

2.3.1 Student Centric Methods, such as experimental learning, participative learning and problem solving methodologies are used for enhancing learning experiences

EXPERIENTIAL LEARNING

Experiential learning is the process of learning through experience. Institute is inculcating self-learning and life-long skills through following activities:





SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S

COLLEGE OF ENGINEERING, PANDHARPUR

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(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



ISO 9001:2015



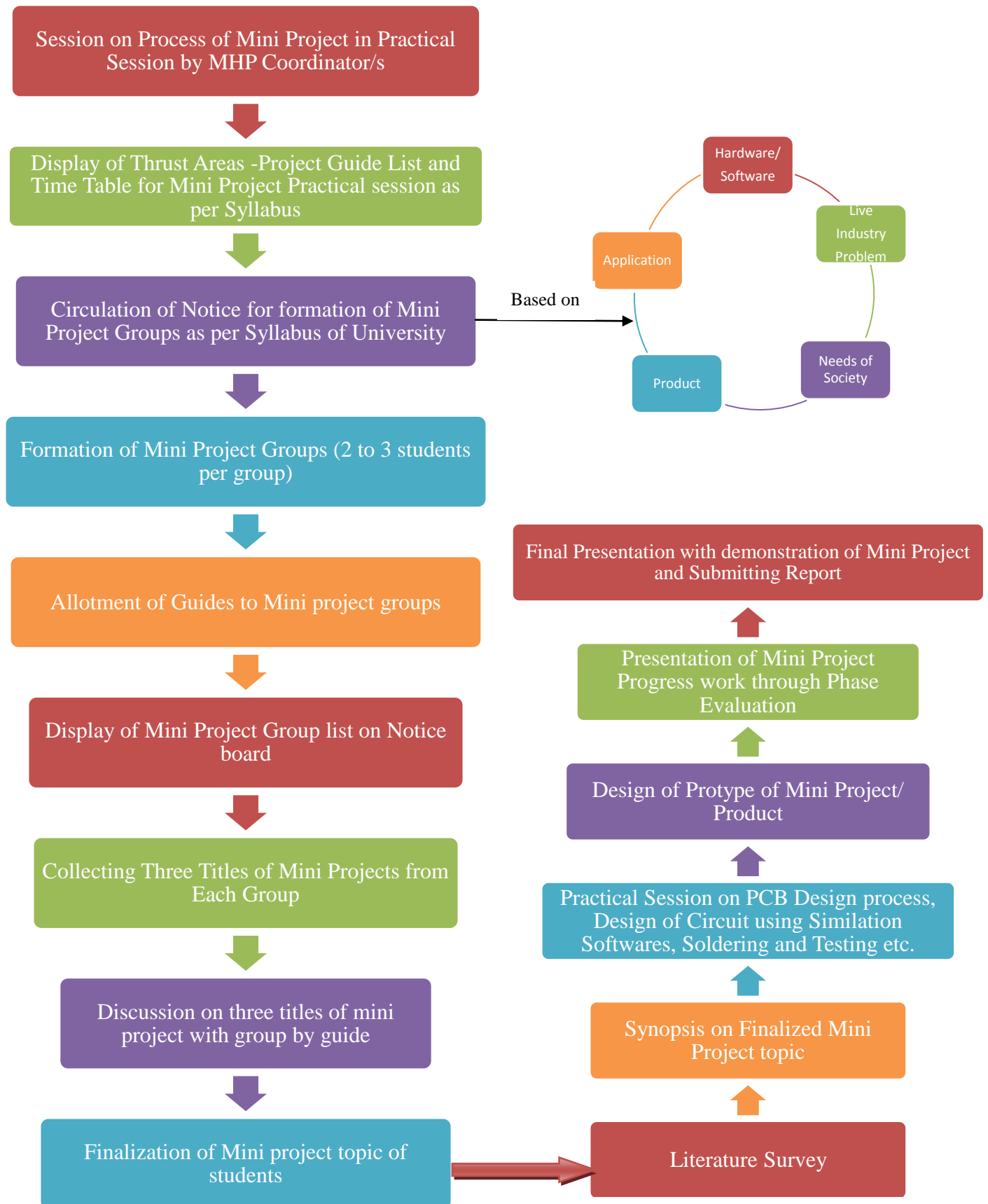
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| Sr. No. | Name of the Activity | Purpose of Activity |
|---------|--|--|
| 1 | Mini Projects | The purpose is to develop the product/ project using modern tools/techniques to solve complex engineering problems of the industry and society. |
| 2 | Final Year Projects | The purpose is to develop the product/ project using practical tools/techniques and advanced labs to solve complex engineering problems of the industry and society. |
| 3 | Industrial Visits | Industrial visits are arranged for students with an objective of providing students functional opportunity in different sectors. It gives an industrial exposure to grow their knowledge and skills. |
| 4 | Internships/ Vocational/Field Training | Vocational training allows students to gain practical experience in industry before they graduate. |
| 5 | Virtual Labs | The Virtual Laboratory is an interactive environment for creating and conducting simulated experiments. |
| 6 | Hands-on Workshops | A hands-on workshop helps students to expertise in practical domain. |
| 7 | Technical Symposium | Technical Symposiums enhance the technical knowledge of students and provide them a platform to exhibit their talents. |
| 8 | Mock Interviews | A mock interview process helps candidates gain confidence with the chance to reflect on their non-verbal and verbal communication abilities. It also provides an opportunity for interviewees to make mistakes and work on correcting them in a safe atmosphere. |
| 9 | Use of Visualizations | The purpose of using Visualizations like animations, videos and simulator is to convey a complex and concrete information effortlessly. |
| 10 | Use of research oriented equipment | Purpose of using research oriented equipment is to enable students to explore new subjects and deepen their understanding of difficult concepts. |
| 11 | Teaching in classroom and laboratories | Purpose of teaching in classroom and laboratories is to give students first-hand experience and offer better opportunities for learning. Teaching in a classroom gives students the opportunity to engage in live discussions. |
| 12 | Learning Summary Chart | Use a summary chart to help students keep track of what they learn from their lesson activities and then use their learning to help them explain how and why that phenomenon occurs. |
| 13 | Industry Expert/ Researchers Lecture | Industrial Experts speakers have become an important part of the educational experience for students. They expose students to real-world life experiences. Students get to see the insight and perspective of the guest speaker's particular field. |

Experiential Learning through Mini Projects

- **Solve Complex Engineering Problems**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**
- **Team work**

MINI PROJECT ALLOCATION PROCESS



SYLLABUS



Solapur University, Solapur
T.E. (Electronics and Telecommunication Engineering) Semester-II
ET 326-MINI PROJECT (HARDWARE)

Teaching Scheme

Practical – 2 Hours/week, 1 Credit

Examination Scheme

ICA – 25 Marks

This course is introduced to enable students to apply the knowledge and skills learned out of courses studied to solve/implement predefined practical problem. The Project work may be beyond the scope of curriculum of courses for learning additional skills, developing the ability to define, design, analysis and implementation of the problem and lead to its accomplishment with proper planning.

Course Prerequisite:

Student shall have knowledge of PCB designing, circuit designing, testing, soldering.

Course Objectives:

- 1) To produce PCB artwork using an appropriate EDA tool.
 - 2) To practice good soldering, testing, fault detection and effective trouble-shooting.
 - 3) To design and implement application based hardware project.
 - 4) To present technical seminar and display the project.
-

Course Outcomes:

Students will be able to

- 1) Produce PCB artwork using an appropriate EDA tool.
 - 2) Practice good soldering, testing, fault detection and effective trouble-shooting.
 - 3) Design and implement application based hardware project.
 - 4) Present technical seminar and display the project.
-

1) Guidelines for project implementation:

- 1) Project group should be not more than 3 students per group.
- 2) Domains for projects may be based on a particular application from the following, but not limited to:
 - i. Instrumentation and Control Systems
 - ii. Electronic Communication Systems
 - iii. Biomedical Electronics

- iv. Power Electronics
- v. Audio, Video Systems
- vi. Embedded Systems
- vii. Mechatronics Systems

- 3) Week 1 & 2: Formation of groups, searching of an application based hardware project
- 4) Week 3 & 4: Finalization of Mini project & Distribution of work.
- 5) Week 5 & 6: PCB artwork design using an appropriate EDA tool & Simulation.
- 6) Week 7 & 8: Procurement of electronic components for the project & PCB manufacturing.
- 7) Week 9, 10 & 11: Hardware assembly, testing, fabrication
- 8) Week 12: Demo, Group presentation & report submission

2) Guidelines for group seminar:

- 1) The seminar shall consist of the Literature Survey, Market survey, Basic project work and Applications of Mini project.
- 2) Seminar Assessment shall be based on Innovative Idea, Presentation skill, depth of understanding, Applications, Future Scope and Individual Contribution.
- 3) A certified copy of seminar/ project report shall be required to be presented to external examiner at the time of final examination.

TIME TABLE



SVRI's College of Engineering, Pandharpur
Department of Electronics & Telecommunication
T. E. A TIME TABLE for year 2019-2020 SEM-II (w.e.f. 3/3/2020) Classroom No.- MF 419

| Day / Time | 08.00a.m. to 09.00 a.m. | 09.00am to 10.00am | 10:00 am to 10:30 am | 10:30 am to 10:45 am | 10:45am to 11:45am | 11:45am to 12:45pm | 12:45pm to 01:45pm | 01:45pm to 02:45 pm | 02:45pm to 03:45 pm | 03:50 pm to 4:30 pm | 04:35 pm to 5:35 pm |
|------------|--|--------------------|----------------------|----------------------|---|--------------------|--------------------|--|-----------------------------|---|---|
| Thu | A1- RME A2- OC A3- MHP A4- EASD | | Pranayam | Short Break | OC | RME | Lunch Break | EASD | EASD | Proctor | Project Guidance session |
| Fri | RME | MC | | | MC-II | MC-II | | A1- MC-II A2- MC (T) /EASD (T) A3- RME A4- OC | | Proctor | A1, A2- RME A3, A4 -MC-II Practice session |
| Sat | A1- OC A2- MHP A3- EASD A4- MC-II | | | | RME | RME | | A1- MHP A2- EASD A3- MC-II A4- MC (T)/EASD (T) | | Proctor | A1, A2- MC-II A3, A4 -RME Practice session |
| Sun | A1- GT/LIB (CAED-I) A2- GT/LIB (CAED-III) A3- LIB/GT (CAED-I) A4- LIB/GT (CAED-III) | | | | MC | MC | | OC | OC | Proctor+ PDC Backlog session (4PM to 5PM) | |
| Mon | MC-II | MC-II | | | A1- MC (T) /EASD (T) A2- RME A3- OC A4- M/GD (CAED-II) | | | A1- GD/M (CAED-I) A2- GD/M (CAED-I) A3- M/GD (CAED-I) A4- MHP | | EMER Backlog session (4PM to 5PM) | MC-I Backlog session (5PM to 6PM) |
| Tue | EASD | EASD | | | A1- EASD (SCD) A2- MC-II A3- MC (T)/EASD (T) A4- RME | | | CIP | Advanced Technical Training | Proctor | |

| Batch | Proctor | Subject | Subject | Practical | Practical Location |
|-------|-----------------------|---------|---------------------------------|---------------------|----------------------------|
| A1 | Mr.S.P.Swami | RME | Ms.S.S.Kadam | Ms.S.S.Kadam | MW Lab |
| A2 | Mr. A. D. MaliVasekar | MC-II | Mr.MA.Deshmukh | Ms.N.S.Patil | MP Lab |
| A3 | Mr.J.S.Hallur | EASD | Mr.S. P. Swami | Mr.Ak.A.Jadhav +SPS | EDCP Lab |
| | | MC | Mr.J.S.Hallur | Mr.J.S.Hallur | MF-419 |
| | | OC | Ms.N.P.Kulkarni | Mr. S. M. Karve | Communication Lab |
| | | MHP | Mr. A. D. Mali | | EDP Lab, CAED-II, CAED-III |
| | | CIP | Prof. B. S. Sawase | | MF-419 |
| | | Gate | A1-DVA, A2- MMW, A3-SDP, A4-JSH | | ADS Lab & (CAED-II) |
| | | GD/ M | A1-MMW, A2-SDP, A3-SCD, A4-DVA | | CAED-I & II |
| | | ATT | /P. R. Dolas | | |

TT Co ordinator
 /Prof. L. A. Palange & /Prof. S. A. Atole

Ms.S.S.Kadam

H.O.D. (ENTC)
 Dr. A. S. Vibhute

HEAD
 Dept of Electronics & Telecom. Engg.
 Pandharpur



SVRI's College of Engineering, Pandharpur

Department of Electronics & Telecommunication

T. E. B TIME TABLE for year 2019-2020 SEM-I (w.e.f. 3/3/2020) Classroom No.- MF 426

| Day / Time | 08.00a.m. to 09.00 a.m. | 09.00am to 10.00am | 10:00 am to 10:30 am | 10:30 am to 10:45 am | 10:45am to 11:45am | 11:45am to 12:45pm | 12:45pm to 01:45pm | 01:45pm to 02:45 pm | 02:45pm to 03:45 pm | 03:50 pm to 4:30 pm | 04:35 pm to 5:35 pm |
|------------|-------------------------|--------------------|----------------------|----------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|------------------------------|
| Thu | MC-II | MC-II | Pranayam | Short Break | B1-MC-II (AAK) | | Lunch Break | MC | MC | Proctor | RME & MC-II Practice session |
| Fri | B1-MHP | | | | B2- M/GD (CAED-III) | | | | | | |
| | B2- EASD | | | | B3-M/GD (CAED-I) | | | | | | |
| | B3- MC-II | | | | B1-RME | | | | | | |
| | | | | | B2-OC | | | | | | |
| | | | | | B3-MHP | | | | | | |
| Sat | EASD | EASD | | | B1- GD/M (ADS lab) | | | | | | |
| | | | | | B2- MC(T)/EASD(T) | | | | | | |
| | | | | | B3- MC(T)/EASD(T) | | | | | | |
| Sun | B1- OC | | | | MC-II | MC-II | | | | | |
| | B2- MHP | | | | | | | | | | |
| | B3- EASD | | | | | | | | | | |
| Mon | B1- GT/LIB (CAED- III) | | | | RME | EASD | | | | | |
| | B2- LIB/GT (ADS lab) | | | | | | | | | | |
| | B3- LIB/GT (CAED- III) | | | | | | | | | | |
| Tue | MC | RME | | | OC | OC | | B1- EASD | B2- MC-II (AAK) | B3- RME | Proctor |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| Batch | Proctor Teacher | Subject | Subject Teacher | Practical Teacher | Practical Location |
|-------|---------------------|------------|----------------------------|-------------------|----------------------------|
| B1 | /Prof. S. V. Jagzap | RME | Ms.L.A.Palange | Ms.L.A.Palange | MW Lab |
| B2 | Mr. M.A.Deshmukh | MC-II | Mr.M.A.Deshmukh | M.A.D+AAK | MP Lab |
| B3 | Mr. S. M. Karve | EASD | Mr.H.K.Bhaldar | Ms.S.A.Atole+HKB | EDCP Lab |
| | | OC | Ms.N.P.Kulkarni | Ms.N.P.Kulkarni | MF-426 |
| | | MC | Mr.J.S.Hallur | Mr.J.S.Hallur | Communication Lab |
| | | MHP | Mr. A. A. Kadam | | EDP Lab, CAED-II, CAED-III |
| | | CIP | Prof. B. S. Sawase | | MF-426 |
| | | Gate Tutor | B1- SCD, B2- /LAP, B3- SDP | | ADS Lab & (CAED-II) |
| | | GD/M | B1- PBK, B2- MMW, B3- SDP | | CAED-I & II |
| | | ATT | /P. R. Dolas | | |

TT Co ordinator
/Prof. L. A. Palange & /Prof. S. A. Atole

Ms.L.A.Palange

H.O.D. (ENTC)
Dr. A. S. Vibhute

Dept. of Electronics & Telecom. Engg.
P. Q. E. Pandharpur



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR.
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Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

Date: 18-09-2019

Notice

All TE (Div-A & B) students of Electronics and telecommunication department are hereby informed to prepare three synopses for your Hardware Mini Project (using Microcontroller) and submit the selected synopsis copy duly signed by your project guide and HOD on or before 30-09-2019.


