direct communication between the leadership and the people.

2. **Public Accountability:** It essentially means the representatives must remain answerable to the people. As we have seen earlier that democracy essentially is based on public consent, therefore it is implied that the government should be responsible and responsive to the people. Whatever will and aspirations of the people are, the government should attempt to fulfil/realise those if they fall well within the constitutional framework of the country.

3. Majority Rule: In modern representative democracies, decisions are taken in several bodies right from electing the government to the committees that are constituted. It is considered to be the heart of the democratic system that all issues in all the bodies from legislature to cabinet, executives and other committees are resolved through majority decisions. Political equality is secured by the principle of _one man on vote', which implies that there will be no privileged sections claiming special weightage nor any underprivileged section whose voice is ignored. No discrimination is allowed on grounds of religion, race

PDF Reader Trial

caste, sex, place of birth or ownership of property. The principle of majority rule relies on the wisdom of the majority.

BOX1: Popular Sovereignty:

It means people's rule. The authority of the State and government is created and sustained by the consent of its people, through their elected representatives.

It means people are supreme authority and not the elected representatives.

4. Constitutional government and Rule of Law: Constitutional government means _government by law' rather than by men. Democracy requires an infinitely complex machinery of process, procedures and institutions to translate the majority will into action. If one compromises with the law, rampant corruption and decay of democracy is ensured. It is, therefore, essential to have a well-established tradition of law and constitution for the stability of a democratic government.

Box 2: Constitutional Supremacy

As the rule book the constitution is supreme and not the Parliament. The laws emanating from the constitution should supersede all laws

II. Dimensions of Democracy: Social Democracy, Economic and Political Definition

a democratic welfare state that incorporates both capitalist and socialist practices. **Meaning:** Social Democracy is a political, social and economic ideology that supports economic and social interventions to promote social justice within the framework of a capitalist economy, as well as a policy regime involving a commitment to representative democracy, measures for income redistribution, and regulation of the economy in the general interest and welfare state provisions. Social democracy thus aims to create the conditions for capitalism to lead to greater democratic, egalitarian and solidaristic outcomes; and is often associated with the set of socioeconomic policies that became prominent in Northern and

PDF Reader Trial

Western Europe. In India Dr. B.R Ambedkar the Chairman of the Drafting Committee of the Constitution strongly advocated for Social Democracy.

Core values of Social Democracy are as follows.

1. **Freedom, Equality and Fraternity:** This was the battle-cry of the French Revolution; and these broadly remain the core values of democratic parties today. The formulation of core values began in the nineteenth century with the rise of the bourgeoisie and they began to conquer the world at the latest in the mid-twentieth century – they came to be the standard by which states and societies were judged.

2. **This is also reflected in the legal foundations of the United Nations**. With the UN‘s two Human Rights Covenants of 1966 the fundamental civic, political, economic, social and cultural rights attained the apex of their legitimacy and have been ratified by almost every country in the world. They constitute something like a global legal foundation. Fundamental rights are supposed to ensure the transposition of core values into formal legal claims.

3. Fundamental Rights: These are the rights enshrined in the constitutions of democratic countries. These are claims that individuals have in a state. In India, Fundamental Rigts are enshrined in Part III of the constitution. If the fundamental rights are abridged by any individual or the state, any citizen can move the Supreme Court or the High courts.

BOX 2: Six Fundamental Rights:
Right to equality
Right to freedom
Right against exploitation Right
to freedom of religion
Educational and cultural right
Right to constitutional remedies

Economic democracy or stakeholder democracy is a socioeconomic philosophy that proposes to shift decision-making power from corporate managers and corporate shareholders to a larger group of public stakeholders that includes workers, customers, suppliers, neighbours and the broader public. No single definition or approach encompasses economic democracy, but most proponents claim that modern property relations externalize costs, subordinate the general well-being to private profit, and deny the polity a democratic voice in economic policy decisions. In addition to these moral concerns, economic democracy makes practical claims, such as that it can compensate for capitalism's inherent effective demand gap.

PDF Reader Trial

Political Democracy is a means for the people to choose their leaders and to hold their leaders accountable for their policies and their conduct in office. The people decide who will represent them in parliament, and who will head the government at the national and local levels. They do so by choosing between competing parties in regular, free and fair elections. Government is based on the consent of the governed. In a democracy, the people are sovereign—they are the highest form of political authority. Power flows from the people to the leaders of government, who hold power only temporarily. Political Democracy is a means for the people to choose their leaders and to hold their leaders accountable for their policies and their conduct in office. The people decide who will represent them in parliament, and who will head the government at the national and local levels. They do so by choosing between competing parties in regular, free and fair elections. Government is based on the consent of the governed. In a democracy, the people are sovereign—they are the highest form of political authority. Power flows from the people to the leaders of government, who hold power only temporarily.

B. Decentralisation:

Decentralisation can be usefully understood as a political process whereby administrative authority, public resources and responsibilities are transferred from central government agencies to lower-level organs of government or to non-governmental bodies, such as community-based organisations (CBOs), _third party‘ non-governmental organisations (NGOs) or private sector actors

In 1993, the Government of India passed a series of constitutional reforms, which were intended to empower and democratise India‘s rural representative bodies – the Panchayats. The 73rd Amendment to the Constitution formally recognised a third tier of government at the sub-State level, thereby creating the legal conditions for local self-rule – or Panchayati Raj. Since this time, the process of decentralisation has been highly variable, ranging from ambitious attempts at Gram Swaraj (or village self-rule).

PDF Reader Trial

Box 3: Political, administrative and fiscal decentralisation.

Political decentralisation transfers policy and legislative powers from central government to autonomous, lower-level assemblies and local councils that have been democratically elected by their constituencies.

Administrative decentralisation places planning and implementation responsibility in the hands of locally situated civil servants and these local civil servants are under the jurisdiction of elected local governments.

Fiscal decentralisation accords substantial revenue and expenditure authority to intermediate and local governments.

Source: World Bank

Defining features of Decentralisation:

- popular control of policy makers, both by regular elections and by the pressure of social interest groups;
- the institutionalisation of all adult citizens in voting (i.e. one person, one vote);
- political freedom in the eyes of the state;
- policy decisions made on the basis of majority rule

What makes local institutions accountable?

In this section, we consider three broad conditions under which local institutions can be made more accountable to poor and politically marginal groups:

- an active citizenry, whose participation in broad areas of political life, such as voting, campaigning, attending meetings, running for office, lobbying representatives, etc., serves to counter balance the arbitrary use of power;
- fiscal and political support from higher level authorities within government;
- the existence of competitive political parties whose legitimacy depends at least in part on the ability to support the needs of the poor.

C. Challenges before Democracy

The basic challenges before democracy in India are poverty, illiteracy, lower participation, criminalisation of politics, political violence, corruption, communalism, Regionalism.

PDF Reader Trial

Apart from this the two very crucial areas of (non)participation are women and marginalised sections.

Women

After family, patriarchy exists most in politics. Women are always considered to be the secondary citizens of the country. Hence, the opportunities for participation are minimal to them. In most cases they do not even have the right to select their own candidates and are often forced to vote for a candidate who the head of the family (generally male) askes to. If at all women come out to vote during various elections from parliamentary to state legislature to the local bodies of Municipal corporations, municipal councils, the zilla-parishads to panchayat samities to the gram panchayat, the turnout is generally very low. As regards contesting elections women though 33% reservation is available very few women volunteer for the same. As the posts are reserved the political families or the male members of the family operate from behind the curtain.

Marginalised population:

As regards the marginalised sections (the dalits, the tribals, casual workers, fisher folks, construction, migrated and labour, the voting percentage is very low. The government machinery cannot all the time attempt to bring them to the main stream. Hence community initiatives are most needed in this sphere. These marginalised groups are not even registered voters and hence a large number of people are out of the fray of election and in turn democratic process. It is therefore imperative to bring these people into the political sphere of the country.

PDF Reader Trial

II. Elections to Local Self Government Bodies:

India is considered as one of the largest functional democracy in the world. This democratic Experiment has withstood the test of the time.it has been possible because we have been able to conduct free and fair elections at regular interval (Except during 1976 Emergency). The constitution of India guarantees its people right to choose their representatives and people who govern them. This takes place through elections at following three levels:

National Level: At this level people directly elect their representatives to the House of People i.e. Lok Sabha for a period of five years. The person elected thus is a representative of that particular area or constituency in the parliament. E.g. Lok sabha has 543 members which are directly elected by the peole through the first past the post system. People cast their votes for candidates belonging to a variety of political parties. The one who secures highest number of votes is declared elected. Members of the Council of States i.e. Rajya Sabha are indirectly elected by members of Lok Sabha and members of the state legislative assembly.

State Level: The parliamentary form of government has been adopted at the state level as well. At this level people of a particular state directly elect their representatives to the state legislative Assembly i.e. Vidhan Sabha for a period of five years. The person elected thus is a representative of particular area or constituency from a state in the state legislature. E.g. State legislature of Maharashtra has 288 members in the Vidhan Sabha which are directly elected by the people of the state of Maharashtra.

Local Level: In order to achieve ideals of good governance the constitution of India since 1990‘s has added one more tier to the government, in the form of local self-governing bodies, both in rural and urban areas. In this part of the chapter we shall go into details of Urban and Rural Local Body Elections.