The students need to prepare 2 hard copies of selected project synopsis as per the format attached with this notice, format is also displayed on notice board and submit one copy to Mr. M. A. Deshmukh.

The students also need to prepare a seminar presentation on the project topic with the help of power point presentation. Presentation will be delivered to your project guide on or before 05-10-2019.

Follow the deadlines to avoid disciplinary action.


(Prof. M.A. Deshmukh)

TE Project Coordinator


(Dr. A. S. Vibhute)

H.O.D. ENTC

HEAD

Dept of Electronics & Telecom. Engg.
Pandharpur

SVERI's College of Engineering, Pandharpur

Department of Electronics & Telecommunication Engg.

Monthly Activity Report

Name of Committee: **Project & Seminar (TE ENTC)**

Academic Year :2019-20 Sem: **I**

| Sr. NO. | Date | Activity/Event | Resource Person with Email.ID | No. of Students /Faculty Benefited | mapping | | Remark |
|---------|----------------------|--|---|------------------------------------|---------|-----|--------|
| | | | | | PO | PSO | |
| 1 | 24-06-19 to 09-07-19 | Formation of Project Groups & Selection of Area of Interest | Mr. M. A. Deshmukh | 120 | | | |
| 2 | 13-07-19 to 16-07-19 | Project Guide Allocation | Mr. M. A. Deshmukh | 120 | | | |
| 3 | 19-07-19 to 30-07-19 | Selection of project titles by searching IEEE papers/ ideas / topics from - i) Instrumentation and Control Systems ii) Electronic Communication Systems iii) Biomedical Electronics iv) Power Electronics v) Audio, Video Systems vi) Embedded Systems vii) Mechatronics Systems | Student along with respective guides | 120 | | | |
| 4 | 03-08-19 to 31-08-19 | Preparation of 3 synopsis based on searched IEEE Papers / New ideas / Societal need | Student along under the guidance of respective guides | 120 | | | |
| 5 | 05-09-19 to 24-09-19 | Finalization of Circuit Diagram for Finalized Project Topic. | | 120 | | | |
| 6 | 26-09-19 to 05-10-19 | Presentation of selected topic in front of Guide | | 120 | | | |

Name & Sign of Coordinator

(Mr. M. A. Deshmukh)

HOD

(Dr. A. S. Vibhute)

Dept. of Electronics & Telecom. Engg.
S. V. E. Pandharpur

SVERI's College of Engineering, Pandharpur

Department of Electronics & Telecommunication Engg.

Monthly Activity Report

Name of Committee: **Project & Seminar (TE ENTG)**

Academic Year: 2019-20 SEM: I/II

| Sr. NO. | Date | Activity/Event | Resource Person with Email.ID | No. of Students /Faculty Benefited | Mapping | | Remark |
|---------|----------------------|---|--------------------------------------|------------------------------------|---------|-----|--------|
| | | | | | PO | PSO | |
| 1 | 01-01-20 to 16-01-20 | Based on submitted Synopsis Finalization of Circuit Diagram for Selected Project Topic. | Student along with respective guides | 110 | | | |
| 2 | 17-01-20 to 28-01-20 | Individual Components testing and simulation of each (If applicable) | | 110 | | | |
| 3 | 30-01-20 to 11-02-20 | Integrated circuit(Combined Circuit) testing with appropriate Test Points | | 110 | | | |
| 4 | 13-02-20 to 17-02-20 | Designing/ Writing Flow chart /Algorithm & Embedded Code. | | 110 | | | |
| 5 | 19-02-20 to 29-02-20 | PCB Layout Preparation , Etching & Drilling | | 110 | | | |
| 6 | 01-03-20 to 12-03-20 | Components Soldering & Testing of assembled PCB | | 110 | | | |
| 7 | 14-03-20 to 24-03-20 | Programming Microcontroller & testing of Integrated Hardware Circuit. | | 110 | | | |
| 8 | 26-03-20 to 29-03-20 | Preparation of Report and Demonstration to Guide | | 110 | | | |

Name & Sign of Coordinator
(Mr. M. A. Deshmukh)

HOD
HEAU
Dep. of Electronics & Telecom. Engg.
C. Q. E Pandharpur

TE A Div Project Groups A. Y. 2019-20
Status of TE ENTC Project Sem-I& II

TE Project Coordinator

HEAD

TE B Div Project Groups A. Y. 2019-20
Status of TE ENTIC Project Sem-I & II

| Sr.No. | Project Group no. | Name of Student | Roll No. | Area of Interest | Guide Name | Signature of Guide |
|--------|-------------------|------------------------------|----------|-------------------------|----------------------|--------------------|
| 1 | TEB 01 | More Vaishnavi Jaysing | 25 | IoT & Image Processing | Dr. A. S. Vibhute | |
| 2 | | Devkate Gayatri Chichalappa | 6 | | | |
| 3 | | Bhaganagare Aishwarya Rajesh | 3 | | | |
| 4 | TEB 02 | Nirmale Rutuja Narayan | 26 | Embedded Systems | Ms. L. A. Palange | |
| 5 | | Maske Akshay Rajendra | 47 | | | |
| 6 | | katkamwar shrinivas D | 46 | | | |
| 7 | TEB 03 | suryawanshi chandrashikhar | 53 | DSP based system | Prof.M.S Mathpati | |
| 8 | | Shinde Jyoti Sanjay | 33 | | | |
| 9 | | Korape Vaishnavi Sanjay | 18 | | | |
| 10 | TEB 04 | Shelake Puja Ramchandra | 32 | Embedded Systems | Mr.D.P. Narsale | |
| 11 | | Kumbhar Seema Ramdas | 19 | | | |
| 12 | | Dhekale Pratiksha Rajaram | 28 | | | |
| 13 | TEB 05 | Randive Ashwini Bramhdev | 30 | Embedded Systems | Mr.D.P. Narsale | |
| 14 | | Godase Shruti Nagesh | 12 | | | |
| 15 | | Dudhal Rutuja Suresh | 8 | | | |
| 16 | TEB 06 | Jagtap Suranjali Bandu | 15 | Embedded Systems | Mr. Akshay A. Jadhav | |
| 17 | | Mane Priyanka Satish | 20 | | | |
| 18 | | Thengal Pallavi Vishwas | 36 | | | |
| 19 | TEB 07 | Patil Ashvini Bhausaheb | 27 | Embedded Systems | Mr. D. A. Kumbhar | |
| 20 | | Jadhav Vrushali Arun | 14 | | | |
| 21 | | Molak Komal Tanaji | 22 | | | |
| 22 | TEB 08 | Ghongade Prajakta Dilip | 11 | IoT & Embedded Systems | Mr. J. S. Hallur | |
| 23 | | Shaikh Saniya Abdulla | 31 | | | |
| 24 | | Wadtile Vaishnavi Janardan | 39 | | | |
| 25 | TEB 09 | Indi Shivganga Subhash | 13 | Embedded Systems | Mrs. J. S. Shinde | |
| 26 | | Ghodake Shubham Tukaram | 44 | | | |
| 27 | | Vhasale Sagar Appaso | 55 | | | |
| 28 | TEB 10 | Shaikh Shoyeb Ayub | 52 | Embedded Systems | Ms. G. G. Unahale | |
| 29 | | Pathan Jameer Salim | 50 | | | |
| 30 | | Mogal Imran Ikbali | 48 | | | |
| 31 | TEB 11 | More Suhashini Balaji | 24 | Embedded Systems & VLSI | Mr. N. S. Admille | |
| 32 | | Deokar Namrata Dattatray | 7 | | | |
| 33 | | Bagal Madhuri Navnath | 1 | | | |
| 34 | TEB 12 | Manepatil Aarti Shahaji | 21 | Embedded Systems | Mr. S. P. Swami | |
| 35 | | Khandare Darshana Rajesh | 60 | | | |
| 36 | | Walugade Pratiksha Ankush | 40 | | | |
| 37 | TEB 13 | Pujari Sapna Siddharam | 29 | Embedded & VLSI Systems | Ms. L. A. Palange | |
| 38 | | Vanave Suchitra Bibhishan | 37 | | | |
| 39 | | Vidhate Dnyaneshwari Gorakh | 38 | | | |
| 40 | TEB 14 | Yadav Prajakta Dharmaraj | 41 | Embedded & VLSI Systems | Ms. N. P. Kulkarni | |
| 41 | | More Mayuri Arvind | 23 | | | |
| 42 | | Kahatake Arpita Vijaykumar | 17 | | | |
| 43 | TEB 15 | Tapise Puja Digambar | 35 | Embedded Systems | Mr. S. P. Swami | |
| 44 | | Bennesur Laxmi Iranna | 2 | | | |
| 45 | | Jamagi Yogini Siddhapa | 16 | | | |
| 46 | TEB 16 | Mukare Vaibhav S. | 49 | DSP based system | Mr. N. S. Admille | |
| 47 | | Salunkhe Tushar T. | 51 | | | |
| 48 | | Pandhare Nitin Vasudeo | 57 | | | |
| 49 | TEB 17 | Gaikwad Amruta Balasaheb | 9 | Antenna Design | Mr. Ashish A. Jadhav | |
| 50 | | Bharama swati Shivalingappa | 4 | | | |
| 51 | | Bhosale Utkarsha Bharat | 5 | | | |
| 52 | TEB 18 | Gawali Renuka Sahadev | 10 | Embedded Systems | Ms. S. A. Atole | |
| 53 | | Ghdage Shivani Ganesh | 58 | | | |
| 54 | | Deshmukh Abhishek Vilas | 42 | | | |
| 55 | TEB 19 | More Swipnil Pandharinath | 61 | | Mr. V. V. Dhage | |
| 56 | | Parakhe Vallabh Sanjay | 62 | | | |

TE Project Coordinator

HOD

HEAD
Dept. of Electronics & Telecom. Eng
Q. C. Pandharpur

MINI PROJECT EVALUATION WITH RUBRICS

Date: 20-01-2022

SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR STUDENT MARK EVALUATION REPORT

ACADEMIC YEAR: 2019-20

DEPARTMENT: ELECTRONICS AND TELECOMMUNICATION ENGINEERING

PROGRAM: UNDER GRADUATE IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING

CLASS: THIRD YEAR

SEMESTER: SEMESTER 2

DIVISION: A

COURSE: MINI HARDWARE PROJECT (ET327-18)

TOOL NAME: MINI PROJECT

Minimum Passing Marks: 10

TOOL MAXIMUM MARKS: 25

Target Level (% Target Marks for CO Attainment): 40

| Sr. No. | PRN NO. | Roll No. | Name of Student | Linked CO | ET327-18.1 | ET327-18.2 | ET327-18.3 | ET327-18.4 | ET327-18.4 |
|---------|-------------|------------|------------------------------|------------------------------------|---|-------------------------------|--------------------------------|---------------------------------------|--------------------------|
| | | | | Max. Marks for Rubrics | 2 | 3 | 10 | 5 | 5 |
| | | | | Rubrics No. / Total Obtained Marks | Problem Analysis & Formulation using Simulation tools | Components Testing & trouble- | Diagram Finalization, Hardware | Hardware Demonstration & Applications | Project Report & Project |
| 1 | 2.01603E+15 | 161ET11033 | HEGADE NIKITA MARUTI | 24 | 2 | 3 | 9 | 5 | 5 |
| 2 | 2.01603E+15 | 161ET11042 | YALMAR AKASH BHIMRAO | 20 | 2 | 3 | 9 | 4 | 2 |
| 3 | 2.01603E+15 | 161ET11046 | LOKHANDE MAYURI SANJAY | 23 | 2 | 3 | 9 | 4 | 5 |
| 4 | 2.01603E+15 | 161ET11049 | GHUGE ASHWINI DATTATRYA | 21 | 2 | 3 | 9 | 4 | 3 |
| 5 | 2.01703E+15 | 171ET11001 | DUCHAL SNEHAL BALASAHEB | 24 | 2 | 3 | 9 | 5 | 5 |
| 6 | 2.01703E+15 | 171ET11002 | KADAM OMKAR SUNIL | 22 | 2 | 3 | 8 | 5 | 4 |
| 7 | 2.01703E+15 | 171ET11003 | KULKARNI PRATHMESH PRAKASH | 20 | 2 | 3 | 9 | 4 | 2 |
| 8 | 2.01703E+15 | 171ET11004 | HARANE SANJIVANI RAJU | 22 | 2 | 3 | 8 | 4 | 5 |
| 9 | 2.01703E+15 | 171ET11006 | KALE KOMAL KIRAN | 22 | 2 | 3 | 10 | 5 | 2 |
| 10 | 2.01703E+15 | 171ET11007 | WAGAJ SONALI SHIVAJI | 22 | 2 | 3 | 8 | 5 | 4 |
| 11 | 2.01703E+15 | 171ET11008 | PATHAN SAMEER KHAJODDIN | 22 | 2 | 3 | 8 | 5 | 4 |
| 12 | 2.01703E+15 | 171ET11009 | SHAIKH IMRAN HAJISAB | 21 | 2 | 3 | 9 | 5 | 2 |
| 13 | 2.01703E+15 | 171ET11010 | SHIRAME AMRUTA DHANAJI | 21 | 2 | 3 | 10 | 5 | 1 |
| 14 | 2.01703E+15 | 171ET11011 | MIRGANE SHRADDHA BHARAT | 24 | 2 | 3 | 9 | 5 | 5 |
| 15 | 2.01703E+15 | 171ET11013 | WALEKAR SMITA MAHADEV | 19 | 2 | 3 | 9 | 4 | 1 |
| 16 | 2.01703E+15 | 171ET11014 | WAGAJ PRATIKSHA HANUMANT | 21 | 2 | 3 | 9 | 4 | 3 |
| 17 | 2.01703E+15 | 171ET11015 | MENDHEGIRI SHWETA SHANTINATH | 23 | 2 | 3 | 9 | 4 | 5 |
| 18 | 2.01703E+15 | 171ET11016 | SHEMBADE JANHAVI DILIP | 22 | 2 | 3 | 9 | 3 | 5 |
| 19 | 2.01703E+15 | 171ET11017 | WARE SAROJA SHAMRAO | 18 | 2 | 3 | 8 | 3 | 2 |
| 20 | 2.01703E+15 | 171ET11018 | KOLI SUDARSHAN SOMARAYA | 20 | 2 | 3 | 7 | 5 | 3 |
| 21 | 2.01703E+15 | 171ET11019 | PATIL VISHAL VIJAYKUMAR | 19 | 2 | 1 | 8 | 4 | 4 |
| 22 | 2.01703E+15 | 171ET11024 | CHAVARE BHUSHAN MAHAVIR | 21 | 2 | 3 | 8 | 5 | 3 |
| 23 | 2.01703E+15 | 171ET11027 | NIKTE GEETA PRASHANT | 21 | 1 | 2 | 8 | 5 | 5 |
| 24 | 2.01703E+15 | 171ET11029 | MAHAJAN ISHITA PRADEEP | 22 | 2 | 3 | 8 | 4 | 5 |
| 25 | 2.01703E+15 | 171ET11030 | VHARGAR MONALI VILAS | 23 | 2 | 3 | 9 | 4 | 5 |
| 26 | 2.01703E+15 | 171ET11031 | SALUNKHE OMKAR ARUN | 19 | 2 | 3 | 7 | 5 | 2 |
| 27 | 2.01703E+15 | 171ET11033 | PHULARE NIKITA SHAM | 22 | 2 | 3 | 8 | 4 | 5 |

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|----|-------------|-------------|----------------------------|----|--|---|---|----|---|
| 28 | 2.01703E+15 | 171ET11034 | MANJUNATH SIDRAM SARWADKAR | | | | | | |
| 29 | 2.01703E+15 | 171ET11039 | MORE RISHIKESH MACCHINDRA | 21 | | | | | |
| 30 | 2.01703E+15 | 171ET11040 | PAWAR SANJAY SHANKAR | 25 | | 2 | 3 | 8 | 5 |
| 31 | 2.01703E+15 | 171ET11043 | KHANDEKAR NISHA SOUDAGAR | 21 | | 2 | 3 | 10 | 5 |
| 32 | 2.01703E+15 | 171ET11044 | NAMDAS DIPIKA DNYANESHWAR | 22 | | 2 | 3 | 8 | 5 |
| 33 | 2.01703E+15 | 171ET11048 | MULANI SALMAN SHAHAJAHAN | 24 | | 2 | 3 | 8 | 4 |
| 34 | 2.01703E+15 | 171ET11049 | GUNJAL SUREKHA VILAS | 24 | | 2 | 3 | 9 | 5 |
| 35 | 2.01703E+15 | 171ET11050 | KALE ABHILASHA AVINASH | 22 | | 2 | 3 | 9 | 5 |
| 36 | 2.01703E+15 | 171ET11051 | RAJMANE MANALI SUNIL | 22 | | 2 | 3 | 8 | 4 |
| 37 | 2.01703E+15 | 171ET11052 | REPAL SHRADDHA ANIL | 22 | | 2 | 3 | 8 | 4 |
| 38 | 2.01703E+15 | 171ET11053 | RUSHIKESH SOMNATH HODADE | 24 | | 2 | 2 | 8 | 5 |
| 39 | - | 171ET11054 | ALDAR SUSHANT TANAJI | 24 | | 2 | 3 | 9 | 5 |
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| 41 | 2.01703E+15 | 171ET11067 | MORE VIKRAM ANKUSH | 21 | | 2 | 3 | 8 | 3 |
| 42 | 2.01703E+15 | 171ET11071 | SANTOSH DATTATRAYA UBALÉ | 25 | | 2 | 3 | 10 | 5 |
| 43 | 2.01703E+15 | 171ET11074 | MHAMANE AISHWARYA SANJAY | 23 | | 2 | 3 | 8 | 5 |
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| 47 | 2.01703E+15 | 171ET11081 | PATIL ASHVINI MARUTI | 22 | | 2 | 3 | 7 | 5 |
| 48 | 2.01703E+15 | 171ET11082 | MORE KOMAL NANASAHEB | 24 | | 2 | 3 | 9 | 5 |
| 49 | 2.01703E+15 | 171ET11083 | RUTUJA SHIVAJI CHAVAN | 23 | | 2 | 3 | 8 | 5 |
| 50 | 2.01703E+15 | 171ET11084 | AVADHUT RENUKA AUDUMBAR | 24 | | 2 | 3 | 9 | 5 |
| 51 | 2.01703E+15 | 171ET11085 | BACHUTE BHUSHAN SIDDESHWAR | 17 | | 2 | 3 | 7 | 2 |
| 52 | 2.01703E+15 | 171ET11086 | DANURE AMIT GANPATRAO | 17 | | 2 | 3 | 8 | 3 |
| 53 | 2.01703E+15 | 171ET12044 | CHAKOTE DIGVIJAY GIRISH | 23 | | 2 | 3 | 8 | 5 |
| 54 | 2.01703E+15 | 171ET12072 | NAGANE PRAJAKTA DAYANAND | 23 | | 2 | 3 | 10 | 5 |
| 55 | 2.01803E+15 | 181ET12043 | THORAT ASHUTOSH RAMESH | 21 | | 2 | 3 | 8 | 3 |
| 56 | 2.01703E+15 | T171ET11087 | DANDAWATE UPENDRA NARSINHA | 19 | | 2 | 3 | 9 | 2 |


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MINI PROJECT EVALUATION WITH RUBRICS

Date: 20-01-2022

SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR

STUDENT MARK EVALUATION REPORT

ACADEMIC YEAR: 2019-20

DEPARTMENT: ELECTRONICS AND TELECOMMUNICATION ENGINEERING

PROGRAM: UNDER GRADUATE IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING

CLASS: THIRD YEAR

SEMESTER: SEMESTER 2

DIVISION: B

COURSE: MINI HARDWARE PROJECT (ET327-18)

TOOL NAME: MINI PROJECT

Minimum Passing Marks: 10

TOOL MAXIMUM MARKS: 25

Target Level (% Target Marks for CO Attainment): 40

| Sr. No. | PRN NO. | Roll No. | Name of Student | Linked CO | ET327-18.1 | ET327-18.2 | ET327-18.3 | ET327-18.4 | ET327-18.4 |
|---------|-------------|------------|----------------------------------|------------------------------------|---|--|--|---------------------------------------|--|
| | | | | Max. Marks for Rubrics | 2 | 3 | 10 | 5 | 5 |
| | | | | Rubrics No. / Total Obtained Marks | Problem Analysis & Formulation using Simulation tools | Individual Components Testing & trouble-shooting | Circuit Diagram Finalization, Hardware Design & Integrated Testing | Hardware Demonstration & Applications | Synopsis, Project Report & Project Diary |
| 1 | 2.01703E+15 | 171ET12033 | KHANDARE DARSHANA RAJESH | 22 | 2 | 2 | 8 | 5 | 5 |
| 2 | 2.01803E+15 | 181ET12001 | DEVAKATE GAYATRI CHICHALAPPA | 24 | 2 | 3 | 9 | 5 | 5 |
| 3 | 2.01803E+15 | 181ET12002 | KUMBHAR SEEMA RAMDAS | 24 | 2 | 3 | 9 | 5 | 5 |
| 4 | 2.01803E+15 | 181ET12003 | KORAPE VAISHNAVI SANJAY | 23 | 2 | 3 | 9 | 4 | 5 |
| 5 | 2.01803E+15 | 181ET12004 | RANDIVE ASHWINI BRAMHADEV | 22 | 2 | 3 | 8 | 5 | 4 |
| 6 | 2.01803E+15 | 181ET12005 | JAGTAP SURANJALI BANDU | 21 | 2 | 3 | 8 | 4 | 4 |
| 7 | 2.01803E+15 | 181ET12006 | GODASE SHRUTI NAGESH | 22 | 2 | 2 | 8 | 5 | 5 |
| 8 | 2.01803E+15 | 181ET12007 | SHINDE JYOTI SANJAY | 23 | 2 | 2 | 9 | 5 | 5 |
| 9 | 2.01803E+15 | 181ET12008 | NIRMALE RUTUJA NARAYAN | 23 | 2 | 3 | 9 | 4 | 5 |
| 10 | 2.01803E+15 | 181ET12009 | MORE VAISHNAVI JAYSING | 23 | 2 | 3 | 9 | 4 | 5 |
| 11 | 2.01803E+15 | 181ET12010 | MANE PATIL AARTI SHAHAJI | 21 | 2 | 2 | 9 | 4 | 4 |
| 12 | 2.01803E+15 | 181ET12011 | MORE SUHASHINI BALAJI | 21 | 2 | 2 | 9 | 4 | 4 |
| 13 | 2.01803E+15 | 181ET12012 | SHELAK PUJA RAMCHANDRA | 22 | 2 | 2 | 9 | 4 | 5 |
| 14 | 2.01803E+15 | 181ET12013 | PATIL ASHVINI BHAUSAHEB | 17 | 2 | 2 | 7 | 3 | 3 |
| 15 | 2.01803E+15 | 181ET12014 | MORE MAYURI ARVIND | 20 | 2 | 2 | 8 | 4 | 4 |
| 16 | 2.01803E+15 | 181ET12015 | YADAV PRAJAKTA DHARMARAJ | 20 | 2 | 2 | 8 | 4 | 4 |
| 17 | 2.01803E+15 | 181ET12016 | MOLAK KOMAL TANAJI | 19 | 2 | 2 | 8 | 3 | 4 |
| 18 | 2.01803E+15 | 181ET12017 | BHOSALE UTKARSHA BHARAT | 23 | 2 | 3 | 9 | 4 | 5 |
| 19 | 2.01803E+15 | 181ET12018 | BHARAMA SWATI SHIVALINGAPPA | 23 | 2 | 3 | 9 | 4 | 5 |
| 20 | 2.01803E+15 | 181ET12019 | MANE PRIYANKA SATISH | 17 | 2 | 2 | 7 | 3 | 3 |
| 21 | 2.01803E+15 | 181ET12020 | INDI SHIVGANGA SUBHASH | 23 | 2 | 3 | 9 | 4 | 5 |
| 22 | 2.01803E+15 | 181ET12021 | JAMAGI YOGINI SIDDHAPPA | 23 | 2 | 3 | 9 | 5 | 4 |
| 23 | 2.01803E+15 | 181ET12022 | KATAKAMAWAR SHREENIVAS DATTATRAY | 23 | 2 | 3 | 9 | 4 | 5 |
| 24 | 2.01803E+15 | 181ET12023 | WALUGADE PRATIKSHA ANKUSH | 23 | 2 | 3 | 9 | 4 | 5 |
| 25 | 2.01803E+15 | 181ET12024 | BAGAL MADHURI NAVANATH | 23 | 2 | 3 | 9 | 4 | 5 |
| 26 | 2.01803E+15 | 181ET12025 | PRATIKSHA RAJARAM DHEKALE | 23 | 2 | 3 | 9 | 4 | 5 |
| 27 | - | 181ET12026 | VANAVE SUCHITA BIBHISHAN | 21 | 2 | 3 | 8 | 4 | 4 |
| 28 | 2.01803E+15 | 181ET12027 | BHAGANAGARE AISHWARYA RAJESH | 21 | 2 | 2 | 8 | 4 | 5 |
| 29 | 2.01803E+15 | 181ET12028 | WADTILE VAISHNAVI JANARDAN | 23 | 2 | 3 | 9 | 4 | 5 |
| 30 | 2.01803E+15 | 181ET12029 | GAWALI RENUKA SAHADEV | 21 | 2 | 3 | 8 | 4 | 4 |
| 31 | 2.01803E+15 | 181ET12030 | JADHAV VRUSHALI ARUN | 19 | 2 | 2 | 7 | 4 | 4 |

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| 32 | 2.01803E+15 | 181ET12031 | SURYAWANSHI CHANDRASHEKHAR NANASAHEB | 23 | 2 | 3 | 9 | 5 | 4 |
| 33 | 2.01803E+15 | 181ET12033 | TAPISE POOJA DIGAMBAR | 23 | 2 | 3 | 9 | 4 | 5 |
| 34 | 2.01803E+15 | 181ET12034 | PUJARI SAPANA SIDDHARAM | 20 | 2 | 2 | 8 | 4 | 4 |
| 35 | 2.01803E+15 | 181ET12035 | GHONGADE PRAJAKTA DILIP | 19 | 2 | 2 | 7 | 4 | 4 |
| 36 | 2.01803E+15 | 181ET12036 | DEOKAR NAMRATA DATTATRAY | 23 | 2 | 3 | 9 | 5 | 4 |
| 37 | 2.01803E+15 | 181ET12037 | VIDHATE DNYANESHWARI GORAKH | 21 | 2 | 3 | 8 | 4 | 4 |
| 38 | 2.01803E+15 | 181ET12038 | BENNESUR LAXMI IRANNA | 23 | 2 | 3 | 9 | 4 | 5 |
| 39 | 2.01803E+15 | 181ET12039 | THENGAL PALLAVI VISHWAS | 16 | 2 | 2 | 6 | 3 | 3 |
| 40 | 2.01803E+15 | 181ET12041 | SHAIKH SHOYEB AYUB | 21 | 2 | 3 | 8 | 4 | 4 |
| 41 | 2.01803E+15 | 181ET12042 | DUDHAL RUTUJA SURESH | 23 | 2 | 3 | 9 | 4 | 5 |
| 42 | 2.01803E+15 | 181ET12045 | MUKARE VAIBHAV SURYAKANT | 20 | 2 | 2 | 8 | 4 | 4 |
| 43 | 2.01803E+15 | 181ET12046 | MASKE AKSHAY RAJENDRA | 23 | 2 | 3 | 9 | 4 | 5 |
| 44 | 2.01803E+15 | 181ET12047 | JADHAV MAHESH SHIVAJI | 19 | 2 | 2 | 7 | 4 | 4 |
| 45 | 2.01803E+15 | 181ET12048 | GHODAKE SHUBHAM TUKARAM | 22 | 2 | 2 | 9 | 4 | 5 |
| 46 | 2.01803E+15 | 181ET12049 | DESHMUKH ABHISHEK VILAS | 23 | 2 | 3 | 9 | 5 | 4 |
| 47 | 2.01803E+15 | 181ET12050 | GAIKWAD AMRUTA BALASAHEB | 23 | 2 | 2 | 8 | 3 | 4 |
| 48 | 2.01803E+15 | 181ET12051 | PATHAN JAMEER SALIM | 19 | 2 | 2 | 8 | 4 | 4 |
| 49 | 2.01803E+15 | 181ET12052 | SHAIKH SANIYA ABDULLA | 20 | 2 | 2 | 8 | 5 | 5 |
| 50 | 2.01803E+15 | 181ET12053 | VHASALE SAGAR APPASO | 22 | 2 | 2 | 8 | 4 | 4 |
| 51 | 2.01803E+15 | 181ET12054 | SALUNKHE TUSHAR TUKARAM | 20 | 2 | 2 | 9 | 4 | 5 |
| 52 | - | 181ET12057 | PANDHARE NITIN VASUDEO | 22 | 2 | 2 | 8 | 4 | 3 |
| 53 | 2.01803E+15 | 181ET12058 | GHADAGE SHIVANI GANESH | 19 | 2 | 2 | 8 | 4 | 3 |


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PUNYASHLOK AHILYADEVI HOLKAR

SOLAPUR UNIVERSITY, SOLAPUR

A

PROJECT REPORT

ON

"Fire Detection and alarm System using 8051"

Submitted by

| Sr. No. | Roll No | Name Of The Student |
|---------|---------|--------------------------|
| 1. | 49 | Sucheta Bharat Yelmar. |
| 2. | 51 | PrajaktaPramodPathak |
| 3. | 45 | PrajaktaKashinathWakade. |

(Project Group No. : TE-A18)

T.E. Electronics and Telecommunication

Engineering

Under the guidance of

Ms.S.S.Kadam

Department of Electronics and Telecommunication Engineering



SVERI's College of Engineering, Pandharpur

Academic Year: 2018-19

SVERI's COLLEGE OF ENGINEERING, PANDHARPUR

Certificate

This is to certify that the Seminar report entitled

"Fire Detection and alarm System using 8051"

is submitted by

| Sr.No | Roll No | Name Of The Student. |
|-------|---------|---------------------------|
| 1 | 49 | Sucheta Bharat Yelmar. |
| 2 | 51 | Prajakta PramodPathak |
| 3 | 45 | Prajakta Kashinath Wakade |

(Project Group No. : TE-A18)

For partial fulfilment of TE in Electronics and Telecommunication as
per requirement of

Punyashlok Ahilyadevi Holkar


Solapur University, Solapur for the academic year 2018-19.