Institutions at the Local Level:

The geographical length and breadth of our country coupled with unimaginable socio cultural diversity makes her a unique nation state. In addition to this a huge population pose many governance challenges before us. Our constitution has divided the powers and functions between the union and state in the form of three lists mentioned in part VII of the constitution. But with changing times and growing expanse of governance, it was realised that a government is needed which closer to people, where people are part of the governing

PDF Reader Trial

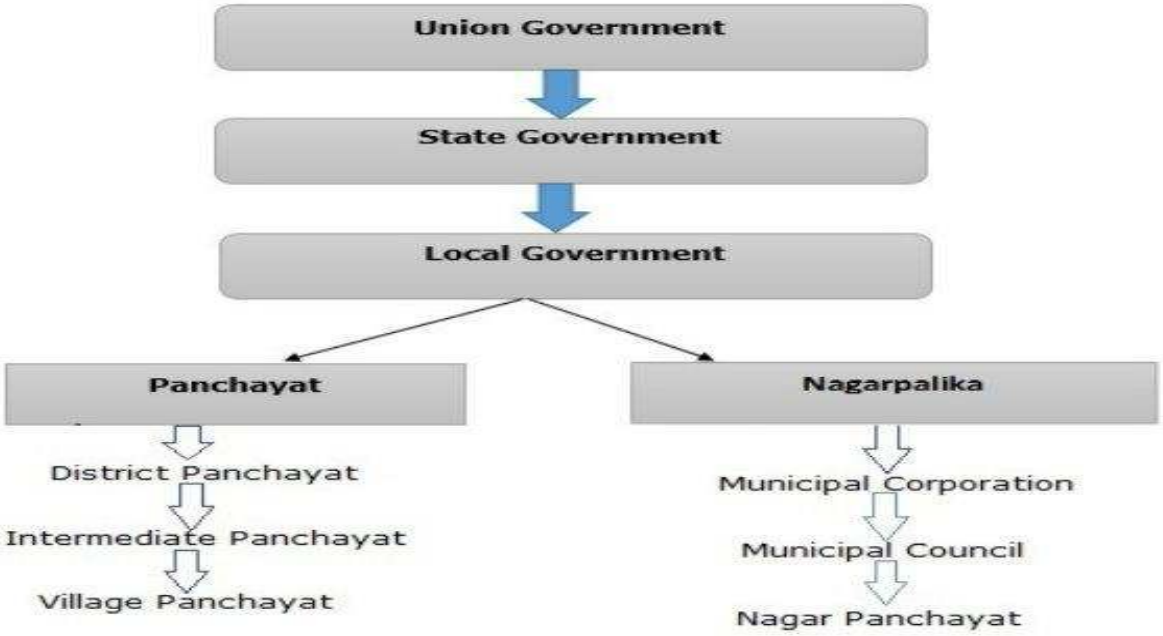
process and also a part of electing their own local representatives to address their local problems and concerns. To this effect in 1993 two historic constitutional amendments were passed by the Indian Parliament. The 73rd CAA and 74th CAA celebrate the spirit of local democracy and local governance in India.

Constitutional Provisions of the 73rd & 74th Constitutional Amendment Acts:

The 73rd and 74th Amendment to the Constitution of India has given legal sanctity to the Panchayat Raj System in rural arrears and Municipal Governance in Urban areas. India has a chequered history of local self-governing bodies working at the local level. The council of five elderly members from a village i.e. Panchayat existed in India since time immemorial. Sir Charles Metcalf called these village communities as ‗Little Republics'. But with the passage of time these communities became dysfunctional. After independence, through the recommendations of various committees like Balwant Rai Mehata Committee, Ashok Mehta committee and others, Indian government tried to revive these institutions. But unfortunately they all failed miserably. However with the onsets of liberal reforms in 1990's , the process of decentralisation also gained momentum. And finally in 1993 73rd and 74th CAA were passed by the Indian Parliament. These acts implement Article 40 of the DPSP. It added Part XI and XI A to the constitution. It covers Article 243 to 243 O which relates to Panchayati Raj System in rural areas and Article 243 P to 243 ZG which relates to urban local governance in India. These acts also added two schedules to the constitution, namely 11th and 12th schedule. The 11th schedule prescribes a list of 29 functions to be performed by rural local bodies and 12th schedule prescribes a list of 18 functions to be performed by the urban local bodies.

These two acts have added third tier to the federal framework of our Government and thus it makes India a unique three tier federal democratic polity in the world. The following flow chart explains this:

PDF Reader Trial



Important features of the 73rd and 74th Constitutional Amendment Acts:

1) **Gram Sabha or Ward Sabha (Meetings) :** It is a deliberative body at the grassroots level. It comprises of all the registers voters in a village in rural areas or a ward in an urban area. It is the foundation of local democracy and process of decentralisation of powers in India. People at grassroots level can directly participate in the meetings of Gram Sabha or Ward Meeting, where they can discuss issues concerning them, offer suggestions, question their representatives and also approve the plans and budgets prepared by their representatives. In a way it‘s a miniature of the parliament of India at the grassroots level.
2) **Reservation of seats for SC/ St and Women:** In order to provide fair and equal representation to all the sections of the society, seats are reserved for SC, ST in proportion to their population. Along with this, one third seats are also reserved for women candidates. States like Maharashtra, Madhya Pradesh, Gujarat now reserve fifty per cent of the seats in their Panchayati raj institutions.
3) **State Election Commission:** This amendment provides for the establishment of the State Election Commission for conduct of elections to the urban and rural local self-government. This consist of Municipal Corporations, Municipal Councils, Nagar Panchayats in urban areas and Zilla Parishads, Panchayat Samitis, Village Panchayats

PDF Reader Trial

in rural areas. This amendment made provision of Article 243-K and 243-ZA wherein State Election Commission were established. The main objective for 73rd and 74th amendment and making this provision was to create independent status of State Election Commission so that elections are conducted in free and fair, without other intervention.

Role of an individual towards electoral process at the local level:

Democracy as a system and as a way of life becomes meaningful only when there is active participation of people in the electoral process. Following suggested activities help us understand our role as a citizen and as an individual in the electoral process.

Suggested Activities:

1) Find out the name of elected local representative from your rural or urban area in which you live. What promises he made at the time of election and how much work he had done in your area?
2) Register yourself in the voters list of your area of residence, to be able vote at the time of National, State or local Elections. If you shift your residence then you also must shift your name to the voters list of that area. Voter registration can now be done online as well.
3) Visit a Local body. E.g. Gram Panchayat or Municipal Corporation or Zilla Parishad
4) Attend a Gram Sabha or Ward Meeting in your own area.
5) Find out what functions rural or urban local bodies are supposed to perform in your Area.
6) Find out what are the problems, challenges and concerns of your area. What steps local body has taken to address the same?
7) Find out the names of political parties which contested election in your area last time. What was their electoral manifesto or agenda? How far the party has been able to address the local concerns? What is their party ideology? What is their party symbol?

PDF Reader Trial

III. Good Governance

Introduction:

Governance has been defined to refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment and broad based participation. When a government sticks to these principles while making policies and implementing them, it is said to be good governance.

Let us now look at the concept of Good Governance in detail.

Meaning of Good Governance:

In 1989, the concept of ‗governance' was for the first time highlighted in a World Bank study ‗Sub-Saharan Africa-from Crisis to Sustainable Growth' to describe the need for institutional reform and a better and more efficient public sector in Sub-Saharan countries. The study report mentioned four key dimensions of good governance:

i. Public sector management
ii. Accountability
iii. Legal framework for development
iv. Information and transparency

For a country like India where democracy forms the base of all the governing systems, governance needs to be inclusive and is largely determined by the participation of its people. In a democracy like ours, a system of governance which is accountable and transparent demands the participation of people at every level. People's participation on one hand can help the government formulate better policies which can be communicated to the society again through participation and also implemented well with its help.

If policies of the government are inclusive and people friendly, it would help encourage the participation of citizens in the mainstream political process. In turn, when people participate directly- by contesting or indirectly by voting or by being a part of the electoral process, it would help strengthen the government and would help in brining more people friendly policies.

PDF Reader Trial

Good governance thus has to be understood as a two way process- the government should ensure that the values of good governance like accountability and transparency are taken care of while framing policies while on the other hand, people should participate in the process of governance to make it better.

After having a detailed discussion about the origin, development and meaning of good governance, let us try to understand the essential components of good governance reflected in the various documents and study reports of international organisations, policy makers and in the writings of the researchers and academicians.

Characteristics of Good Governance:

1. **Participation:**

   The first characteristic refers to equal participation by all members of society as the key element of good governance, with everyone having a role in the process of decision-making. Participation could be either direct or through legitimate intermediate institutions or representatives. Participation needs to be informed and organized. This means freedom of association and expression on the one hand and an organized civil society on the other hand. All the section of society should be allowed to express their concerns in the policy making influencing them without any fear and discrimination.

2. **Rule of Law:**

   Good governance requires fair legal frameworks that are enforced impartially. It also requires full protection of human rights, particularly those of minorities. Impartial enforcement of laws requires an independent judiciary and an impartial and incorruptible police force. It also involves provision of free legal aid to the poor and needy people who cannot afford to pay to the legal practitioner. It focuses on judicial and legislative reforms and the importance of legal education and training.

3. **Transparency:**

   Transparency means that decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to those who will be affected by such decisions and their enforcement. It also means that enough information is provided and that it is provided in easily understandable forms and media.

PDF Reader Trial

4. **Responsiveness:**

   Good governance requires that institutions and processes try to serve all stakeholders within a reasonable timeframe. By being responsive, governmental institutions gain _legitimacy' in the public realm which will automatically ensure their wider acceptance and thus effectiveness in governance.

5. **Consensus oriented**:

   There are several actors and as many viewpoints in a given society. Good governance requires mediation of the different interests in society to reach a broad consensus in society on what is in the best interest of the whole community and how this can be achieved. It also requires a broad and long-term perspective on what is needed for sustainable human development and how to achieve the goals of such development.

6. **Equity and inclusiveness:**

   A society's well-being depends on ensuring that all its members feel that they have a stake in it and do not feel excluded from the mainstream of society. This requires all groups, but particularly the most vulnerable, have opportunities to improve or maintain their well-being.

7. **Effectiveness and efficiency**:

   Good governance means that processes and institutions produce results that meet the needs of society while making the best use of resources at their disposal. The concept of efficiency in the context of good governance also covers the sustainable use of natural resources and the protection of the environment.

8. **Accountability:**

   Accountability is a key requirement of good governance. Not only governmental institutions but also the private sector and civil society organizations must be accountable to the public and to their institutional stakeholders. Accountability cannot be enforced without transparency and the rule of law.

Government, Governance and Good Governance:

PDF Reader Trial

The word _Governance‘ lends itself to wider meaning which includes the processes as well as the results, making it more comprehensive in meaning and implications than the word _government‘. Government refers to the machinery and institutional arrangements of the _political community‘ whereas governance means making policies for the development of organisations as well as people.