(Mrs. S. S. Madam)

GUIDE


(Prof. Dr. A. S. Vibhute)

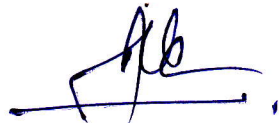
H.O.D.


(Prof. Dr. B. P. Ronge)

PRINCIPAL

Date - 24/4/19

Place - Pandharpur


Sign of External

DECLARATION

We are undersigned have submitted the report for the proposed project work entitled "**Fire Detection and alarm System using 8051**" declare that we have submitted the report after thorough study & is not copied from some source.

Name

Sign

1. Ms. Sucheta Bharat Yelmar.
2. Ms. Prajakta Pramod Pathak.
3. Ms. Prajakta Kashinath Wakade.

Sucheta
ppathak
P. Wakade

ACKNOWLEDGEMENT

We feel happy in forwarding report as image sincere efforts. The successful project reflects project reflects our work, efforts of our guide gives us good information. We give special thanks to our guide **Ms.S.S.Kadam** for her constant interest and constant encouragement throughout the completion of our project. We are also equally indebted to our Principal **Prof.Dr.B.P.Ronge** and our HOD (Electronics and Telecommunication department) **Prof. Dr.A.S.Vibhute** for his valuable help whenever needed. We expressed deep gratitude of all staff members who lend us their valuable support and co-operation to enables us to complete our project successfully. At last we would like to thanks our parents who constantly supported us for this work in all aspect.

1. Sucheta Bharat Yelmar.
2. Prajakta Pramod Pathak.
3. PrajaktaKashinathWakade.

FIRE DETECTION AND ALARM SYSTEM USING 8051

ABSTRACT

A "Fire Detection and alarm System using 8051" has a number of devices working together to detect and warn people through visual and audio appliances when smoke, flame, carbon monoxide or other emergencies are present. A alarm alerts you when they you are busy, working or sleeping. You can therefore take action before major damage takes place, thus saving you the cost of property loss- also saving insurance companies a lot of damage cost. More than half of house fires take place in homes that do not have flame alarms, and mostly at night, resulting in a high number of deaths. It is easy to get trapped in the start of a fire. An early detection can get you out of a situation that would potentially turn into a tragedy. Make sure to also alert your family and friends on the importance of installing fire alarm systems.

FIRE DETECTION AND ALARM SYSTEM USING 8051

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Chapter No 1

INTRODUCTION

INTRODUCTION

We all are well aware about The “**Kamala Mills fire**” was a major fire accident at the Kamala Mills Compound in one Above Pub and Mojo's Bistro pub situated in Lower Parel area of Mumbai which resulted in the deaths of 14 people and several injured including an officer of Indian Armed Forces on 29 December 2017 at 22 hrs. Our project “**Fire Detection and alarm System using 8051**” is very useful in such critical condition, that the fire sensor will sense the fire and alarm will ringing. We understood the information about fire. “Fire detection and alarm system” is very important to avoid major accidents which are caused due to fire. Fire may cause a big loss or damage to any property, home, companies, warehouses, malls or bazaar. It also causes severe injuries to human lives. And that is the reason fire detection systems are very important in the day today's life.

HISTORY

With over three decades in the industry, we've clearly seen a lot of changes and been proud to be at the forefront of introducing many of these new products to market, most notably addressable detectors and intelligent detector heads. It was the 1980s and 1990s which brought probably the biggest changes to fire detectors, with the industry moving in tandem with technical advances towards addressable products, opening up a new world of opportunities to networked fire detection solutions. In 1986, Apollo Fire Detectors introduced a range of analogue addressable detectors called Series 90 with the principles employed used to subsequently develop the XP95 range, which remains one of our most popular products today. Although Series 90 and XP95 are both analogue addressable devices, they use digital protocol for panel/device communication and mark the beginning of a fire detection design age which maximized the use of advances in technology to allow detectors to communicate effectively with control panels and identify the exact location of activation. In the late 1990s, these moves into the world of new technology took another significant step with the introduction of intelligent fire detectors, such as our Discovery range, which essentially employed the use of intelligent sensors in detector heads to make decisions and allowed systems to be fully tailored towards their application. For example, different levels of sensitivity for a building can be provided at different times of day such as a fire detection

system switching combined smoke/heat multisensory in an entertainment venue to heat detection only when smoke machines are being used. Intelligent detectors can also analyse the signals from their smoke or heat sensors and decide whether the source is likely to be smoke from a real fire or a false reason, such as cooking fumes. The 1990s also saw the introduction of other key features, such as drift compensation – a feature that adjusts for environmental conditions such as dust to ensure a detector is not adversely affected. These industry moves signalled a huge milestone in the reliability of detectors and set the scene for the future of the industry, with this technology still built upon today.

Chapter No 2

LITERATURE SURVEY

LITERATURE SURVEY

[1] Fires continue to occur in modern architecture, the people's lives and property has brought huge losses. In order to reduce the fire in the building automatic fire alarm equipment placed into a necessity. This paper discusses the automatic fire alarm system, the composition and working principle. The system will be collected through the fire alarm detector to the fire, fault and other signals sent to the sub-machine, Submachine re-transmission of such information will be sent to the fire alarm control, and then start from the controller, sound and light alarm display, alarm and other devices, and automatically print a fire information. This paper describes the overall structure of the fire alarm system, fire alarm control software in the design. Fire detectors using two-wire method to reduce the wall alignment, improve reliability, ease of construction and installation.

[2] The paper introduced an automatic warehouse fire alarm system based on MCU. The system was mainly made up of ATmega16, temperature sensors, smoke sensors, and EX-1 auto dialled alarm module. In the system, temperature signals were transformed to serial data, and smoke signals were transformed to voltage signals. All the data were processed by MCU. When the surveillance system checked fire in warehouse, alarm signal was turn on.

[3] Security and automation is prime concern in our day to day life. The approach to home and industrial automation and security system design is almost standardized nowadays. In this paper, we have tried to increase this standard by combining new techniques and developed a low cost home and industrial automated security systems. Everyone wants to be as much as secure as possible. The design of simple hardware circuit enables every user to use this fire sensor, temperature sensor, gas sensor, smoke sensor at home and industries.

[4]In this project, we are going to make a **Fire AlertSystem using ATMEGA8** microcontroller and **fire sensor**. **Fire** sensor can be of any type, however we are **using IR** (Infrared) based **Fire Sensor**. Although IR based **Fire Sensors** have some disadvantages mostly of inaccuracy, it is the cheapest and easiest way to detect **fire**.

[5] We **interface Flame Sensor with Arduino** and learn all the steps to build **Fire Alarm System** by using Arduino and flame sensor. Flame sensor module has photodiode to detect the light and op-amp to control the sensitivity. It is used to detect fire and provide HIGH

FIRE DETECTION AND ALARM SYSTEM USING 8051

signal upon the detection. Arduino reads the signal and provides alert by turning on buzzer and LED. Flame sensor used here is an IR based flame sensor.

Chapter No 3

PROBLEM STATEMENT AND OBJECTIVE

PROBLEM STATEMENT

Now days, in case of domestic as well as industrial applications, major problem is regarding to fire losses. These losses are not related to goods there may be a chance of death of human beings so we have decided to design a system which will be helpful for detection of fire. So that we can call to fire brigade for take some necessary actions

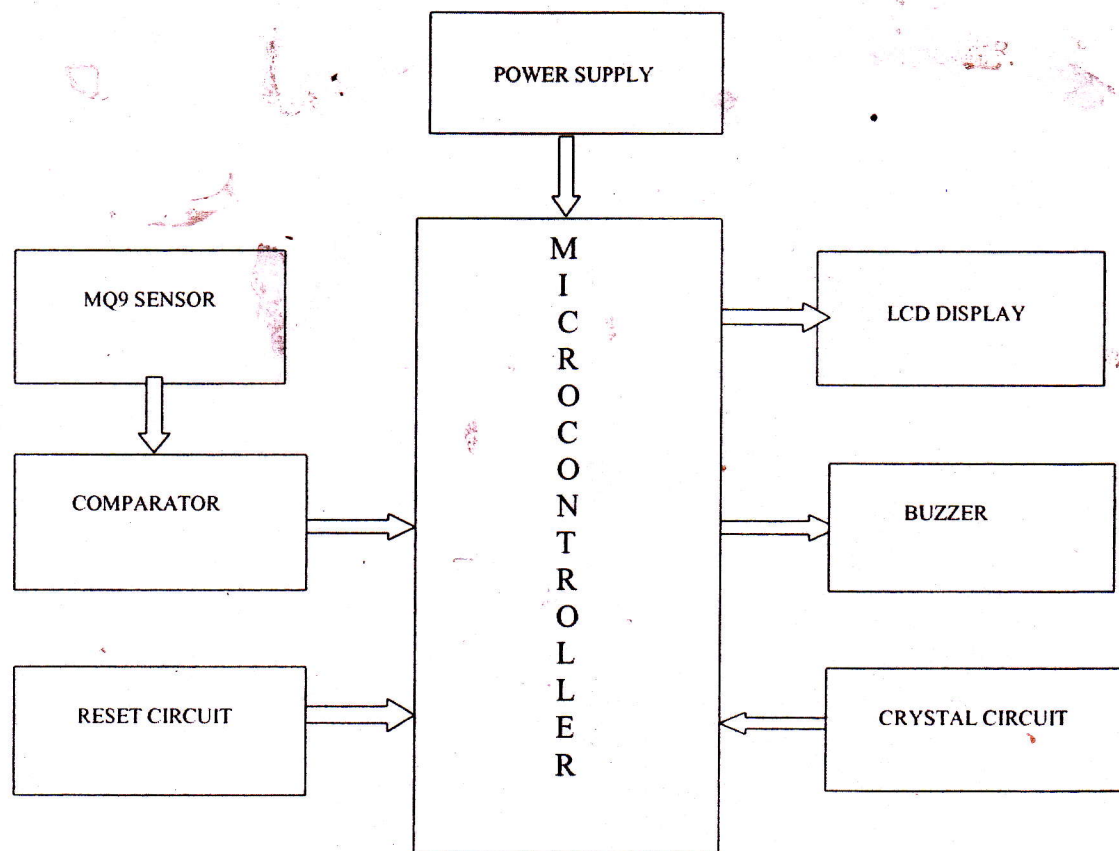
OBJECTIVE

- To design fire sensor system with the help of Microcontroller.
- To achieve minimum damage with the help of flame sensor system

Chapter No 4

METHODOLOGY

METHODOLOGY



Block diagram

SYSTEM DESCRIPTION

➤ Microcontroller-

Microcontroller is a heart of this system which is used to control and process multiple functions based on provided inputs. Microcontroller fetches the instruction from transmitter. We are interfacing all devices to I/O ports of microcontroller. The TXD and RXD separate pins are available for transmission and reception purpose.

➤ MQ9 Sensor-

Sensitive material of MQ-9 gas sensor is SnO_2 , which with lower conductivity in clean air. It makes detection by method of cycle high and low temperature, and detect CO when low temperature (heated by 1.5V). The sensor's conductivity is more higher along with the gas concentration rising. When high temperature (heated by 5.0V), it detects Methane, Propane etc. Combustible gas and cleans the other gases adsorbed under low temperature. Please use simple electro circuit, Convert change of conductivity to correspond output signal of gas concentration.

➤ Comparator-

A comparator is used to compare a measurable quantity with a reference or standard such as two voltages or currents. It outputs a digital signal showing the results. Analog devices offer an extensive portfolio of high speed and low power comparators and this allows us to provide our customers with more complete signal chain solutions. Our comparator offerings range from the fastest Si-based comparator on the market today to very low power CMOS comparators that consume only microamperes of power. Find the right comparators for your application with our selection tool and design tool.

➤ Reset circuit-

Reset is an active High input when reset is set to High, 8051 goes back to the power on state. The 8051 is reset by holding the RST high for at least two machine cycles and then returning it low.

➤ **LCD Display-**

LCD (liquid crystal display) is the technology used for displays in notebook and other smaller computers. An LCD is made with either a passive matrix or an active matrix display grid. The active matrix LCD is also known as a thin film transistor (TFT) display. The passive matrix LCD has a grid of conductors with pixels located at each intersection in the grid.

➤ **Buzzer-**

8051 reads the signal and provides alert by turning on buzzer. And Buzzer will ring.

➤ **Crystal Oscillator-**

An electronic circuit or electronic device that is used to generate periodically oscillating electronic signal is called as an electronic oscillator. The electronic signal produced by an oscillator is typically a sine wave or square wave. An electronic oscillator converts the direct current signal into an alternating current signal. The radio and television transmitters are broadcasted using the signals generated by oscillators. The electronic beep sounds and video game sounds are generated by the oscillator signals. These oscillators generate signals using the principle of oscillation.

➤ **Power supply-**

Input AC supply is needed to be converted into DC supply as per requirements of various components and devices. To provide different DC voltages, step-down transformers, voltage regulators are used.

➤ **Software Used-**

For simulation we can use Proteus software. While using this software, we need to add some flame sensor, microcontroller, and crystal oscillator.