While governance, on the one hand, deals with collaborative partnership networks which are necessary for policy formulation and implementation, good governance, on the other hand, attempts to make this activity not just efficient but also more accountable, democratic and responsive to the public needs.

Good governance goes beyond the formal institutions of democratic government to address several other central issues which includes — representative legislature; non-discriminatory laws; efficient, impartial and rapid judicial processes; transparent public agencies; Universal protection of human rights; accountability for decisions by public officials, devolution of resources and decision making to local.

Good Governance in India:

Kautilya‘s Arthashastra highlighted the principle of good governance as, ‑In the happiness of his people lies king‘s happiness, in their welfare his welfare, whatever pleases himself he shall not consider as good, but whatever pleases his people he shall consider as good.‖

The Indian Constitution has not used the term even once in its preamble. Indeed, the Constitution has used _governance‘‘ only once — in its directive principles of state policy. Article 37 says: _The provisions contained in this part shall not be enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the state to apply these principles in making laws.‘‘ The directive principles of the state policy emphasize the _content‘‘ part of good governance. E.g. Right to an adequate means of livelihood, Equal pay for equal work for both men and women is ensured, equitable distribution of resources etc.

The problem of good governance (read administrative reform) is discussed in each five-year plan as well as by parliamentary committees. Besides, the Government of India has appointed

PDF Reader Trial

no less than 34 committees devoted to good governance making a large number of recommendations.

The plan documents in post 1990 reflected the essential principles of good governance including constitutionally protected right to elect government, accountable and transparent government, effective and efficient delivery of social and economic public services, a special attention for ensuring the effectiveness and efficiency of local governments, delivery of key services such as primary education and health, the rule of law, protection of the disadvantaged groups, especially the SCs, STs, minorities and others etc.

One of the best policies that has set an example in the country is the Right to Information Act which came into full force in the midnight of 12th and 13th October 2005. Under the act any citizen can seek information from government or public authorities as notified in the act. The act seeks to deepen Indian democracy by empowering the citizens to obtain the needed information from the public authorities at the national, state and local levels and aims at good governance by ensuring the much-needed transparency and accountability in them.

Another such initiative is The National Rural Employment Guarantee Act (NREGA), 2005, which has now been renamed as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).It is one such step towards implementing the provision of Right to Work and is the largest social welfare scheme of its kind in the world.

Even The Right to Education (RTE) Act, 2009, may be legitimately hailed as one of major landmark legislations that have been enacted by Parliament in the 21st century, with a view to achieve the objectives of Good Governance. It aims at fulfilling the promise of universal education by making it a mandatory obligation for the state to ensure that all children of the 6-14 years age group enroll themselves in schools and attend the classes.

In conclusion

After understanding the concept, meaning, principles and examples of good governance, one can infer that it is a broad and dynamic concept. Governance to become good governance needs participation of people at each stage through which ideals of the same can be achieved for a better welfare of people. The values of good governance need to be cherished and

PDF Reader Trial

practiced in a true sense to make governance more efficient, effective and beneficial to the citizens.

Operation of the syllabus:

The syllabus has to be operationalized in the following manner

- Apart from the theoretical understanding given in the above section, the students should be encouraged to follow democratic principles in their daily life
- They should be encouraged to make presentations on various electoral processes
- They should be encouraged to propagate and enthuse for registering voters
- The students should ensure full class registers as voters if they are not.
- The school/colleges may have essay writing competitions on electoral/democratic Processes
- Interview atleast on elected representative or politically active individual or one who had contested election to anybody in the area and make presentation in the class.
- Role play, skits, short stories, short dramas, short films in case of BMM students', posters (fine and applied arts students) be used for part assessment during the course.
- Depending upon the activities carried out by the students' one student be declared leader of the month.
- Mock Elections can be organised in your institutions.

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1)	----------	**Democracy, Elections and Good Governance**

PDF Reader Trial

Nature of Question Paper :-

Time: - 60 Minutes. Total Marks: - 50

Q. 1 Multiple choice questions (One Marks each) 50

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)
15)
16)
17)
18)
19)
20)
21)
22)
23)
24)
25)
26)
27)
28)
29)
30)
31)
32)
33)
34)
35)
36)
37)
38)
39)
40)
41)
42)
43)
44)
45)
46)
47)
48)
49)
50)

Note :- Exam should be conducted with Objective Question paper through OMR **or** Online Mode.

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

ALL BRANCHES

CBCS Syllabus for

F.E. (All Branches) w.e.f. Academic Year 2016-17

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
CBCS Curriculum for First Year (All Branches)
WEF 2016-17

- Semester I : Theory Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$	4			4	70	30		100
C112	Engineering Mathematics I	3			3	70	30		100
C113	Applied Mechanics	4			4	70	30		100
C114	Basic Electrical Engineering	3			3	70	30		100
C115	Basic Mechanical Engineering	3			3	70	30		100
C116	Communication Skills	1			1		25		25
	Total	18			18	350	175		525

- Semester I : Laboratory / Tutorial Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$			2	1			25	25
C112	Engineering Mathematics I		1		1			25	25
C113	Applied Mechanics			2	1			25	25
C114	Basic Electrical Engineering			2	1			25	25
C115	Basic Mechanical Engineering			2	1			25	25
C116	Communication Skills			2	1			25	25
C117	Workshop Practice			2	1			25	25
	Total		1	12	7			175	175
	Grand Total	**18**	**1**	**12**	**25**	**350**	**175**	**175**	**700**

PDF Reader Trial

- Semester II : Theory Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$	4			4	70	30		100
C122	Engineering Mathematics II	3			3	70	30		100
C123	Engineering Graphics	3			3	70	30		100
C124	Basic Civil Engineering	3			3	70	30		100
C125	Computer Programming	2			2		25		25
C126	Basic Electronics	2			2	35	15		50
C127	Professional Communication	1			1		25		25
	Total	18			18	315	185		500

- Semester II : Laboratory / Tutorial Courses

Course Code	*Name of the Course*	*Engagement Hours*			*Credits*	*FA*	*SA*		*Total*
		L	*T*	*P*		*ESE*	*ISE*	*ICA*	
C011/ C012	Engineering Physics / Engineering Chemistry$			2	1			25	25
C122	Engineering Mathematics II		1		1			25	25
C123	Engineering Graphics			4	2			25	25
C124	Basic Civil Engineering			2	1			25	25
C125	Computer Programming			2	1	25#		25	50
C126	Basic Electronics			2*	1			25	25
C127	Professional Communication			2	1			25	25
C128	Audit Course- Workshop for Skill Development			@	AU	Audit Course			
	Total		1	13	8	25		175	200
	Grand Total	**18**	**1**	**13**	**26**	**340**	**185**	**175**	**700**

- Legends used –

L	Lecture	FA	Formative Assessment
T	Tutorial	SA	Summative Assessment
P	Lab Session	ESE	End Semester Examination
		ISE	In Semester Evaluation
		ICA	Internal Continuous Assessment

PDF Reader Trial

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. * - Indicates the subject 'Basic Electronics' shall have lab session every alternate week

3. # - Indicates the subject 'Computer Programming' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

4. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

5. Audit Course 'Workshop for Skill Development' intends to develop few basic skills amongst student related to any one engineering discipline of student's choice (irrespective of his discipline of admission). There is no separate laboratory hours specified for this course. Student can use some of the respective laboratory sessions in the semester for this course as indicated below. If required, student can work beyond regular engagement hours under supervision of the concerned teacher to complete this course.

Sr.	*Skill Development in*	*Course of which some laboratory hours can be used*
1	Electronics, Electronics & Telecommunication, Electrical, Electrical & Electronics, Biomedical Engineering	Basic Electronics
2	Computer Science & Engineering, Information Technology	Computer Programming
3	Mechanical Engineering, Biomedical Engineering	Engineering Graphics
4	Civil Engineering	Basic Civil Engineering

PDF Reader Trial

Each institute is at liberty to decide content to be delivered under this course by an apt teacher. However it is desirable that this course shall nurture individual and team working skills of the student. Some of the exemplary skills (but not limited to) are listed in curriculum of this course.

The summative assessment of this course shall be carried out at institute level and the institute shall certify successful completion of this audit course by student.

6. @- indicates there is no separate laboratory hours for Audit Course- Workshop for Skill Development

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

PDF Reader Trial

Solapur University, Solapur

F.E. (All Branches) Semester-I

C116 COMMUNICATION SKILLS

Teaching Scheme
Theory – 1 Hrs. /Week
Laboratory– 2 Hr. /Week

Examination Scheme
ISE - 25 Marks
ICA – 25 Marks

- **Course Objectives :**

C116.O1	To make student comprehend and apply rules of grammar for his written and spoken communication
C116.O2	To enhance student's skill in word usage and sentence formation for day to day communication.
C116.O3	To enhance speaking skills of the student.
C116.O4	To nurture reading and comprehension skills of the students.
C116.O5	To prepare students for professional written communication.

- **Course Outcomes :**

At the end of this course,

C116.1	Student can frame grammatically correct sentences for day to day communication
C116.2	Student can use appropriate words in oral and written communication.
C116.3	Student can demonstrate effective speaking skills in various situations
C116.4	Student can comprehend and analyze a passage.
C116.5	Student can draft letters, emails and write paragraphs with appropriate content and context.