Code-

FIRE DETECTION AND ALARM SYSTEM USING 8051

```
#include<reg51.h>
```

```
#define lcd P3
```

```
sbit FLAME=P1^1;
```

```
sbitrs=P2^0; //register select
```

```
sbitrw=P2^1; //RW
```

```
sbit en=P2^2; //enable
```

```
voidlcd_init();
```

```
voidcmd(unsigned char);
```

```
voiddat(unsigned char);
```

```
void delay();
```

```
voidlcd_string(char *s);
```

```
void main()
```

```
{
```

```
lcd_init();
```

```
lcd_string(" *s ");
```

```
while(1) {
```

```
if(FLAME)
```

```
{
```

```
cmd(0xc0);
```

```
lcd_string("Flame Detected");
```

```
delay();
```

```
    } else {
```

```
cmd(0xc0);
```

```
lcd_string(" FIAME NOT DETECTED ");
```

```
    }
```

```
}
```

```
}
```

```
voidlcd_init()
```

```
{
```


FIRE DETECTION AND ALARM SYSTEM USING 8051

```
cmd(0x38);  
cmd(0x0e);  
cmd(0x06);  
cmd(0x01);  
cmd(0x80);  
}
```

```
voidcmd(unsigned char a)  
{  
  lcd=a;  
  rs=0;  
  rw=0;  
  en=1;  
  delay();  
  en=0;  
}
```

```
voiddat(unsigned char b)  
{  
  lcd=b;  
  rs=1;  
  rw=0;  
  en=1;  
  delay();  
  en=0;  
}
```

```
voidlcd_string(char *s)  
{  
  while(*s) {  
    dat(*s++);  
  }  
}
```



```
void delay()
{
unsignedint i;
for(i=0;i<20000;i++);
}
```

➤ **Pin outs-**

- Vcc – 5v
- Gnd – Ground
- DO – P1.0

➤ **lcd**

- RS – P2.0
- RW – P2.1
- EN – P2.2
- Data Lines – P3.0 – P3.7

Chapter No-5
Advantages and Disadvantages

ADVANTAGES

- Lower Insurance Rates
- Constant Protection
- Deterrent to Criminals

DISADVANTAGES-

- Cut Phone Line
- Lower Insurance Rates
- False Alarms
- Expense

Chapter No-6
APPLICATIONS

APPLICATIONS-

- Hydrogen stations
- Combustion monitors for burner
- Oil and gas pipelines
- Automotive manufacturing facilities
- Nuclear facilities
- craft hangars
- Turbine enclosures

Experiential Learning through Final Year Projects

- **Solve Complex Engineering Problems**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**
- **Team work**


SVERUS College of Engineering, Pandharpur
Department of Electronics & Telecommunication

B. E. B TIME TABLE for year 2018-2019 SEM-I (w.e.f. 13/7/2018) Classroom No.- MF 423

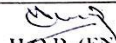
| Day / Time | 09.00am to 10.00am | 10.30am to 11.30am | 11.30am to 12.30pm | 12:30pm to 01:30pm | 1:30pm to 02:30pm | 2:30pm to 02:45pm | 02:45pm to 03:45 pm | 03:45pm to 04:45 pm | | |
|------------|----------------------------|--|--------------------|-----------------------------------|-------------------|-------------------|----------------------------------|-------------------------|--|--|
| Thu | SATCOM | IP | Lunch Break | B1-VLSI B2-CCN B3-SATCOM/CT | | Short Break | Gate Tutor (/ASS, /NPK) | CCN | | |
| Fri | B1-IP B2-VLSI B3-CCN | | | IPVLSI | | | CCN | Gate Tutor (/LAP, /ASS) | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Sat | VLSI | CCN | | B1-CCN B2-SATCOM/CT B3-IP | | | IP | CT | | |
| Sun | IP | Gate Tutor (/LAP, VSB) (CAED II) | | CCNCT | | | VLSI | SATCOM | | |
| Mon | CT | Gate Tutor (/LAP, /NSP)(CAED II & ADS) | | SATCOMVLSI | | | B1-SATCOM/CT B2-IP B3-VLSI | | | |
| Tue | Project Day | | | Project Day | | | Project Day | | | |

Pranayama Session : 10am to 10.30am

| Subject | Subject Teacher | Practical Teacher | Practical Location |
|-------------------|-----------------------------|-----------------------|----------------------|
| SATCOM | /Prof. N. P. Kulkarni | /Prof. N. P. Kulkarni | TH-1 |
| CCN | Dr. A. S. Vibhute | /Prof. M. Biswas | CAED-I |
| VLSI | /Prof. A. S. Singh | /Prof. A. S. Singh | CAED-II |
| CT | /Prof. L. A. Palange | /Prof. L. A. Palange | TH-1 |
| IP | Prof. V. S. Bhong | Prof. V. S. Bhong | CAED-III |
| Gate Tutor | /ASS, /NPK, /LAP, /NSP, VSB | | CAED-I & II, ADS-LAB |
| Seminar & Project | Prof. H. K. Bhaldar | | |


 TT Co ordinator
 /Prof. L. A. Palange


 CC
 /Prof. L. A. Palange


 H.O.D. (ENTC)
 Dr. A. S. Vibhute

SYLLABUS



SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
ELECTRONICS & TELECOMMUNICATION ENGINEERING
Syllabus for
B.E. (E & TC Engineering) w.e.f. Academic Year 2015-16



SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
Electronics & Telecommunication Engineering

Program 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 communication Engineering problems by applying basic principles of mathematics, science, and engineering and using modern tools and techniques.
- 2 To make students to test hardware components and software for offering solution to real life situations.
- 3 To inculcate students to be sensitive to ethical, societal and environmental issues while pursuing their professional duties.
- 4 To build strong fundamental knowledge amongst students to pursue higher education, and to enhance research and continue professional development in Electronics, communication and IT industries with attitude for lifelong learning.
- 5 To nurture students with technical and communication skills in order to be able to function on multidisciplinary fields and make them aware of contemporary issues at national and international levels.
- 6 To develop students for team working and managerial skills leading to entrepreneurship and leadership.

Program Outcomes (PO's)

1. An ability to apply knowledge of mathematics, science, and engineering,
2. An ability to design and conduct experiments, as well as to analyze and interpret data,
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability,
4. An ability to function on multidisciplinary teams,
5. An ability to identify, formulate, and solve engineering problems,
6. An understanding of professional and ethical responsibility,
7. An ability to communicate effectively,
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context,
9. A recognition of the need for, and an ability to engage in life-long learning,
10. A knowledge of contemporary issues, and
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.



SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

STRUCTURE OF B.E (Electronics & Telecommunication Engineering)

W.E.F 2015-16

B. E. (Electronics & Telecommunication Engineering) Semester- I

| Sr. No. | Subject | Teaching Scheme | | | | Examination Scheme | | | | |
|---------|--------------------------------|-----------------|-----|----|-------|--------------------|-----|-----|----|-------|
| | | L | Tut | P | Total | Th. | TW | POE | OE | Total |
| 1 | Computer Communication Network | 4 | -- | 2 | 6 | 100 | 25 | 50 | -- | 175 |
| 2 | VLSI Design | 4 | -- | 2 | 6 | 100 | 25 | 50 | -- | 175 |
| 3 | Satellite Communication | 3 | 1 | -- | 4 | 100 | 25 | -- | -- | 125 |
| 4 | Coding Theory | 3 | 1 | -- | 4 | 100 | 25 | -- | -- | 125 |
| 5 | Elective – I | 4 | -- | 2 | 6 | 100 | 25 | -- | -- | 125 |
| 6 | Seminar & Project | -- | -- | 4 | 4 | -- | 25 | -- | 50 | 75 |
| 7 | Vocational Training | -- | -- | -- | -- | -- | 25 | -- | -- | 25 |
| Total | | 18 | 2 | 10 | 30 | 500 | 175 | 100 | 50 | 825 |

Elective – I **Advanced Telecommunication Network**
Image Processing
Advance DSP.

B. E. (Electronics & Telecommunication Engineering) Semester- II

| Sr. No. | Subject | Teaching Scheme | | | | Examination Scheme | | | | |
|---------|-------------------------------------|-----------------|-----|----|-------|--------------------|-----|-----|-----|-------|
| | | L | Tut | P | Total | Th. | TW | POE | OE | Total |
| 1 | Broadband Communication | 3 | 1 | -- | 4 | 100 | 25 | -- | 25 | 150 |
| 2 | Multimedia Communication Techniques | 4 | -- | 2 | 6 | 100 | 25 | -- | 50 | 175 |
| 3 | Embedded Systems | 4 | -- | 2 | 6 | 100 | 25 | -- | 50 | 175 |
| 4 | Elective – II | 4 | -- | 2 | 6 | 100 | 25 | -- | -- | 125 |
| 5 | Project | -- | -- | 8 | 8 | -- | 100 | 100 | -- | 200 |
| Total | | 15 | 1 | 14 | 30 | 400 | 200 | 100 | 125 | 825 |

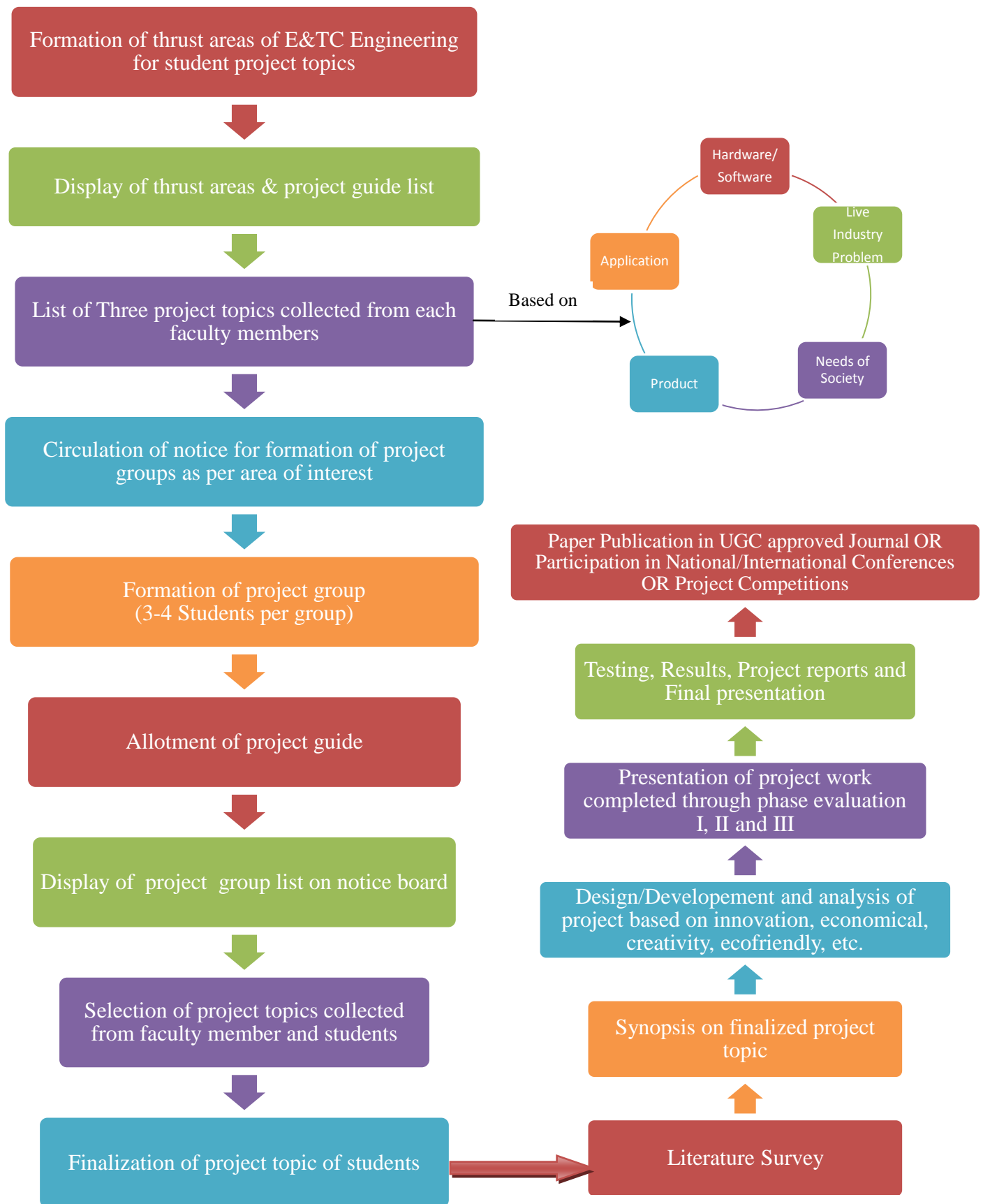
Elective – II **Wireless Sensor Network**
Pattern Recognition
DSP Processors & Application

Note:

- Minimum strength of the students for Elective be 15.
- Term work 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.

FINAL YEAR PROJECT PROCESS

- ❖ Processes related to BE (Final Year) project identification, allotment, continuous monitoring, evaluation including demonstration of working prototypes and enhancing the relevance of projects



SUMMARY OF FINAL YEAR E&TC PROJECT



SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR
DEPARTMENT OF ELECTRONIC & TELECOMMUNICATION ENGINEERING

SUMMARY OF FINAL YEAR PROJECT

| Sr. No. | Academic Year | Class | No. of Students | No. of Projects |
|---------|---------------|----------------|-----------------|-----------------|
| 1. | 2015-16 | BE ENTC | 139 | 50 |
| 2. | 2016-17 | | 142 | 48 |
| 3. | 2017-18 | | 96 | 33 |
| 4. | 2018-19 | | 107 | 38 |
| 5. | 2019-20 | | 119 | 39 |

HOD ENTC

HEAD

Dept. of Electronics & Telecom. Engg.
C. Q. E. Pandharpur

PROJECT GUIDE LIST (E&TC) WITH AREA OF SPECIALIZATION

SVERI's College of Engineering, Pandharpur

Department of E&TC Engineering

List of Faculty Members with Area of Specialization

2018-19

| Sr. No. | Research Area of Specialization | Group Faculty Members |
|---------|---------------------------------------|--|
| 1 | AI & Machine Learning, Deep Learning, | Dr. A. S. Vibhute Mrs. M. M. Pawar Dr. N. B. Bhadure |
| 2 | Image & Video Processing | Dr. A. S. Vibhute Dr. S. M. Mukane Dr. Mrs. M. M. Patil Mrs. M. M. Pawar Mrs. J. S. Shinde Mr. N. S. Admille Mr. S.P. Swami Mr. S. A. Inamdar Ms. Ankita Singh Mr. V. S. Bhong |
| 3 | Signal Processing | Dr. A. S. Vibhute Mrs. M. M. Pawar Mr. M. S. Mathpati |
| 4 | IoT & Embedded Systems | Dr. A. S. Vibhute Mr. M. S. Mathpati Mrs. J. S. Shinde Mr. A. A. Jadhav Mr. H. K. Bhaladar Mr. M. A. Deshmukh Mr. S. P. Swami Mr. A. M. Kasture Mr. D. P. Narsale Mr. S. A. Inamdar Mr. S.P. Swami Mrs. N. P. Kulkarni Ms. M. S. Biswas Ms. S. A. Atole |
| 5 | Communication Systems | Mr. M. S. Mathpati Mr. H. K. Bhaladar Mrs. N. P. Kulkarni Mr. S. A. Inamdar Mr. A. M. Kasture Ms. M. S. Biswas Mr. J. S. Hallur Ms. L. A. Palange |


HEAD

Dept. of Electronics & Telecom. Engg.
Pandharpur

| | | |
|---|--------------------------------|---|
| 6 | Antenna and Microwave Engg. | Mr. M. S. Mathpati Mr. H. K. Bhaladar Mr. A. A. Jadhav Mr. A. M. Kasture Ms. S. S. Kadam |
| 7 | Analog & Power Electronics | Mr. D. A. Kumbhar Mr. A. M. Kasture Mr. S. A. Inamdar Mr. H. K. Bhaladar Mr. S.P. Swami Mr. D. P. Narsale Ms. S. A. Atole |
| 8 | Digital Circuits & VLSI Design | Mrs. J. S. Shinde Ms. S. S. Kadam Ms. S. A. Atole |


HOD E&TC
HEAD

Dept. of Electronics & Telecom. Engg.
 Q. E. Pandharpur

SVERI's College of Engineering, Pandharpur.
Department of Electronics & Telecommunication

A.Y: 2018-19

Class: BE (ENTC) -A

List of Final Year Projects

| Group no. | Name of Student | Project | Name of the Guide | PO | PSO |
|-----------|-------------------------------|--|-------------------|----------------------------|-------|
| BE A1 | Upase Sidharth Ravindra | Design and Develop a cost effective E-rickshaw with Battery and Paddle | D A Kumbhar | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Panpude Ajay Balak | | | | |
| | Kandi Nikhil Mallikarjun | | | | |
| BE A3 | Waghmare Varsha Ashok | Study, Modification and Development in the induction heating system to develop a water purification system | D P Narsale | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Walujkar Shubhangi Sunil | | | | |
| | Patil Komal Kamalakar | | | | |
| BE A5 | Bhosale Swapnali Sudhakar | Smart Blind Stick | M A Deshmukh | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Ghongade Sneha Raja | | | | |
| | Shinde Seema Sadashiv | | | | |
| BE A7 | Awatade Vaishnavi Vitthal | GPS based vehicle tracking and monitoring system - A solution for transportation | M A Deshmukh | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Gaikwad Pratiksha Arun | | | | |
| | Javanjal Gayatri Sanjay | | | | |
| A9 | Waghmare Ashanta Laxman | Raspberry Pi based reader for blind people | A A Jadhav | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Pangare Mohini Madhukar | | | | |
| | Sawale Bhagyashri Chandrakant | | | | |
| | Shinde Urmila Deepak | | | | |
| BE A11 | More Mayuri Mahadeo | Design of micro-strip patch array antenna for wireless application | M S Mathpati | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Shinde Shilpa Ravindra | | | | |
| | Rangar Swagata Jaivant | | | | |
| BE A13 | Dingare Krishna | Voice controlled water controller system using Arduino | S A Inamdar | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Raj shivaji Palase | | | | |
| | Shahane Ajinkya Abhaykumar | | | | |
| | Prakash Chittapure | | | | |
| BE A15 | Jadhav Nilesh Dnyaneshwar | Electric trolley (Sponsored) | H K Bhaladar | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Patil Gaurav Dnyande | | | | |
| | Adhatrav Madhav Prakash | | | | |
| BE A2 | Anantpure Mokshada Ramling | Gas leakage detection and accident prevention system using IoT | J S Shinde | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Kambale Prajakta Narayan | | | | |
| | Kore Bhagawati Prakash | | | | |
| BE A4 | Atar Shahista Iqbal | voice controlled calculator | /S S Kadam | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Jadhav Diksha Vitthal | | | | |
| | Chavan Banubai Dattatray | | | | |
| | Kamble Bhagwati Krushna | | | | |
| BE A6 | Khune Rupali Satish | Heart Rate Monitoring System using Low Cost Optical Sensor | /N P Kulkarni | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Raut Privanka Bhimrao | | | | |
| | Shinde Sunita Prakash | | | | |
| | Yelale Priti Sitaram | | | | |
| BE A8 | Paparkar Sonali Pandurang | Design and implementation of Wheelchair controlled by using eye movement | A M Kasture | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Waghmare Diksha | | | | |
| | Bhosale Punam Shrirang | | | | |
| BE A10 | Yedave Vidya Dattatraya | Automatic seed sowing robot | J S Hallur | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Shinde Jyoti Bhairavnath | | | | |
| | Yelme Mitali Devidas | | | | |
| BE A12 | Biradar Abhishakta | Solar Powered Arduino based wireless grass cutter system | S A Inamdar | 1,2,3,4,5,7,8,9,10,11,12 | 1,2,3 |
| | Salunkhe Shital Dhanaji | | | | |
| | Rajput Amruta Narayansing | | | | |
| BE A14 | Masal Usha Arjun | Virtual eye for blind | V S Bhong | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
| | Tate gita baliram | | | | |
| | Shaikh Navid Mahamad | | | | |
| BE A16 | Rajput Karansingh babusing | Counting of RBC's and WBC's using Image Processing Technique | Dr. A S Vibhute | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
| | Rahul dattatray Pawar | | | | |

Project Coordinator

Dep't of Electronics & Telecom. Engg.
 Pandharpur

A
Synopsis
on
“ Low Cost Fruit Grading and Sorting System ”

Submitted

by

| Name of Student | Roll No |
|-------------------------|----------------|
| Ms. Prachi Avadhut Mane | 22 |
| Ms. Sayali Dilip Chavan | 06 |
| Ms. Sayali Shamrao Koli | 19 |

UNDER THE GUIDANCE OF
Dr. A.S. Vibhute

Department of Electronics and Telecommunication



COLLEGE OF ENGINEERING, PANDHARPUR

2018-19

Low Cost Fruit Grading and Sorting System

SYNOPSIS

1. Name of the College : SVERI's College of Engineering, Pandharpur.

2. Name of the Course : B.E. Electronics & Telecommunication Engineering

3. Name of the Student : 1. Ms. Sayali Shamrao Koli
2. Ms. Sayali Dilip Chavan
3. Ms. Prachi Avadhut Mane

4. Name of the Guide : Dr.A.S.Vibhute

5. Proposed Title of the Project: Low Cost Fruit Grading and Sorting System Using Robotic Arm

6. Relevance:

Introduction:

India is an agriculture country. Different types of fruits and vegetables are produced in India. In India all the pre-harvest and post-harvest process are done manually with help of labour. Manual process is very time consuming, less efficient so to get accurate result automation in agriculture industry is needed. The post-harvest process includes sorting and grading of fruits. Different quality factors are considered for sorting and grading of fruits. These factors are internal quality factors and external quality factors. The external quality factors are texture, shape, color, size and volume, and internal quality factors are test, sweetness, flavor, aroma, nutrients, carbohydrates present in that fruits.

Need of study:

The manual inspection poses problems in maintaining consistency in grading and uniformity in sorting. To speed up the process as well as maintain the consistency, uniformity and accuracy, a prototype Robotic arm based grading and sorting system will developed. The system Robotic arm collect image from the camera placed on the top of a conveyer belt carrying Fruit , then it process the images in order to collects several relevant features which are sensitive to the maturity level of the Fruit.

Low Cost Fruit Grading and Sorting System

Problem Statement:

Manually it is not possible for farmers to separate each fruit so to make it more accurate and reliable we are implementing this system. By using the image processing technique as well as robotic arm system, we can save the time and increase its market value as per the quality. Image processing is a technique which provides consistent, reasonably accurate, less time consuming and cost effective solution for farmers. Robotics gained more importance in the modern era since it requires less cost to operate than human labour to do the same task, also once programmed robot will perform better than an experienced human labour.

Objectives:

1. To design a system to check the quality of a specific fruit.
2. To check the parameters of fruit like color, size & dark spot on the fruit.
3. To design an automatic system this will divide the fruit in different quality and reduce the human efforts

7. Present Theories & Practices:

The development of portable fruit sorting and grading machine based on computer vision for small agro-industries. The mechanical system is designed from low cost material in the form of inclined and segmented plane to substitute the utilization of conveyor belt. In this case, motor servos are used as gate opener and director for the mechanical system. The autonomous system collects video image from a Logitech C920 webcam placed on the top of analysis area, then the image will be analyzed due to the process of computer vision. Firstly, the computer vision algorithm transforms the RGB (Red, Green, and Blue) color space to HSV (Hue, Saturation, and Value) color space of the image to facilitate the processes of color segmentation that are robust to the light intensity fluctuation. To speed up the process, every single frame is classified to 2 ROI (Region of Interest) based on fruit position in queuing and analysis area. Then the system will cluster fruit quality according to the level of maturity and its dimension. In the end, the autonomous system will actuate the servos to move the fruit to a specific bin

Low Cost Fruit Grading and Sorting System

according to their quality grade. Then the result of fruit analysis data will be displayed on PC's monitor. The system can do the task in 500 ms with precision result.

Literature Survey

| Sr. No. | Name of Paper and Year of Publication | Author | Methodology | Conclusion |
|---------|--|---|--|---|
| 1. | A Fruit Quality Management System Based on image processing. | Zalak R barat, Narendra Singh Limbad. | Image processing ,Pre processing. | Among different segmentation techniques ANN and SVM gives better accuracy. |
| 2. | Arm Based Fruit Grading and Management System Using Image processing. | Manoj B. Avhand, Satish M. Turkane. | Robotic arm,Image processing | Propose the system is faster than the graph based algorithm. |
| 3. | Fruit and vegetables quality evaluation using computer vision(2018 June). | Anuja Bhargava , Atul Bhansal | Computer Vision ,Fruit grading ,Image processing | Efficiency can be increased by taking images in different directions. |
| 4. | Machine Vision system for quality grading fruits. | J Balseo ,E Mioletto | Machine Vision | System showed good results but algorithm needs to be repetitively tested by experts. |
| 5. | A Fruit Quality Management System Based on Image Processing. | Ms. Jadhav, Rupali S. and Prof. Patil, S.S. | Machine Vision | Quality of fruit is analysed by processing on various methods. |
| 6. | "Technical Manual: Good Agricultural Practices in the Production of Tomato under Protected Conditions",2007. | Jaramillo J., Rodriguez V., Guzman M., Zapata M. and Rengifo T. | Computer Vision and Image processing. | The best grade of tomato is detected by analyzing various parameters basically on colour. |

Low Cost Fruit Grading and Sorting System

| | | | | |
|-----|---|--|--|--|
| 7. | An Integrated Model for Evaluating the Amount of Data Required for Reliable Recognition,2006 | M. Lindenbaum | Pattern analysis and Machine learning. | Evaluation and recognition of image is done by image processing. |
| 8. | Low cost object sorting robotic arm using raspberry pi. | Viren Pereira, Vandyk Amsdem Fernandes and Junieta Sequeira. | Raspberry pi and Robotic arm . | Object that is sorted is placed to its respective position. |
| 9. | Rapid Colour Grading for Fruit Quality Evaluation Using Direct Colour Mapping. | Dah-Jye Lee, James K. Archibald, Guangming Xiong. | Image Processing. | Best category of fruit is analysed on the basis of colour of fruit using direct colour mapping method. |
| 10. | Computer Vision Based Fruit Grading System for Quality Evaluation of Tomato in Agriculture industry, Year 2016. | Megha P. Arakeri, Lakshmana. | Machine Learning and Image processing. | The grade of tomato is evaluated using computer vision to improve the yield of tomato. |

Low Cost Fruit Grading and Sorting System

8. Outline of Proposed Work:

Block Diagram:

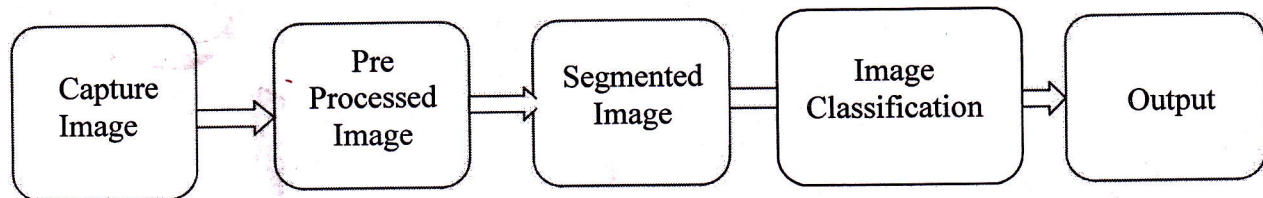


Fig: Block diagram

Methodology:

Working:

1. Image Capture:

First step of the image processing is explained below which is nothing but image capturing. Image capturing is done with the help of camera or scanner and we have used here camera of 5mega pixels for this project. Technical details of the image capturing and data transfer are explained below. This block involves capturing an image. To improving the lighting conditions in the room.

2. Pre-processing image:

Now after the capturing of the image, pre-processing is the next step of the digital image processing. Pre-processing is used for the conversion of the color captured in the image for the system point of view from Binary to Gray code for further data processing.

3. Image Segmentation:

Image segmentation is used for the segmentation of the color to identify the color difference in the fruits. So we are segmenting the data for the understanding of the system about the classification of the colors of fruits, as the segmentation should stop when the objects of interest in an application has been isolated.

Low Cost Fruit Grading and Sorting System

4. Image Classification:

Classification for the image is the next step and used for the classification of the color of the fruit depends on the data given by image segmentation part, on the basis of which further fruit color is classified. Quality of fruit detection method using classified is one of the most often used methods of information extraction. Image classification is the labeling of a pixel or a Group of pixel...

Low Cost Fruit Grading and Sorting System

9. Expected result:

With the proposed system, using the low cost Robotic Arm it will give the appropriate results as sorting and grading the fruit.

10. Available facility:

1. Image capturing is done with the help of camera or scanner and we have used here camera of 5mega pixels for this project.
2. we are segmenting the data for the understanding of the system about the classification of the colors of fruits.
3. Image classification is the labeling of a pixel or a group of pixels based on its Binary to Grey value

11. Work plan:

| Sr. No. | Month | Details of Work Carried Out |
|---------|----------------|--|
| 1. | July 2019 | Finalization of the project title |
| 2. | August 2019 | Submission of project synopsis & seminars on project topic |
| 3. | September 2019 | component selection, Circuit diagram design and Simulation of project circuit diagram |
| 4. | October 2019 | 1 st phase of project work & publish one review paper on the project in international journal/SCI peer reviewed journal |
| 5. | November 2019 | 2 nd phase of project work i.e. completion of project work |
| 6. | December 2019 | Report writing and one paper will publish in UGC approved peer reviewed international journal |

Low Cost Fruit Grading and Sorting System

12. Expected Date of Completion Of Work: 31st December 2019

13. Approximate expenditure:

| Sr. No. | Name of Components | Cost of Components |
|------------|--------------------|--------------------|
| 1. | Raspberry Pi | 1000/- |
| 2. | PIR sensor | 200/- |
| 3. | Rotating Disc | 100/- |
| 4. | Sensor | 80/- |
| 5. | Raspberry Pi 5MP | 500/- |
| 7. | Driver circuit | 300/- |
| 8. | Stepper motor | 900/- |
| Total cost | | 3080/- |

References:

- [1]. A Fruit Quality Management System Based on image processing, Volume 8, Issue(Nov.-Dec.2013)
- [2]. Journal paper on "Arm Based Fruit Grading and Management System Using Image processing" by Manoj B. Avhand, Satish M. Turkane, P.D.V.V. P's Collage of Engineering, Ahmednagar, Maharashtra, India, P.R.E.C. Loni, Ahmednagar, Maharashtra, In-dia in January 2013.
- [3]. Harshavardhan G. Naganur, Sanjeev S. Sannakki, Vijay SRaiurohit, Arunkumar R, "Fruits Sorting and Grading using Fuzzy logic," International Journal of Advanced Research in Computer Engineering & Technology(IJARCET) Volume 1, Issue 6, August 2012, pp117-122. [3] John B. Njoroge.
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Date: 9 / 9 / 2019

Place: Pandharpur

Sayali Koli :- Sayali
Sayali Chavan :- Sayali
Prachi mane :- Prachi

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BE Student

(Prof. Dr. A.S. Guide)
Vibhute

Project Accepted and Approved By:

1. Mr. T. S. Halbur :- Halbur

2. Mr. A. A. Tadhar :- Tadhar

3. Mr. D. P. Narsale :- Narsale

4.

5.