PDF Reader Trial

- **Course Curriculum**

Unit No 01: English Grammar		**Hours : 06**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
1.1	Articles, nouns, pronouns, verbs, modal verbs, auxiliary verbs & tenses	03	Sentence formation, corrections / error finding	Receiving, responding, organizing
1.2	Adjectives, adverbs, prepositions, conjunctions	02	Sentence formation, corrections / error finding	Receiving, responding, organizing
1.3	Idioms & phrases	01	Meaning of the idioms & phrases and using them appropriately	Receiving, responding

Unit No 02: Vocabulary		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
2.1	Synonyms & antonyms	01	Synonym / antonym of the given word	Receiving, responding
2.2	Prefixes & suffixes	01	Word formation.	Receiving, responding

Unit No 03: Speaking Skills		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
3.1	Situational conversation	01	Role play based on formal or informal conversation, writing a conversation based on a situation	Receiving, responding, organizing
3.2	Impromptu speaking –extempore	01	Extempore speech	Receiving, responding, organizing, characterizing

PDF Reader Trial

Unit No 04: Reading Comprehension		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
4.0	Reading comprehension	02	Questions based on paragraph	Receiving, responding

Unit No 05: Fundamental Writing Skills		**Hours : 03**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
5.1	Writing business letters	01	Writing a professional / business letter	Receiving, responding, organizing
5.2	E-mail communication	01	Writing a professional email	Receiving, responding, organizing
5.3	Paragraph writing	01	Writing a paragraph of about 150 words	Receiving, responding, organizing

- **In Semester Evaluation (ISE) –**
  ISE shall be based on three theory examination conducted at institute level covering above curriculum. Examinations shall include sufficient questions covering all topics / subtopics
- **Internal Continuous Assessment (ICA) -**
  ICA shall be based on performance of the student during the laboratory sessions in Language Lab covering minimum 12 exercises out of the below-

1. Grammar Exercise –I based on articles, nouns and pronouns.
2. Grammar Exercise –II based on verbs, modal verbs, auxiliary verbs & tenses
3. Grammar Exercise –III based on adjectives, adverbs, prepositions, conjunctions
4. Grammar Exercise –IV based on idioms and phrases
5. Vocabulary – Based on the synonym of the given word
6. Vocabulary – Based on antonym of the given word
7. Exercise on word formation (prefixes / suffixes)
8. Writing a conversation based on a formal situation
9. Writing a conversation based on a informal situation
10. Exercise based on reading comprehension
11. Professional / business letter writing
12. Professional / business Email writing
13. Writing a paragraph of about 150 words on a given topic.
14. Extempore speech on a given topic

PDF Reader Trial

- **Text Books:**

1. English Grammar Just for You, Rajeevan Karal, Oxford University Press
2. Technical English, Dr. M. Hemamalini, Wiley India Pvt. Ltd
3. Word Power Made Easy, Norman Lewis, Goyal Publishers
4. English for Practical Purposes , Z. N. Patil, B.S. Valke, A.R. Thorat, Zeenath Merchant
5. Communication Skills, Sanjay Kumar, Pushpa Lata, Oxford Publication

- **References Books:**

1. English Grammar & Composition , Wrenn & Martin, S. Chand
2. Business Communication, Shalini Kalia, Shailja Agarwal, Wiley
3. Communication Skills for Technical Students, T. M. Farhathullah, Orient Black Swan
4. Longman Dictionary of Contemporary English, Longman
5. Longman Essential Activator, Longman Pearson
6. Technical English, Dr. M. Sambaiah, Wiley India Pvt Ltd
7. Business Communication, Shruti D. Naik, Biztantra

PDF Reader Trial

Solapur University, Solapur

F.E. (All Branches) Semester-II

C127 PROFESSIONAL COMMUNICATION

Teaching Scheme	**Examination Scheme**
Theory – 1 Hrs. /Week	**ICA –** 25 Marks
Laboratory– 2 Hrs. /Week	**ISE -** 25 Marks

- **Course Objectives :**

C127.O1	To nurture student's effective presentations skills
C127.O2	To equip student with skills for participating effectively in group discussion and personal interview
C127.O3	To enhance the writing skills of the students with special reference to resume and report writing.
C127.O4	To inculcate soft skills in students for personal and professional success.

- **Course Outcomes :**

At the end of this course, student will able to

C127.1	Prepare good quality presentation and deliver it effectively.
C127.2	Participate dynamically in group discussion and can face mock personal interview successfully
C127.3	Prepare good quality resume and various other reports.
C127.4	Exhibit various soft skills like team working and leadership in different situations.

PDF Reader Trial

- **Course Curriculum**

Unit No 01: Presentation Skills		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
1.0	Presentation- effective planning, preparing & delivering	02	Preparing and delivering presentations	Organizing, characterizing

Unit No 02: Group Discussion		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
2.0	Group Discussion- introduction, traits evaluated, types, tips for successful participation, individual Traits	02	Mock group discussion	Receiving, responding, organizing, characterizing

Unit No 03: Personal Interview		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
3.0	Introduction, types of interviews, preparatory steps for employment interviews, skill tips, frequently asked questions during interviews	02	Mock personal interview	Receiving, responding, organizing, characterizing

Unit No 04: Higher Writing Skills		**Hours : 02**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
4.1	Resume preparation	01	Writing resume for various purposes	Receiving, responding, organizing, characterizing
2.2	Technical report writing- types, structures, data collection, content, form	01	Write a report on event / industrial visit / project	Receiving, responding, organizing, characterizing

PDF Reader Trial

Unit No 05: Induction to Soft Skills		**Hours : 07**		
Sr.	*Subunit*	*Hours*	*Assessment*	*Bloom's Level*
5.1	Personal SWOC analysis	07	Assessment through presentation, exercise, case study, role play, skit and group activity	Organizing, valuing, characterizing
5.2	Goal setting			
5.3	Motivation			
5.4	Leadership and team working			
5.5	Ethical values			
5.6	Stress management			
5.7	Emotional intelligence			
5.8	Positive thinking and attitude			
5.9	Decision making			
5.10	Creativity			

- **In Semester Evaluation (ISE) –**
  ISE shall be based on three theory examination conducted at institute level covering above curriculum. Examinations shall include sufficient questions covering all topics / subtopics

- **Internal Continuous Assessment (ICA) -**
  ICA shall be based on performance of the student during the laboratory sessions in language Lab covering minimum12 exercises out of the following exercises:

  1. Power point presentation and a delivery
  2. Writing views on a topic for group discussion in about 180 words
  3. Participation in a group discussion
  4. Writing responses to the frequently asked questions in personal interview
  5. Mock personal interview.
  6. Resume writing for various purposes
  7. Industrial visit report writing
  8. Other technical report writing
  9. Self SWOC analysis
  10. Oral presentation on self short term and long term goals
  11. Writing self short term and long term goals
  12. Role play on leadership and team working
  13. Writing an essay (300 words) on positive thinking and attitude, emotional intelligence

PDF Reader Trial

14. Case study on decision making, stress management, positive thinking, ethics, creativity, success stories, business decisions, entrepreneurship etc

✓ *Note – Students shall be encouraged to use internet and ICT tools for compilation, analysis, report writing and presentation.*

- **Text Books:**

1. Soft Skills: An Integrated Approach to Maximize Personality, Gajendra Singh Chauhan & Sangeeta Sharma- Willy Indian Pvt. Ltd.
2. Soft Skills for Mangers, Dr. T. Kalyana Chakravarthi & Dr. T. Latha Chakravarthi , Biztantra Publication
3. Technical English, Dr. M. Hemamalini, Willy Indian Pvt. Ltd
4. Professional Speaking Skills, Aruna Koneru, Oxford University Press

- **References Books:**

1. Soft Skills, K. Alex, S. Chand Publications New Delhi
2. Soft Skills – A Text book for Undergraduates, Ajay R Tengse, Orient Black Swan
3. Communication Skills, Sanjay Kumar, Pushpa Lata, Oxford University Press
4. Managing Soft Skills for Personality Development, B N Ghosh, McGraw Hill Publication
5. Soft Skills for Everyone, Jeff Butterfield, Cengage Learning
6. Communication Skills (Revised), Bretag, Crossman, Bordia, Tata McGraw Hill

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

PDF Reader Trial

SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
STRUCTURE OF F.E(ALL BRANCHES) W.E.F 2012-13

Semester-I

Sr.No	Subject	Teaching Scheme			Examination Scheme			
		Lectures	Tutorials	Practical	Paper		Term work marks	Total
					Theory marks	Online marks		
1	Engineering Mathematics-I	3	1		100		25	125
2	Engineering Physics(Group A)/ Engineering Chemistry (Group B) $	4			100			100
3	Basic Mechanical Engineering	3			100			100
4	Basic Electrical Engineering	3			100			100
5	Applied Mechanics	4			100			100
6	Communication Skill - I	1	2*				50	50
7	Lab I/Lab II : Engineering Physics(Group A)/ Engineering Chemistry (Group B) $			2			25	25
8	Lab III : Basic Mechanical Engineering			2			25	25
9	Lab IV : Basic Electrical Enginering			2			25	25
10	Lab V : Applied Mechanics			2			25	25
11	Lab VI: Workshop Practice			2			25	25
		18	2	10	500		200	700
		Total Hours:30			Total Marks:700			

Semester-II

Sr.No	Subject	Teaching Scheme			Examination Scheme			
		Lectures	Tutorials	Practical	Paper		Term work marks	Total
					Theory marks	Online marks		
1	Engineering Mathematics-II	3	1		100		25	125
2	Engineering Chemistry (Group A)/ Engineering Physics(Group B) $	4			100			100
3	Basic Civil Engineering	3			100			100
4	Engineering Graphics	4			100			100
5	Basic Electronics and Computer Programming	4			50@	50#		100
6	Communication Skill - II	1	2*				25	25
7	Lab II/Lab I Engineering Chemistry (Group A) / Engineering Physics(Group B) $			2			25	25
8	Lab VII : Basic Civil Enginering			2			25	25
9	Lab VIII : Engineering Graphics			4			50	50
10	Lab IX : Basic Electronics			2*			25	25
11	Lab X : Computer Programming			2			25	25
		19	2	11	450	50	200	700
		Total Hours:32			Total Marks:700			

Note: * Indicates Practicals are at alternate week.

$ At F.E. about half students shall be enrolled under Group A , who will undergo Engineering Physics in Semester – I & Engineering Chemistry in Semester – II , whereas remaining students shall be enrolled under Group B, who will undergo Engineering Chemistry in Semester – I & Engineering Physics in Semester – II . Institute is authorised to divide the students in Group A & Group B.

@ indicates Theory paper will be on contents of Basic Electronics for two hours duration.