FINAL YEAR PROJECT EVALUATION WITH RUBRICS

SVERI'S COLLEGE OF ENGINEERING PANDHARPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
PROJECT ET425 SEM-II 2018-19 BE-II DIV: A

| Sr. No. | Roll No. | Name of Student | Problem Identification | Problem Formulation | Hardware Design | Algorithm Design | Multidisciplinary Applications | Knowledge Acquisition of Other field | ICT Tools used | Project Diary | Project Report | Oral Presentation | Societal Applications | Economy - cost Effectiveness | Contribution | Execution | Total |
|---------|----------|-------------------------------|------------------------|---------------------|-----------------|------------------|--------------------------------|--------------------------------------|----------------|---------------|----------------|-------------------|-----------------------|------------------------------|--------------|-----------|----------|
| | | | 10 | 5 | 10 | 10 | 5 | 5 | 5 | 5 | 5 | 5 | 10 | 10 | 10 | 5 | 100 |
| | | | ET 425.1 | ET 425.1 | ET 425.2 | ET 425.2 | ET 425.3 | ET 425.3 | ET 425.4 | ET 425.4 | ET 425.4 | ET 425.5 | ET 425.5 | ET 425.5 | ET 425.6 | ET 425.6 | |
| 1 | 19 | Dhanwate Dipali Bandu | 10 | 5 | 10 | 10 | 5 | 5 | 5 | 5 | 5 | 5 | 9 | 9 | 10 | 5 | 98 |
| 2 | 32 | Jadhav Rohini Ramchandra | 10 | 5 | 10 | 10 | 5 | 4 | 5 | 5 | 5 | 5 | 9 | 9 | 8 | 5 | 95 |
| 3 | 45 | Patil Nishugandha Amar | 10 | 5 | 10 | 10 | 5 | 3 | 5 | 5 | 5 | 5 | 9 | 9 | 8 | 5 | 94 |
| 4 | 13 | Bhosale Payal Dnyaneshwar | 10 | 5 | 10 | 10 | 5 | 3 | 5 | 5 | 5 | 5 | 9 | 9 | 8 | 5 | 94 |
| 5 | 34 | Joshi Savali Nandkumar | 9 | 5 | 10 | 10 | 5 | 3 | 5 | 5 | 5 | 4 | 9 | 9 | 8 | 5 | 92 |
| 6 | 21 | Dixit Priyanka Sunil | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 90 |
| 7 | 47 | Patki Vaishnavi Kiran | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 90 |
| 8 | 18 | Deshpande Kranti Damaji | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 9 | 5 | 91 |
| 9 | 22 | Gadekar Savali Sudhakar | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 5 | 9 | 8 | 9 | 5 | 92 |
| 10 | 43 | Patil Gavatri Vishwasrao | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 5 | 9 | 8 | 9 | 5 | 92 |
| 11 | 15 | Bubane Vaibhavi Kantilal | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 5 | 9 | 8 | 9 | 5 | 92 |
| 12 | 42 | Pandhare Nilam Nagnath | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 90 |
| 13 | 46 | Patil Pooja Sanjeetrao | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 9 | 5 | 91 |
| 14 | 20 | Dhotre Priyanka Mahesh | 10 | 5 | 10 | 10 | 5 | 5 | 5 | 5 | 5 | 5 | 9 | 9 | 10 | 5 | 98 |
| 15 | 49 | Pawar Shubhangi Abasaheb | 10 | 5 | 10 | 10 | 5 | 4 | 5 | 5 | 5 | 5 | 9 | 9 | 9 | 5 | 96 |
| 16 | 50 | Potdar Aparna Virbhadra | 10 | 5 | 10 | 10 | 5 | 4 | 5 | 5 | 5 | 5 | 9 | 9 | 9 | 5 | 96 |
| 17 | | Jamdade Kalpesh | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 6 | 5 | 83 |
| 18 | 6 | Kundurkar Sandesh Dilip | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 7 | 5 | 84 |
| 19 | 10 | Surwase Shyam Balaji | 9 | 5 | 9 | 8 | 3 | 3 | 4 | 5 | 5 | 4 | 8 | 8 | 6 | 5 | 82 |
| 20 | 1 | Adhvalkar Mayureshwar Hanmant | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 9 | 5 | 86 |
| 21 | 5 | Kumthe Kutuboddin Husenbasha | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 85 |
| 22 | 9 | Patil Mahesh Jivan | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 7 | 5 | 84 |
| 23 | 8 | Naiknaware Tushar Ambadas | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 85 |
| 24 | 48 | Pawar Archana Ajinath | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 5 | 9 | 8 | 9 | 5 | 92 |
| 25 | 29 | Kolekar Babita Bira | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 5 | 9 | 8 | 9 | 5 | 92 |
| 26 | 33 | Jindam Sapana Hanamantu | 10 | 5 | 10 | 10 | 5 | 3 | 5 | 5 | 5 | 5 | 9 | 9 | 8 | 5 | 94 |
| 27 | 41 | Nakate Priyanka Ashok | 10 | 5 | 10 | 10 | 5 | 4 | 5 | 5 | 5 | 5 | 9 | 9 | 10 | 5 | 97 |
| 28 | 23 | Gaikwad Kartiki Prakash | 10 | 5 | 10 | 10 | 5 | 5 | 4 | 5 | 5 | 5 | 9 | 9 | 9 | 5 | 96 |
| 29 | 25 | Gend Gayatri Navnath | 10 | 5 | 10 | 10 | 5 | 5 | 5 | 5 | 5 | 5 | 9 | 9 | 10 | 5 | 98 |
| 30 | 57 | Thorat Kiran Vijaykumar | 10 | 5 | 10 | 10 | 5 | 4 | 5 | 5 | 5 | 5 | 9 | 9 | 9 | 5 | 96 |
| 31 | 17 | Deshmukh Snehal Uttam | 10 | 5 | 10 | 9 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 88 |
| 32 | 30 | Ingale Komal Dhananjay | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 90 |
| 33 | 27 | Ghodake Kajal Namdeo | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 9 | 5 | 86 |
| 34 | 37 | More Priyanka Arjun | 9 | 5 | 9 | 8 | 3 | 3 | 4 | 5 | 5 | 4 | 8 | 8 | 6 | 5 | 82 |
| 35 | 14 | Bhosale Snehal Deepak | 10 | 5 | 9 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 89 |
| 36 | 35 | Kokil Soniya Sanjay | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 85 |
| 37 | 24 | Gaikwad Poonam Dadasaheb | 10 | 5 | 9 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 89 |
| 38 | 56 | Sutar Nikita Navanath | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 5 | 9 | 8 | 8 | 5 | 91 |
| 39 | 11 | Adlinge Poonam | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 85 |
| 40 | 54 | Shingare Shubhangi Baliram | 10 | 5 | 10 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 90 |
| 41 | 55 | Suryavanshi Payal Sunil | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 8 | 7 | 5 | 81 |
| 42 | 38 | Nagane Radhika Hanmant | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 8 | 6 | 5 | 80 |
| 43 | 51 | Sawant Kajol Vitthal | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 7 | 8 | 5 | 81 |
| 44 | 28 | Ghodake Supriya Satish | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 8 | 8 | 5 | 82 |
| 45 | 44 | Patil Neha Manikrao | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 8 | 6 | 5 | 80 |
| 46 | 26 | Ghadage Priyanka Yuvraj | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 8 | 6 | 5 | 80 |
| 47 | 39 | Naiknaware Priyanka Navanath | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 7 | 8 | 8 | 5 | 84 |
| 48 | 40 | Naikwadi Heena Faruk | 10 | 5 | 10 | 9 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 7 | 5 | 87 |
| 49 | 31 | Ingale Sayali Sunil | 10 | 5 | 9 | 9 | 3 | 4 | 5 | 5 | 5 | 4 | 9 | 8 | 8 | 5 | 89 |
| 50 | 4 | Kamble Ananda Nagnath | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 85 |
| 51 | 2 | Dhaware Ganesh Bhimarao | 9 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 9 | 5 | 86 |
| 52 | 3 | Kadam Shrikant Uttamrao | 10 | 5 | 9 | 8 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 9 | 5 | 87 |
| 53 | 7 | Khadbade Akash | 10 | 5 | 10 | 9 | 3 | 3 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 5 | 88 |
| 54 | 36 | Lokhande Trupti Pandurang | 9 | 5 | 8 | 7 | 3 | 3 | 5 | 5 | 5 | 3 | 8 | 7 | 8 | 5 | 81 |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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[Signature]

HEAD
 Dept. of Electronics & Telecom. Engrg
 S. N. C. Pandharpur

SVERI'S COLLEGE OF ENGINEERING PANDHARPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
SEMINAR AND PROJECT ET416 SEM-I 2018-19 BE-I DIV: A

| Sr No | Roll No. | Name of Student | Literature Review | Problem Identification | Synopsis Quality | Oral Communication | ICT Tools used | Innovations | Societal Applications | Total |
|-------|----------|-------------------------------|-------------------|------------------------|------------------|--------------------|----------------|-------------|-----------------------|-------|
| | | | 5 | 2 | 3 | 5 | 5 | 3 | 2 | |
| | | | ET 416.1 | ET 416.2 | ET 416.2 | ET 416.3 | ET 416.4 | ET 416.5 | ET 416.5 | |
| 1 | 44 | Upase Sidharth Ravindra | 5 | 2 | 3 | 5 | 4 | 2 | 2 | 23 |
| 2 | 43 | Panpude Ajay Balak | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 3 | 40 | Kandi Nikhil Mallikarjun | 5 | 2 | 3 | 4 | 5 | 2 | 2 | 23 |
| 4 | 1 | Anantpure Mokshada Ramling | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 5 | 10 | Kambale Prajakta Narayan | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 6 | 13 | Kore Bhagawati Prakash | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 7 | 25 | Waghmare Varsha Ashok | 5 | 2 | 3 | 4 | 5 | 2 | 2 | 23 |
| 8 | 26 | Walujkar Shubhangi Sunil | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 9 | 17 | Patil Komal Kamalakar | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 10 | 2 | Atar Shahista Iqbal | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 11 | 8 | Jadhav Diksha Vitthal | 5 | 2 | 3 | 4 | 5 | 2 | 2 | 23 |
| 12 | 5 | Chavan Banubai Dattatray | 5 | 2 | 3 | 4 | 5 | 2 | 2 | 23 |
| 13 | 4 | Bhosale Swapnali Sudhakar | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 14 | 7 | Ghongade Sneha Raja | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 15 | 20 | Shinde Seema Sadashiv | 4 | 2 | 3 | 3 | 4 | 2 | 2 | 20 |
| 16 | 11 | Kamble Bhagwati Krushna | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 17 | 12 | Khune Rupali Satish | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 18 | 29 | Raut Privanka Bhimrao | 4 | 2 | 3 | 3 | 4 | 2 | 2 | 20 |
| 19 | 21 | Shinde Sunita Prakash | 4 | 2 | 3 | 3 | 4 | 2 | 2 | 20 |
| 20 | 3 | Awatade Vaishnavi Vitthal | 5 | 2 | 3 | 4 | 5 | 2 | 2 | 23 |
| 21 | 6 | Gaikwad Pratiksha Arun | 5 | 2 | 3 | 4 | 5 | 2 | 2 | 23 |
| 22 | 9 | Javanjal Gayatri Sanjay | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 23 | 28 | Yelale Priti Sitaram | 5 | 2 | 3 | 5 | 4 | 2 | 2 | 23 |
| 24 | 16 | Paparkar Sonali Pandurang | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 25 | 24 | Waghmare Diksha | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 26 | 23 | Waghmare Ashanta Laxman | 4 | 2 | 3 | 5 | 4 | 2 | 2 | 22 |
| 27 | 15 | Pangare Mohini Madhukar | 4 | 2 | 3 | 3 | 4 | 2 | 2 | 20 |
| 28 | 19 | Sawale Bhagyashri Chandrakant | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 29 | 22 | Shinde Urmila Deepak | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 30 | 31 | Bhosale Punam Shirang | 4 | 2 | 3 | 3 | 4 | 2 | 2 | 20 |
| 31 | 27 | Yedave Vidya Dattatraya | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 32 | 52 | Shinde Jyoti Bhairavnath | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 20 |
| 33 | 33 | More Mayuri Mahadeo | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 20 |
| 34 | 32 | Shinde Shilpa Ravindra | 5 | 2 | 3 | 4 | 3 | 2 | 2 | 21 |
| 35 | 35 | Rangar Swagata Jaivant | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 36 | 36 | Yelme Mitali Devidas | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 20 |
| 37 | 34 | Biradar Abhishakta | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 38 | 30 | Salunkhe Shital Dhanaji | 5 | 2 | 3 | 4 | 3 | 2 | 2 | 21 |
| 39 | 39 | Dingare Krishna | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 40 | 47 | Palase Raj shivaji | 5 | 2 | 3 | 3 | 3 | 2 | 2 | 20 |
| 41 | 50 | Shahane Ajinkya Abhaykumar | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 20 |
| 42 | 48 | Chittapure Prakash | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 20 |
| 43 | 18 | Rajput Amruta Narayansing | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 44 | 14 | Masal Usha Arjun | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 45 | 38 | Tate gita baliram | 4 | 2 | 3 | 4 | 3 | 1 | 2 | 19 |
| 46 | 42 | Jadhav Niles Dnyaneshwar | 3 | 2 | 3 | 4 | 3 | 2 | 2 | 19 |
| 47 | 51 | Patil Gaurav Dnyandev | 4 | 2 | 3 | 4 | 4 | 2 | 2 | 21 |
| 48 | 45 | Adhatrav Madhav Prakash | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 20 |
| 49 | 41 | Shaikh Navid Mahamad | 5 | 2 | 3 | 5 | 3 | 2 | 2 | 22 |
| 50 | 49 | Rajput Karansingh babusing | 5 | 2 | 3 | 4 | 4 | 2 | 2 | 22 |
| 51 | 46 | Pawar Rahul dattatray | 4 | 2 | 3 | 4 | 3 | 1 | 2 | 19 |
| 52 | | Chaugule Jayashri Dattatray | 5 | 2 | 3 | 5 | 4 | 2 | 2 | 23 |
| 53 | | Shinde Prajakta Tanaji | 5 | 2 | 3 | 5 | 4 | 2 | 3 | 24 |
| 54 | | Sanlunke Punam Balasaheb | 5 | 2 | 3 | 5 | 4 | 2 | 3 | 24 |

HOD ENT

HEAD

Dept of Electronics & Telecom. Eng
P. Q. E. Pandharpur

DESIGN OF SMALL SCALE ELECTRONIC TROLLEY WITH 500KG LOAD CARRYING CAPACITY

¹A. GAURAV D. PATIL, ²B. MADHAV P. ADHATRAO, ³C. NILESH D. JADHAV

Abstract - Present paper manages structure and manufacture of modern trolley which can be utilized to exchange gear or things starting with one spot then onto the next spot. A trolley these days are imperative for exchanging diverse things from spot to put in our day by day life or even in working life according to the necessity. We can see trolleys in shopping center, air terminal and ventures for taking care of the products. In the airplane terminal, travelers use trolleys to exchange their baggage till the check in counters. Once in a while they face higher weight issues at the check in, making them pay the abundance stuff charge or discard couple of critical things thereof as it were. This makes an awkward and ungainly circumstance at the check in. Furthermore, if the traveler is a maturity or senior native it's extremely a very frenzy circumstance. Also, a study dependent on a readied poll did at Muscat airplane terminal uncovered the requirement for considerable enhancements in the present trolleys regarding solace in baggage taking care of, stacking and emptying of the gear and the requirement for weight of the gear at the season of stacking itself. Moreover, numerous sustenance and kitchen enterprises use trolleys to get and exchange the merchandise things to the store subsequent to gauging them. The Arduino based electronically worked steerable trolley created here intends to address few of these key issues.