# indicates Online examination will be conducted on contents of Computer Programming.

PDF Reader Trial

Solapur University, Solapur
F.E. (All Branches) Semester-I
6.Communcation Skills-I

Teaching Scheme

Theory: - 1 Hr/Week

Tutorials: - 2 Hrs/Week *

Examination Scheme

Term-Work – 50 Marks

Course Objectives

1. To enhance LSRW skills of students
2. To develop students knowledge of Grammar
3. To develop Soft Skills in Students

Course Outcome

1. LSRW skills
2. Grammar
3. Soft Skills

Unit 1. Grammar **(4 Hrs)**

(Parts of Speech, Articles, Tenses, Modal Auxiliaries, Idioms & Phrases)

Unit 2. Letter Writing **(2 Hrs)**

i. Leave application Letter

ii. Covering Letter/Job Application letter

Unit 3. C.V / Resume Writing **(2 Hrs)**

Unit 4. Group Discussion **(2 Hrs)**

(Group discussion as a part of selection process, structure of GD, dynamics of group behaviour,techniques of effective participation, team work and use of body language)

Unit 5. Situational Conversation **(2 Hrs)**

Unit 6. Reading Comprehension for Competitive Exams **(2 Hrs)**

PDF Reader Trial

Tutorials:

1. Grammar Exercises (2 Sessions)
2. Letter Writing (2 Sessions)
3. C.V / Resume Writing (2 Sessions)
4. Group Discussion (4 Sessions)
5. Situational Conversations (2 Sessions)
6. Reading Comprehension for Competitive Exams (2 Sessions)

Note: * Indicates Tutorials are at alternate week.

Text Books:

1. Realms of Gold- S.Sagare, N.Pawar, R.Ingale, Orient Longman
2. English for Practical Purposes, Z.N. Patil, B.S. Valke, A.R. Thorat, Zeenat Merchant, Macmillan

Reference Books:

1. Essentials of English Grammar - Raymond Murphy, Cambridge University Press
2. Intermediate English Grammar- Raymond Murphy, Cambridge University Press
3. High-School English Grammar and Composition - Wren and Martin, S. Chand and Co.
4. Communication Techniques and skills –K. Chaddha, Dhanpat Rai Publication
5. Professional Communication Skills -Pravil S. R. Bhatia, S. Chand and Co., New Delhi.
6. Communication Skills for Engineers –S. Mishra, C. Muralikrishna, Pearson Education.
7. Descriptive General English- S.P. Bakshi, Ms. Esha Bakshi, Arihant Publications
8. Organizational Behaviour-Fred Luthans, McGraw Hill
9. English at the Workplace - Department of English, University of Delhi
10. English for all - Coordinating Editor, Nilanjana Gupta
11. Soft Skills,know Yourself & Know the world-Dr.K.Alex.S. Chand & Company Ltd.,N.Delhi.

****

PDF Reader Trial

Solapur University, Solapur
F.E. (All Branches) Semester-II
6. : Communication Skills-II

Teaching Scheme **Examination Scheme**

Theory: - 1 Hr /Week

Tutorial: - 2Hrs/Week ***** **Term-Work - 2**5Marks

Course Objectives

1**.** To enhance LSRW skills of students

2. To develop students knowledge of Grammar

3. To develop Soft Skills in Students

Course Outcome

1. LSRW skills

2. Grammar

3. Soft Skills

Unit 1. Vocabulary **(2 Hrs)**

(Antonyms and Synonyms, Prefixes and Suffixes, Homophones)

Unit 2. Email **(2 Hrs)**

Unit 3. Introduction to Soft Skills and Personality Development **(4 Hours)**

Unit 4. Personal Interview **(4 Hrs)**

Unit 5. Presentation Skills **(2 Hrs)**

Tutorials

1. Vocabulary Building Exercises (2 Sessions)

2. Email (2 Sessions)

3. Soft Skills and Personality Development – Role Plays, Activities, Skits (4 Sessions)

4. Personal Interview (4 Sessions)

5. Presentation Skills – PPT Presentations, Seminars (2 Sessions)

Note: * Indicates Tutorials are at alternate week.

PDF Reader Trial

Text Books

1. Realms of Gold- S.Sagare, N.Pawar, R.Ingale, Orient Longman
2. English for Practical Purposes, Z.N. Patil, B.S. Valke, A.R. Thorat, Zeenat Merchant, Macmillan

Reference Books:

1. Communication Techniques and skills –K. Chaddha, Dhanpat Rai Publication
2. Professional Communication Skills -Pravil S. R. Bhatia, S. Chand and Co., New Delhi.
3. Communication Skills for Engineers –S. Mishra, C. Muralikrishna, Pearson Education.
4. Descriptive General English- S.P. Bakshi, Ms. Esha Bakshi, Arihant Publications
5. Organizational Behaviour-Fred Luthans, McGraw Hill
6. English at the Workplace - Department of English, University of Delhi
7. English for all - Coordinating Editor, Nilanjana Gupta
8. Word Power Made Easy, Norman Lewis
9. Soft Skills,know Yourself & Know the world-Dr.K.Alex.S. Chand & Company Ltd.,N.Delhi.
10. Oxford Advanced Learners Dictionary, A S Hornby, Oxford University Press.
11. Longman Dictionary of Contemporary English, Longman.
12.. Essential Activator, Longman.

****

सोलापूर विद्यापीठ
॥ विद्यया संपन्नता ॥

PDF Reader Trial

1.3.1.List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Master of Business Administration (MBA)		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2019-20	MBA-II	Strategic Management
		World Class Manufacturing
		International Marketing
	MBA-I	Principles of Management
		Managerial Economics
		Human Resource Management
2018-19	MBA-II	Strategic Management
		World Class Manufacturing
		International Marketing
	MBA-I	Principles of Management
		Managerial Economics
		Human Resource Management
2017-18	MBA-II	Corporate Planning and Strategic Management
		Business Ethics
	MBA-I	Principles of Management
		Managerial Economics
		Human Resource Management

1.3.1.List of courses which address the Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Programme Name:- Master of Business Administration (MBA)		
Academic Year	**Class**	**Name of Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.**
2016-17	MBA-II	Corporate Planning and Strategic Management
		Business Ethics
	MBA-I	Perspectives of Management
		IT for Management
		Marketing Management
2015-16	MBA-II	Corporate Planning and Strategic Management
		Business Ethics
	MBA-I	Perspectives of Management
		IT for Management
		Marketing Management

Solapur University, Solapur

Faculty of Commerce and Management

Master of Business Administration (MBA)

Syllabus for Year II Sem. III & IV

Choice Based Credit System (CBCS)

(w.e.f. June, 2018)

PDF Reader Trial

Solapur University, Solapur

MBA Part II Syllabus (CBCS) with effect from 2018-19

Semester III						Semester IV					
Paper No.	Subject	Weekly Theory/ Credits	Internal Marks	Univ. Exam Marks	Total Marks	Paper No.	Subject	Weekly Theory/ Credits	Internal Marks	Univ. Exam Marks	Total Marks
17	Strategic Management	04	30	70	100	25	Entrepreneurship Development	04	30	70	100
18	Management Accounting	04	30	70	100	26	Quality Management	04	30	70	100
19	Skill Development	04	30	70	100	*27	*Elective I - Paper III*	04	30	70	100
20	Project Report & Viva	--	50	50	100	*28	*Elective II - Paper-III*	04	30	70	100
*21	*Elective I - Paper I*	04	30	70	100	*29	*Elective I - Paper IV*	04	30	70	100
*22	*Elective II - Paper-I*	04	30	70	100	*30	*Elective II - Paper-IV*	04	30	70	100
*23	*Elective I - Paper II*	04	30	70	100	*31	*Elective I - Paper V*	04	30	70	100
*24	*Elective II - Paper-II*	04	30	70	100	*32	*Elective II - Paper-V*	04	30	70	100

*** Electives:**

Group	Elective Specialization
A	• Marketing Management
B	• Financial Management • Production and Materials Management
C	• Human Resource Management • International Business Management • Systems Management • Agriculture & Co-operative Management

PDF Reader Trial

- **Elective Specializations:** Student has to select **ANY TWO** of the Three Groups **A, B, C** and **ANY ONE** specialization subject from a selected group

Elective Specialization Groups with Subjects Papers:

Group	Specialization	Paper	Subject
A	**Marketing Management**	I	Brand Management and Social Marketing
		II	Sales and Distribution Management
		III	Integrated Marketing Communications
		IV	Services and Retail Marketing
		V	International Marketing
B	**Financial Management**	I	Indian Financial System
		II	Financial Decision Analysis
		III	Project Planning and Management of Financial Services
		IV	Investment Management
		V	International Finance
	Production and Materials Management	I	Purchasing and Inventory Management
		II	Logistics and Supply Chain Management
		III	Industrial Engineering
		IV	Quality Management
		V	World Class Manufacturing
C	**Human Resource Management**	I	Strategic Human Resource Management
		II	Human Resource Initiatives
		III	Industrial Relations and Labour Laws
		IV	HRD and Compensation Management
		V	International Human Resource Management
	International Business Management	I	International Business Environment
		II	Export Policy, Procedures and Documents
		III	International Marketing
		IV	EXIM Management
		V	International Logistics
	Systems Management	I	Management Information System
		II	ERP and SPD
		III	Relational Database Management System
		IV	Security And Control Information System
		V	Programming Concepts and Practices
	Agriculture & Co-operative Management	I	Fundamentals of Agriculture & Co-Operative Management
		II	Agricultural Marketing
		III	Agricultural Production Management
		IV	Agro- Processing Industries & Rural Industrialization
		V	International Trade And Agriculture

PDF Reader Trial

Sem. III Paper XVII - Strategic Management

1. **Strategy and Appraisal:** Defining strategy, Levels at which strategy operates, Strategic Decision Making, Vision, Mission, Objectives, and Strategic Management Process, Appraising the Environment, Organizational appraisal
2. **Strategy Formulation and Choice of Alternatives:** Corporate Level Strategies- Stability, Expansion (Concentration, Integration, Diversification, Internationalization, Co-operation strategies, Digitalization) Retrenchment (Turnaround, Divestment, Liquidation), Combination Strategies, Business Level Strategies
3. **Strategic Analysis and Choice –** SWOT analysis, Process of Strategic Choice- GAP Analysis, Tools and techniques for strategic Analysis, Corporate Portfolio Analysis - Bostan's Consultancy Model, GE-9 Cell Model, Industry Analysis – Porter's 5 Force Model, Competitor Analysis, Factors in Strategic Choice
4. **Strategy Implementation,** Model of strategy Implementation, Project implementation, Procedural Implementation, Resource Allocation, Structural Implementation- Structures for Strategies, Behavioral Implementation – Strategic Leadership, Functional Strategies, Operational Strategies
5. **Strategy Evaluation and Control:** Participants, Barriers in evaluation, Strategic Control, Operational Control, techniques of strategic evaluation and control
6. **Business Ethics**: Definition, nature and need for business ethics, Gandhian Philosophy and Trusteeship Management, factor affecting business ethics, principles of business ethics, Ethical Decision Making – Process, Individual and Situational Factors.
7. **Corporate Governance**: Meaning, Importance, Corporate Governance in India. Corporate Social Responsibility, Environmental Regulation in India.

Reference books:

1. Business Policy – Kazmi Azhar – Tata McGraw Hill
2. Business Policy and Strategic Management – P. Subba Rao, Himalaya Publication
3. Strategic Management – Alpna Trehan, Dreamtech Press
4. Business Policy and Strategic Management – R. Shrinivasan
5. Business Ethics – Dr. A. K. Gavai - Himalaya Publishing House
6. Business Ethics – A. C. Fernando - Pearson
7. Business Ethics – C. S. V. Murthy - Himalaya Publishing House
8. Business Ethics – Andrew Crane & Dirk Matten

PDF Reader Trial

Sem. IV Group B – Production and Materials Management
Paper V – World Class Manufacturing

1. **World Class Manufacturing Environment:** Imperatives for success, System approach and change in mindset, Strategic decisions in Manufacturing Management. Choice of technology, Capacity and layouts, Automation in Material handling system.
2. State of international business Excellence, Globalization and Global Companies. Managerial attitude towards globalization of business, entering the International Area, Managerial challenges for the future, Experience of Indian Companies in World Class Manufacturing
3. Characteristics of WCM companies**,** what is world class Performance – Six Sigma philosophy, Concepts of benchmarking and best practices
4. Lean Production, Principles advocated in just-in-time system, JIT manufacturing system , JIT pull system, use of Kanban system, JIT purchase, source development, supply chain management.
5. **Human Resource Management in WCM:** Adding value to the organization. Organizational learning, People as problem solvers, New organizational structures. Associates and Facilitators, Motivation and reward in the age of continuous improvement.
6. Total productive maintain concept of reliability, reliability improvement, concept of maintainability and maintainability improvement.
7. **Automation in design and Manufacturing**: Role of IT in World class Manufacturing, Concept of Flexible Manufacturing System, Group technology, Cellular Manufacturing Systems.
8. **Environment Pollution:** Factors causing Pollution, Effect on human health, Control of environment Pollution.

Reference Books:

1. World Class Manufacturing – K. Shirdhar Bhat
2. Management today- Burton and Thakur.
3. Operation Management- Hughes, Chris.
4. Supply Chain Management for competitive advantage – R. Raghavan
5. World Class Manufacturing - Strategic Perspective - B.S. Sahay, KBC Saxena, Ashish Kumar. (Mac Milan)
6. Making Common Sense Common Practice – Models for manufacturing excellence –Ron Moore (Butter worth Heinmann)
7. The Toyota Way - Jeffrey K. Liker – (Tata McGraw Hill)
8. Just In Time Manufacturing – M. G. Korgaonkar

PDF Reader Trial

Sem. IV Group C – International Business Management

Paper III - International Marketing

1. **Introduction to International Marketing:** Concept, Importance of global marketing, driving and restraining forces affecting global integration and global marketing, global marketing environment-economic, social and cultural, political and legal.
2. **Analyzing and Targeting Global Marketing Opportunities:** global customers- regional market characteristics, global buyers, the global marketing plan, global marketing information systems and research, segmentation, targeting and positioning.
3. **Global Product Decisions:** definition, classification, new products in global marketing development, product adoption, branding decisions, brand characteristics, packaging functions and criteria, international product life cycle, Marketing strategy: global brand and mega brands, marketing of services.
4. **International Pricing Decisions**: basic pricing concepts, environmental influences on pricing decisions, global pricing objectives and strategies, global pricing- three policy alternatives, transfer pricing, gray market goods, dumping.
5. **International Marketing Communication:** marketing environment and promotion strategies, international promotion mix, global advertising and branding, global advertising content: the extension v/s adaptation, Media structure, planning media strategy, corporate advertising, personal selling, sales promotion, direct marketing, trade shows and exhibitions, sponsorship promotion, public relations.
6. **Social Networks and Communication:** Social Media, Marketing dimensions of social media, social media and international communication, social media around the world, social media success strategies in international marketing.
7. **Global Marketing Channels and Physical distribution:** Channel objectives and constraints, distribution channel: terminology and structure, international channel and innovation, channel strategy for new market entry.

References Books:

1. Global Marketing Management – Keegan and Bhargava-Pearson
2. International Marketing – Francis Cherunilam – Himalaya Publication House
3. International Marketing - Onkvisit, Sak., and John J. Shaw- Tata McGraw Hill
4. International Marketing-Czinkota & Ronkainen-Cengage Learning
5. International Business – P. Subha Rao - Himalaya Publication house

PDF Reader Trial

Solapur University, Solapur

Faculty of Commerce and Management.

Master of Business Administration (MBA)

Choice Based Credit System (CBCS)

(June, 2017)

PDF Reader Trial

4. MBA Course Structure:

SEMESTER - I						SEMESTER – II					
Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks	Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks
I.	Principles of Management	4	30	70	100	IX.	Marketing Management	4	30	70	100
II.	Accounting for Managers	4	30	70	100	X.	Financial Management	4	30	70	100
III.	Managerial Economics	4	30	70	100	XI.	Human Resource Management	4	30	70	100
IV.	Organisational Behaviour	4	30	70	100	XII.	Production Management and Operational Research	4	30	70	100
V.	Statistics for Management	4	30	70	100	XIII.	International Business	4	30	70	100
VI.	Managerial Communication-I	4	30	70	100	XIV.	Managerial Communication-II	4	30	70	100
VII.	Legal Aspects of Business	4	30	70	100	XV.	Research Methodology	4	30	70	100
VIII.	IT for Management*	4	30	70	100	XVI.	Event Management *	4	30	70	100
VIII.	Taxation*	4	30	70	100	XVI.	Banking and Insurance*	4	30	70	100

* Students can choose any one subject among the two as Choice Based subject. Both the subjects should be conducted simultaneously. However Minimum of 10 students should opt for the subject in the respective institute for conducting the subject. University Paper for both the subjects will be held on the same day.

PDF Reader Trial

SEMESTER – III						SEMESTER – IV					
Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks	Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks
17	Corporate Planning & Strategic Mgt	4	30	70	100	25	Entrepreneurial Development	4	30	70	100
18	Management Accounting	4	30	70	100	26	Total Quality Management	4	30	70	100
19	Business Ethics	4	30	70	100	27	Elective-I Paper-III	4	30	70	100
20	Project Report & Viva	-	50	50	100	28	Elective-I Paper-IV	4	30	70	100
21	Elective-I Paper-I	4	30	70	100	29	Elective-I Paper-V	4	30	70	100
22	Elective-I Paper-II	4	30	70	100	30	Elective-II Paper-III	4	30	70	100
23	Elective-II Paper-I	4	30	70	100	31	Elective-II Paper-IV	4	30	70	100
24	Elective-II Paper-II	4	30	70	100	32	Elective-II Paper-V	4	30	70	100

Total Subject Heads: 32 Total Marks: 3200

Elective Specializations: Student has to select any Two of the three groups A, B, C and any one specialization subject from a selected group

Group	Elective Specialization Subjects
A	• Marketing Management
B	• Financial Management • Production and Materials Management
C	• Human Resource Management • International Business Management • Systems Management • Agriculture & Co-operative Management

PDF Reader Trial

1. **Introduction:** Concept, definitions and levels, basic managerial roles, skills and functions. Evolution of management thought- F.W. Taylor & Henry Fayol contribution, Hawthorne studies, modern management- Bottom of Pyramid- Prof. C.K. Prahalad. **(8)**

2. **Business Environment and Planning: C**oncept of environment, factors of environment and changing Indian business environment, meaning, definition importance and nature of planning, steps and levels in planning process; kinds of organizational plans- strategic, tactical and operational. Objectives – management by objectives (MBO) method. Decision making-types, decision making conditions and steps in decision making **(12)**

3. **Organizing:** Definition, basic elements of organizing and types of organizations. Organization structure and type. Departmentalization, basis for departmentalization, reporting relationships and authority distribution. Forms of organization structure -functional, flat, project & matrix etc. work from home, outsourcing, virtual organizations, and boundary less organizations **(10)**

4. **Staffing:** Concept, elements, functions of staffing, advantages of proper staffing. **(4)**

5. **Directing:** Concept and importance, concept of motivation, Theories of motivation -Maslow theory of human needs, Herzberg's theory of motivation, Stacy Adam's Equity theory, McGregor's theory X & theory Y,William Ouchi- Theory Z and Edwin A. Locke- Goal setting, Vrooms Expectancy theory. **(9)**

6. **Leadership, Creativity and Innovation:** Leadership-traits, styles, behavior – Likert's four systems, Managerial Grid, Hersey-Blanchard's Situational Model, Leadership styles in Indian organizations, Transactional and transformational theory Creativity, creative thinking, characteristics of creative people, stimulating innovation in organizations. **(9)**

7. **Controlling:** Concept, importance of controlling, controlling process, types of control, factors influencing control effectiveness **(4)**

8. **Ethics & Social Responsibility:** Ethics, Social responsibility, Corporate Social responsibility (CSR) **(4)**

Reference books:

1. Management Text and Cases - V S P Rao, Excel Books
2. Principles of Management - P C Tripathi and P N Reddy, Himalaya Publishing House
3. Principles and Practice of Management - L M Prasad, S. Chand and Sons
4. Principles of Management - S. Soundaian, PMJ Publishers.
5. Principles of Management - T. Ramaswamy, McGraw Hill Education
6. Principles of Management - Knootz & O'Donell, Tata McGraw Hill
7. Principles of Management - Meena Sharma, Himalaya Publishing House

PDF Reader Trial

Sem. I Paper III: Managerial Economics

1. Managerial Economics – Meaning, features, scope and significance of Managerial Economics, importance of managerial economics in decision making of the firm Consumer Behavior: Choice and Utility Theory, the Indifference Curve Analysis. **(6)**

2. Demand analysis, forecasting of demand, Methods, Elasticity of demand. Types of elasticity of demand. Supply analysis. Supply function, the Law of Supply, Elasticity of supply. (Numericals to be taken on demand function) **(12)**

3. Laws of variable proportions and Return to scale, Economies of scale, Isoquants and Isocost, Optimum combination of inputs, Elasticity of substitutions; Cost concepts: Kind of costs, Short run and long run cost functions, Interrelationship of cost, Cost reduction and cost control. **(10)**

4. Concept of Market equilibrium and Revenue curves, Characteristics of different market structures, Price determination and firms equilibrium under monopolistic competition, oligopoly and Price discrimination, International price discrimination and dumping, pricing methods **(8)**

5. RBI and Monetary Policy, Reforms in Banking sector, Core Banking. Trade policy and fiscal policies Public economies- public revenue, public expenditure and public debt , Budget and types of budgets. **(4)**

6. Environment - Concept, composition and importance in Indian Economy, Major problems of Indian Economy Industrial Growth and development, Role and problems of small scale industries. Industrial sickness, Liberalisation, Privatisation and Globalisation **(4)**

7. Basic concept-measurement of national income concept of GDP & GNP – Methods of measuring national income. Inflation & deflation- types, causes, effects remedial measures; Human development index **(6)**

8. Foreign Trade: Trends in India's Foreign Trade, Impact of WTO on India's Foreign Trade. MNCs – Role Balance of Payment- problems, disequilibrium in the BOP methods to correct adverse Balance of payment **(10)**

Reference Books –

1. Managerial Economics - D.N.Dwidevi, Vikas Publishing House Pvt. Ltd
2. Managerial Economics - P. L. Mehta, S. Chand & Sons, New Delhi
3. Managerial Economics - Theory and Applications, Dr. D.M Mithani, Himalaya Pub.
4. Indian Economy - Ruddar Datt and K.P.M Sundharam, S. Chand & Sons
5. Indian Economy - S.K. Mishra and V.K. Puri, Himalaya Publishing House
6. Managerial Economics - H. L Ahuja, S. Chand & Sons, 2011

PDF Reader Trial

Sem. II Paper XI: Human Resource Management

1. **Human Resource Management**: Introduction, meaning, nature, scope of HRM. Importance and Evolution of the concept of HRM. Functions of HRM, Role of HR Manager. HRM's evolving role in the 21st century. **(8)**

2. **Job Analysis:** Meaning, process of Job Analysis, methods of collecting job analysis data, Job Description and Job Specification.

   Human Resource Planning: Objectives, Importance and process of Human Resource Planning, Effective Human Resource Planning. **(8)**

3. **Recruitment:** Definition, Constraints and Challenges, Sources and Methods of Recruitment, New Approaches to recruitment.

   Selection: Definition and Process of Selection.

   Placement: Meaning, Induction/Orientation, Internal Mobility, Transfer, Promotion, Demotion and Employee Separation. **(8)**

4. **Training and development**: Training v/s development, Training v/s Education, Systematic Approach to Training, Training Methods, Executive Development, Methods and Development of Management Development, Career and Succession Planning. **(8)**

5. **Performance Appraisal:** Concept of Performance Appraisal, the Performance Appraisal Process, Methods of Performance Appraisal, Essential Characteristic of an Effective Appraisal System. **(5)**

6. **Compensation**: Objectives of Compensation Planning, Job Evaluation, Structure in India, Wage and Salary Administration, Factors Influencing Compensation Levels, Executive Compensation. **(5)**

7. **Employee Welfare**: Introduction, Types of Welfare Facilities and Statutory Provisions.

   Employee Grievances: Employee Grievance procedure, Grievances Management in Indian Industry.

   Discipline: Meaning, approaches to discipline, essential of a good disciplinary system, managing difficult employees. **(8)**

8. **Industrial Relations**: Overview of industrial relations and industrial conflict.

   Industrial disputes: preventive and settlement machinery, collective bargaining, industrial relations scenario: current issues and future challenges. **(8)**

Practical Component:

1. *Give a case and ask the students to prepare the recruitment advertisement for a newspaper.*
2. *Expose students to standard selection questions asked in Interviews.*
3. *Exploring training and development practices.*
4. *Exploring performance appraisal practices in various sectors.*

PDF Reader Trial

Solapur University, Solapur

MBA Part II Syllabus (CBCS) w.e.f. 2016-17

SEMESTER – III						SEMESTER – IV				
Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks	Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks
17	Corporate Planning & Strategic Mgt	4	30	70	100	25	Entrepreneurial Development & Project Mgt.	4	30	70	100
18	Management Accounting	4	30	70	100	26	Excellence in Management	4	30	70	100
19	Business Ethics	4	30	70	100	27	Elective-I Paper-III	4	30	70	100
20	Elective-I Paper-I	4	30	70	100	28	Elective-I Paper-IV	4	30	70	100
21	Elective-I Paper-II	4	30	70	100	29	Elective-I Paper-V	4	30	70	100
22	Elective-II Paper-I	4	30	70	100	30	Elective-II Paper-III	4	30	70	100
23	Elective-II Paper-II	4	30	70	100	31	Elective-II Paper-IV	4	30	70	100
24	Project Report & Viva	-	50	50	100	32	Elective-II Paper-V	4	30	70	100

PDF Reader Trial

Solapur University, Solapur

MBA Syllabus (CBCS) w.e.f. 2016-17

MBA Part-II SEM. III (CBCS)

Paper XVII

Corporate Planning and Strategic Management

1. Concept of strategy: a) Defining strategy b) Levels at which strategy operates c) Strategic Decision Making and Approaches to Strategic Decision making d) Mission and Purpose, Objectives and Goals e) Strategic Business Units f) Corporate Planning Process

2. Environment Analysis and Diagnosis : a) Concept of Environment and its components b) Environment scanning and appraisal c) organizational appraisal d) Strategic advantage analysis and diagnosis e) SWOT analysis

3. Strategy Formulation and Choice of Alternatives : a) Strategies – Modernization, Diversification, Integration, Merger, Take-over and Joint Venture strategies, Turnaround – divestment and Liquidation strategies b)Process of Strategic Choice – Industry, competitor and SWOT analysis; Synergy and Dysergy, GAP Analysis; Porter's Five forces Model of competition; Mckinsey's 7's framework; GE-9 Cell Model, Bostan's Consultancy Model c) Distinctive competitiveness; d) Selection of matrix e) Factors affecting Strategic Choice – Cost, Leadership, Differentiation focus, value chain analysis, bench-marking, service blue printing.

4. Strategy Implementation :a) Inter-relationship between formulation and implementation; b) Issues in strategy implementation, Resource Allocation, Budgets, Organization structure c) Matching structure and strategy d) Behavioral Issues – Leadership styles, Corporate culture and values power e) Social Responsibilities – Ethics, Building capable organization; f) Functional Issues – Financial, Marketing, Operations and Personnel Plans and Policies

5. Strategy and Structure: Structural Considerations, Structure for strategies, Organizational design and change. Organisational structure & controls, Strategic Entrepreneurship, Strategic Leadership.

6. Strategy Evaluation: Importance, Symptoms of malfunctioning of strategy, Overview of strategic evaluation, strategic control, techniques of strategic evaluation and control, Operational Control.

7. Strategies for competing in globalizing markets, New Business Models and Strategic for Internet Economy. International Strategies.

8. Tailoring strategy to fit specific industry and company situation, strategy and competitive advantage in diversified agencies, Evaluating the strategies of diversified agencies. Corporate and Multi-Business Strategy.

PDF Reader Trial

9.

Books Recommended:

1. Managing Business Enterprise : Strategies, Structures and Systems – S.K. Bhattacharya and N.Venkatraman – VHP
2. Business Policy – Kaxmi Azhar – Tata McGraw Hill
3. Strategic Management 12th edition - Thompson and Strickland – TataMcgraw Hill
4. Strategic Management – David Fred R. – PHI
5. Implementing Strategic Management – H.Igor Ansoff – PHI
6. Strategic Management in Action – Coulter Mary K. – PHI
7. Cases in Strategic Management – S.B.Budhiraj and M.B.Athreya – TataMcGraw Hill.
8. The Competitive Advantage of Nations - Macmillian
9. Strategic Management – R.Srinivasan.
10 Strategic Managementn – Alpna Trehan (Dreamtech Press) 11.Strategic Management – Allen C. Amason (Routledge) 12. Strategic Management – Ireland-Hoskisson-Hill(Cengage)

PDF Reader Trial

MBA Part-II SEM. III (CBCS)

Paper-XVIII

Business Ethics

1. Introduction to Business Ethics: an understanding of ethics, definition of ethics and business ethics, nature and need for business ethics, factor affecting business ethics, principles of business ethics,
2. Values, beliefs and standards: Introduction of values, characteristics of values, importance of values, business values, corporate values. Relationship of values, norms, belief and standard
3. Ethics and work place: concept, personal values and organizational rules, ethics and decision making, ethical dilemma.
4. Making decisions in Business Ethics – what is an Ethical decision, Models of ethical decision making, Individual influences on ethical decision making, situational influences on decision making.
5. Business and Society: Changing concepts and objectives of Business, Responsive Management, Corporate Social policy, Management by Values, Social responsibility and profitability, Forces inducing Social Responsibility. Social responsibilities of Business Organization.
6. Basic Framework of Normative Ethics,: Ethics and Decision Making, Ethical Aspects Corporate Policy, Morality and Rationality in Organisation, Moral Relationship between Individual and Organisation. Making Moral Decisions. Conflict between personal values and organizational goals. Corporate culture,
7. Corporate Governance: Meaning, Importance, prerequisites, regulatory and voluntary actions, corporate disclosure, Corporate Governance in India.
8. Ethics in General Management, Ethics and HRM, Ethics and Marketing, Business Ethics and Media, Ethics in Finance and Accounting, Ethical dilemma faced by financial managers, Ethical implications of Technology. Ethics and Information Technology.
9. 8 Business ethics and Environment Management: Basics of Environment, Environment pollution, Ozone Depletion, Global Climate change, Air Pollution, Water Pollution, Waste Management. Environmental Regulations – WTO environmental provisions, Environmental Regulation in India, Environment Protection, Ethics of Multinational Business

PDF Reader Trial

Books Recommended

1 Business Ethics- Andrew Crane & Dirk Matten.

2. Perspectives in Business Ethics- Laura Hartman-Mcgraw Hill

3 Business Environment - Francis Cherunilam, Himalaya

4 Business Ethics – C.S.V.Murthy.

5 Management Policy and Strategic Management, R.M.Srivastava

6 Perspectice Management by V.P.Michael,

7 Business Ethics – Dr.A.K.Gavai (Himalaya Publishing House)

8 Business Ethics – An Indian Perspective – Prof.(Col.)P.S.Bajaj, Dr.Raj Agrawal

9. Business Ethics- Text and Cases- C.S. V Murthy (Himalaya Publishing House)

10. Ethics in Business Management- Concept and Cases: R. P. Banerjee (Himalaya Publishing House)

PDF Reader Trial

Solapur University, Solapur

MBA Part-I Syllabus (CBCS) w.e.f. 2015-16

SEMESTER - I						SEMESTER - II					
Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks	Paper No.	Subject	Weekly Theory	Internal Marks	Uni Exam Marks	Total Marks
1	Perspectives of Management	4	30	70	100	9	Marketing Management	4	30	70	100
2	Accounting for Management	4	30	70	100	10	Financial Management	4	30	70	100
3	Managerial Economics	4	30	70	100	11	Human Resource Management	4	30	70	100
4	Organisational Behaviour	4	30	70	100	12	Production and Materials Management	4	30	70	100
5	Statistical Methods	4	30	70	100	13	Economic Environment for Business	4	30	70	100
6	Managerial Communication-I	4	30	70	100	14	Managerial Communication-II	4	30	70	100
7	Legal Aspects of Business	4	30	70	100	15	Research Methodology	4	30	70	100
8	IT for Management	4	30	70	100	16	Operations Management	4	30	70	100

PDF Reader Trial

Solapur University, Solapur

MBA Part-I Syllabus (CBCS) w.e.f. 2015-16

MBA Part-I SEM-I (CBCS)
PAPER I Perspectives of Management

1. Management: Definition, Characteristics, Levels of Management, Process of Management, Contribution made by Frederick Taylor- Scientific management, Henri Fayol – Modern management. Prof. C.K. Pralad -Pyramid concept, Peter Drucker- MBO.
2. Development of Management Theory : Dynamic Engagement Approach -Six different themes in management theory -New organizational environment, Ethics and social responsibility, Globalization and management, Inventing and reinventing organizations, Culture and multiculturalism, Quality.
3. Planning: Definition, Importance, Objectives, Planning process
4 Organising : Definition, Importance, Design of organization structure – concept, Departmentation, Span of management, Forms of organization structure -Functional, flat, Project-amoebic , Matrix etc. Work from home , Outsourcing ,Virtual Organisations. Power and Authority - Concept, Delegation of authority, Centralization and decentralization, Conflict and Co-ordination.
5. Staffing : Staffing as a Management function. Directing – Directing as a function of management, Direction and supervision.
6. Motivation : Concept, Theories of motivation -Maslow theory of human needs, Mc Gregor's theory X & theory Y,William Ouchi- Theory Z and Edwin A. Locke- Goal setting.
7. Leadership: Leadership styles (Autocratic style Democratic style and Laissez-faire style). The managerial grid. Hersey and Blanchard's situational leadership model, Leadership style and the work situation: The Fiedler model, A path-goal approach to leadership.
8. Controlling: Concept, management by exception, steps in controlling, Design of effective control system.

Reference Books

1 Management- By James A.F. Stoner, R. Edward Freeman & Daniel R. Gilbert.
2. Management- Global Perspective By Heinz Welhrich & Horolad.
3. Management By Martin C. Cathrol.
4. International Management: Concepts & Cases – Manab Thakur,
5. Principles of Management – Tripathi P.C. and Reddy
6. Management By Peter Drucker.
7. Management & Organisation By Louis A. Allen.
8. Management Today- Gene Burton & Manb Thakur.
9. Management Principles and Guidelines – Thomas Duening & John Ivancevich –biztantra.
10. Principles of Management – Ramaswamy
11. Principles of Management – Natarajan
12. Principles & Practice of Management – L.M. Prasad

PDF Reader Trial

MBA Part-I SEM-I (CBCS)
Paper VIII – IT For Management

1. Introduction to IT and Computers: - Concept of Data and Information, Concept of Information Technology, IT application in Management. Basic Computer Organization, Hardware: CPU, RAM, ROM, Storage Devices, Input/output Devices, Software: Types of software.
2. Introduction to Internet: Definition, Brief History, Email, World Wide Web, Internet Service Providers, Use of Internet for Business
3. Software and Data Management: System Software, Application Software, Programming Software, DBMS: Introduction, Functions and Advantages of DBMS and RDBMS.
4. Information System Development: Computers in Management, Operational Information Systems in Business, Information System Software, Information needs at different organization levels, Major types of information system in organization and relationship between them, Contribution of information systems to pursue competitive strategies, Building Information System- Overview of system development life cycle Role of data in Information System.
5. Information Systems Resource Management: Computer System Management, Managing Information Resources, Computer Security, Crime and Ethics
6. E–Commerce - Concept, Types and Applications of E-Commerce, E-market, M-Commerce.
7. ERP- Definition, basic features, Benefits, Modules, Implementation of ERP, Introduction to SAP 8.Application Software Packages-

   MS-Word- Overview: Page Setup, Margins, Tabs, Header and Footer, Saving Document.

   Formatting the Text, Adding Columns, Tables, Mail merge

   MS-Excel- Overview, Working with spreadsheet, Formatting Cells, Formulas and Functions: Arithmetic Functions, Text Functions and Financial Functions, Graphs, Conditional Formatting, Sorting and Filtering Data, Micro

   MS PowerPoint- Overview, Working with themes, Charts, Graphics and Tables, Animation: Using Animation for entry, exit, motion and emphasis, Custom Animation, Transition of Slide

Reference books

1. Computer Today- Suresh K. Basandra- Galgotia Publications Pvt. Ltd.
2. Computer Fundamentals- P.K.Sinha and Priti Sinha-BPB Publication
3. MIS Text & Cases-Jawadekar W.S.-TMGH Publication
4. MIS: Managing the digital firm-Laudan K.C.-TMGH Publication
5. E-Commerce-David Whitley TMGH Publication
6. E-Business & E-Commerce David Chaffey Pearson
7. Internet for Everyone Leon Alexis Leon Teenworld
8. Learning guide to The Internet Allen Douglas. W. BPB Publication
9. Enterprise Resource Planning: ERP Milind M.Oka Everest Publication House
10. Enterprise Resource Planning Leon Alexis TMGH Publication
11. Enterprise Resource Planning: Concept and Practice Vinod Kumar Garg and N.K. Venkitakrishna PHI
13. Comdex Computer Kit: Windows XP with Office 2007 Vikas Gupta dreamtech press

PDF Reader Trial

MBA Part-I SEM-II (CBCS)
Paper IX - Marketing Management

1. **Marketing Concepts** - Introduction to marketing – Nature and scope of marketing, the core concepts of marketing. Concept of marketing (Production concept, Product concept, Selling concept, Marketing concept, Societal concept) Holistic Marketing Orientation.

2. **Marketing Environment:** Analyzing needs and trends Macro Environment - Political, Economic, Socio-cultural and Technical Environment – PEST analysis. Micro Environment – Industry & Competition. Concept of Market Potential & Market Share

3. **Understanding Consumer.** Definition, Determinants of consumer behavior, importance, factors influencing consumer behavior, buying process, Concept of customer relationship management. Brand Equity- Definition, Concept, Building brand Equity.

4. **Market segmentation:** Definition, Need & Benefits. Bases for market segmentation of consumer goods, industrial goods and services. Segment, Niche & Local Marketing, Effective segmentation criteria, Evaluating & Selecting Target Markets, Concept of Target Market and Concept of positioning – Value Proposition & USP.

5. **Marketing Mix:** Definition of each of the Four P's. Components of each P. (Product-Product and product life cycle, New Product development process ,Price – Pricing methods, objectives, price determination policies, Promotion – Concept, Promotional Mix Place - Importance ,Channel design and decision, Channel Management decision) Extended 7Ps for services. Significance in the competitive environment.

6. **E-Commerce marketing practices.** Concepts – Retailing, Wholesaling and Logistics, Network Marketing, Direct marketing -Impact of technology & Internet on distribution.

7. **Marketing Research** – Meaning and Nature of Marketing Research. Applications, Limitations Threats to Marketing Research, Evaluation and Control of Marketing Research, Process of marketing research.

8. **Marketing Ethics and social responsibility -** Citizen and public actions to regulate marketing (Consumerism, environmentalism, public actions to regulate marketing,)

Reference Books

1. Principles of Marketing 12th Edition - Philip Kotler and Gary Armstrong
2. Fundamentals of Marketing - Stanton
3. Marketing Management – Rajan Saxena
4. Marketing Management - V.S.Ramaswamy and S.Namakumari
5. Analysis for Marketing Planning – Donald Lehmann & Rusell Winer, 6th ed.
6. Case Studies in Marketing - Indian context - R.Srinivas
7. Principles and Practice of Marketing –Philip Kotler
8. Marketing Management – S.A. Sherlekar
9 Marketing Management – A South Asian Perspective –Philip Kotler, Kevin Lane Keller, Abraham Koshy, Mithileshwar Jha.
10.Marketing Research – G.C. Beri
11 Marketing Research – Suja Nair – Himalaya

PDF Reader Trial