I. INTRODUCTION

The In the areas of transportation various carrying vehicles are available, but most of them have a problem of manual pushing and pulling, difficult steering. So these types of problems led to the development of the Electronics trolley capable of reducing manual effort during driving. Electrically powered trolley also reduces time to reach the destination and increases profit. The problems of carrying heavy loads in a wheel cart or similar vehicles provide a vision to develop a trolley which can solve these problems. The new era of world demands an interactive and ergonomically suitable product like those product which are affordable but should reduce human efforts , best suited to environment , easy to carry , and do not require maintenance.

II. METHODOLOGY

a) Problem Definition

To fulfil the needs of the transportation some carrying vehicles are required. As per today's demands of the customer those carrying vehicles should be able to carry enough amounts of payload and in much less time. So our work aims on designing such vehicle which can carry goods in less time and require less effort from worker.

b) Construction/Components

Motor:

Specifications:

1. Type – BLDC Geared motor.
2. Operating Voltage – 24Volt DC
3. Output Capacity – 250W
4. RPM (after reduction) – 300
5. Full load current – 13.4 A

6. No load current – 2.2A
7. Torque constant – 8 N.m(400 kg-cm)
8. Sprocket – 9 Tooth only fits bicycle chains



Fig.1 Motor

Bearing

A bearing is used to hold the camshaft. This also provides the relative motion between rotating shaft and at either end the cam is attached. It allows higher permeability for the free rotations with minimum frictional losses.

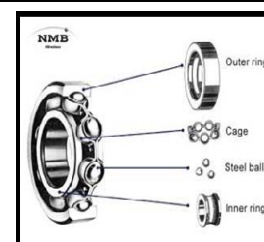


Fig.2 Bearing

Arduino Uno

Arduino Uno is a microcontroller board is an open-source electronics platform mainly based on AVR

microcontroller Atmega328. Atmega328 microcontroller is placed on the board that comes with a number of features like timers, counters, interrupts, PWM, CPU, I/O pins and based on a 16MHz clock that helps in producing more frequency and number of instructions per cycle. The current version of Arduino Uno comes with USB interface, 6 analog input pins, 14 I/O digital ports that are used to connect with external electronic circuits. Out of 14 I/O ports, 6 pins can be used for PWM output.

Features of the Arduino UNO:

1. Microcontroller: ATmega328
2. Operating Voltage: 5V
3. Input Voltage (recommended): 7-12V
4. Input Voltage (limits): 6-20V
5. Digital I/O Pins: 14 (of which 6 provide PWM output)
6. Analog Input Pins: 6
7. DC Current per I/O Pin: 40 mA
8. DC Current for 3.3V Pin: 50 mA
9. Flash Memory: 32 KB of which 0.5 KB used by bootloader
10. SRAM: 2 KB (ATmega328)
11. EEPROM: 1 KB (ATmega328)
12. Clock Speed: 16 MHz

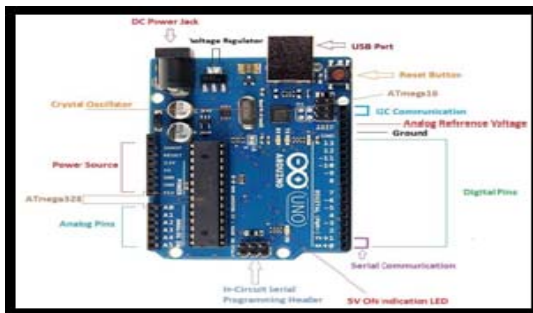


Fig.3 Arduino Uno

Relay Module

A relay is an electrically operated switch of mains voltage. It means that it can be turned on or off, letting the current go through or not. Controlling a relay with the Arduino is as simple as controlling an output.

- **COM:** common pin.
- **NO (Normally Open):** there is no contact between the common pin and the normally open pin. So, when you trigger the relay, it connects to the COM pin and supply is provided to a load.
- **NC (Normally Closed):** there is contact between the common pin and the normally closed pin. There is always connection between the COM and NC pins, even when the relay is turned off. When you trigger the relay, the circuit is opened and there is no supply provided to a load.



Fig.4 Relay Module

Chain

Roller chains are the type of chain drive most commonly used for transmission of mechanical power between two sprockets. It consists of a series of short cylindrical rollers held together by side links. It is driven by a toothed wheel called a sprocket.

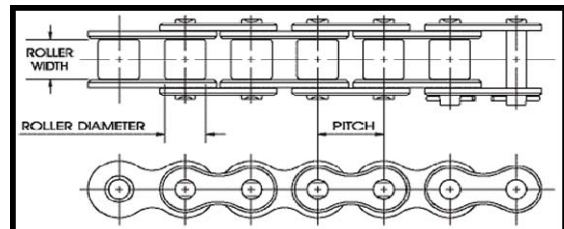


Fig.5 Chain

12V Battery

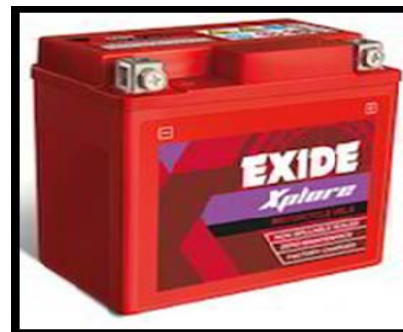


Fig.6 Battery

Battery is a device which is used to store the charge. Here, battery is used to supply a charge to the motor to obtain expected output from the motor. The battery is used as per the motor requirements to achieve optimized output. We are going to use a battery that is dry cell of 12 V capacity of voltage.

Shaft

A shaft is a rotating machine element which is used to transmit power from one place to another. This shaft forms an integral part of the machine itself. The crank shaft is an example of machine shaft. Shaft (mechanical engineering), a rotating machine element used to transmit power. Line shaft is a power transmission system. Drive shaft is a shaft for transferring torque. Axle is a shaft around which one or more wheels rotate.

LCD Display

An LCD is an electronic display module which uses liquid crystal to produce a visible image. The 16×2 LCD display is a very basic module commonly used in DIYs and circuits. The 16×2 translates to a display 16 characters per line in 2 such lines. In this LCD each character is displayed in a 5×7 pixel matrix.

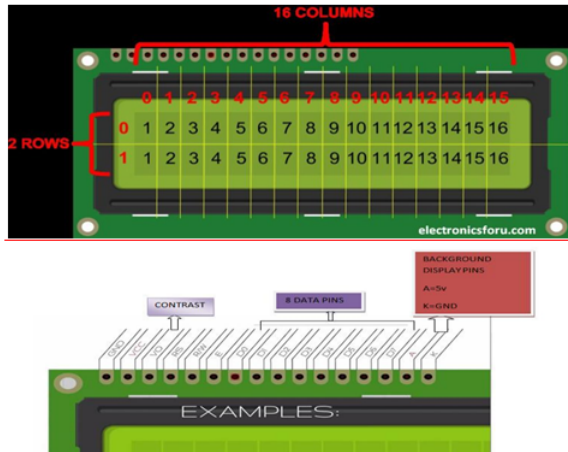


Fig.7 16X2 LCD pin out diagram

WORKING

When the main power switch (DPST) is ON, it will connect the batteries to the motor through DPDT switch and the voltage regulator. The DPDT switch is used to inverse the present connections of the batteries to the motor. Simply if this switch is in forward connection after pressing it at either side it will give the reverse connections to motor. When the motor rotates, it will transfer its rotational to the sprocket with the help of a chain drive. As the sprocket is connected to the shaft, the shaft also rotates with the sprocket in the same direction. The front wheels are connected to the shaft which is rotated in the direction of motion of rotor the motor. Thus when the motor rotates, it will rotate the front wheels also. This assembly gives the linear motion to the trolley, which is our required goal. The steering is used to change the direction of the linear motion of the trolley, which is connected to rear wheel. The rear wheel is not connected to the motor directly or indirectly. But it is connected to the steering by a shaft. We also introduced a battery level indicator which continuously shows the voltage level of our batteries.

COMPARISON BETWEEN DIFFERENT TROLLEYS

Table 1: Comparison of different trolleys

| | Wooden carriage | Metal trolley | Cycle rickshaw trolley | eLE-CTONIC TROLLEY |
|-----------|-----------------|---------------|------------------------|--------------------|
| 1.Payload | <300kg | <200kg | <400kg | <500KG |
| 2.Speed | <3km/h | Very low | <10km/h | <25km/h |

| | | | | |
|-------------------------|----------------------|--------------|--------------------|--------------------|
| 3.Steering | Very Difficult | Easy | Easy | Easy |
| 4. Material of platform | Wood | Metal | Wood or metal | Wooden |
| 5.Wheels | Rubber Tyre wheels | Metal wheels | Rubber Tyre wheels | Rubber Tyre wheels |
| 6.Driving | Manual push and pull | Manual pull | Paddle driven | motor driven.0 |
| 7.Controlling | Difficult | Easy | Medium | easy |

BATTERY CALCULATIONS:

1. Power of battery

(Voltage * Ah rating) = power in Watts

Here, series connection of two batteries gives 24 volts and 24 Ah rating.

Therefore,

$$(24V * 24Ah) = 576 \text{ Watts}$$

2. Power of motor = 250 Watts

3. Number of hours run to a consume the total power of battery

$$\text{Hours} = \frac{\text{power of battery}(V \cdot Ah)}{\text{power of motor}(Watt)}$$

$$= \frac{576}{250} \\ = 2.304 \text{ hr}$$

4. Laboratory range of battery

$$= (\text{Number of hours' motor run} * 25\text{kmph}) \\ = (2.304 * 25) \\ = 57.6 \text{ km}$$

CONCLUSIONS

Our project is successfully implemented for the design and fabrication of Electronics-Trolley using the electrical power is will be very useful in small scale industries. There are many machines based on electronics-trolley but it has some demerits like large in size, costly, need skilled people to operate and it needs more man power. But our machine will overcome these demerits by compact in size, less cost, no need for skilled people and there is no need of more man power. The main aim for this trolley is to reduce timing for transporting and neglect the power required to push and pull the trolley, this aim is achieved in our Electronics-trolley.

ACKNOWLEDGMENT

We express our sincere regards to our guide Prof. Mr. Bhaladar H. K. of SVERI's College of Engineering, Pandharpur for his continuous guidance and motivation. We are also thankful to our Head of Department Prof. Mr. Vibhute A. S. for his co-

operation and valuable support. We are also grateful to our faculty & friends and other all that showed their efforts towards us and also helps us in every trouble.

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- [8] Gaurav Dnyandev Patil "Student of BE Electronics and Telecommunication Engineering at Punyashlok Ahilyadevi Holkar University, Solapur, Maharashtra, India".
- [9] Madhav Prakash Adhatrao "Student of BE Electronics and Telecommunication Engineering at Punyashlok Ahilyadevi Holkar University, Solapur, Maharashtra, India".
- [10] Nilesh Dnyaneshwar Jadhav "Student of BE Electronics and Telecommunication Engineering at Punyashlok Ahilyadevi Holkar University, Solapur, Maharashtra, India".

★ ★ ★

INTERNATIONAL SOCIETY FOR ENGINEERING AND TECHNICAL EDUCATION



In Association with

SOUTH ASIAN RESEARCH CENTER

International Conference on
Industrial and Production Engineering

ICIPE-BENGALURU

Certificate

This is to certify that *Gaurav D. Patil* has presented a paper entitled "*Design of Small Scale Electronic Trolley with 500kg Load Carrying Capacity*" at the International Conference on Industrial and Production Engineering (ICIPE) held at Bengaluru, India on 14th April, 2019.

SA-CIPE-PUNE-14049-1456

Paper ID



Chairman

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Industrial and Production Engineering

ICIPE-BENGALURU

Certificate

This is to certify that *Madhav P. Adhatrao* has presented a paper entitled "*Design of Small Scale Electronic Trolley with 500kg Load Carrying Capacity*" at the International Conference on Industrial and Production Engineering (ICIPE) held at Bengaluru, India on 14th April, 2019.

SA-CIPE-PUNE-14049-1456

Paper ID



Chairman

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Industrial and Production Engineering

ICIPE-BENGALURU

Certificate

This is to certify that *Nilesh D. Jadhav* has presented a paper entitled "*Design of Small Scale Electronic Trolley with 500kg Load Carrying Capacity*" at the International Conference on Industrial and Production Engineering (ICIPE) held at Bengaluru, India on 14th April, 2019.

SA-CIPE-PUNE-14049-1456

Paper ID



Chairman

INTERNATIONAL SOCIETY FOR ENGINEERING
AND TECHNICAL EDUCATION

Experiential Learning through Industrial Visit

- **Identify Industrial problems**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**

SUMMARY SHEET (2015-16)

ENTC Department

Industrial Visits Summary Sheet 2015-16

| Sr. No | Date of Industrial Visit | Class | Name of Companies | For Subject | No. Of Students | No. of Faculty |
|--------|--------------------------|-------|---|---|-----------------|----------------|
| 1 | 01/09/2015 | SE | Punca Electronics Pune | Electronic workshop lab | 46 | 04 |
| 2 | 02/09/2015 | SE | Technocrats Forum Kothrud, Pune | | 46 | 04 |
| 3 | 21/09/2015 | TE | Hindusthan Electronics Engg. Company, Mumbai. | Software Engineering Process Management | 107 | 06 |
| 4 | 22/09/2015 | TE | Ananta Analysis Pvt. Ltd., Mumbai | | 107 | 06 |
| 5 | 28/09/2015 | BE | Technocrats Forum Kothrud, Pune | Satellite communication | 40 | 04 |
| 6 | 29/09/2015 | BE | BARC, Mumbai | | 40 | 04 |
| 7 | 03/02/2016 | SE | Akashwani Kendra, Ratnagiri | Analog Communication | 85 | 05 |
| 8 | 04/02/2016 | SE | Elite Technology, sangali | | 85 | 05 |
| 9 | 01/03/2016 | TE | Perfect Electronics, Wai | Mobile Communication | 104 | 06 |
| 10 | 02/03/2016 | TE | RP Electronics, Mahad | | 104 | 06 |
| 11 | 15/02/2016 | BE | YES Elevator, Pune | Broadband Communication | 106 | 06 |
| 12 | 16/02/2016 | BE | DDK, Pune | | 106 | 06 |

HEAU


Dep. of Electronics & Telecom. Engg.
" O U Pandharbur

SUMMARY SHEET (2016-17)

Industrial Visit Summery sheet

ENTC Department

| Sr. No | Date of industrial Visit | Class | Year | Semester | Name of Company | No of Students | No of Faculty |
|--------|--------------------------|---------|---------|----------|---|----------------|---------------|
| 1 | 24/08/2016 | SE A | 2016-17 | SEM-I | Thuse Electronics Bhosari Pune | 34 | 03 |
| | 25/08/2016 | | 2016-17 | SEM-I | Cotmac electronics Bhosari Pune | | |
| 2 | 30/08/2016 | TE A&B | 2016-17 | SEM-I | SPJ Embedded Technologies Pvt Ltd Pune | 86 | 06 |
| | 31/08/2016 | | 2016-17 | SEM-I | Gaytri Engineers Pune | | |
| 3 | 04/03/2017 | SE A &B | 2016-17 | SEM-II | IGTR Aurangabad | 87 | 06 |
| | 05/03/2017 | | 2016-17 | SEM-II | Videcon Industries Aurangabad | | |
| 4 | 14/03/2017 | TEA | 2016-17 | SEM-II | E infochip Ahmadabad | 35 | 05 |
| | 06/03/2017 | TE B | 2016-17 | SEM-II | Falcen Engineers Ahamdanagar Indus Tower Pune | 39 | 03 |


IV Coordinator

Mr. D. P. Narsale


HOD ENTC

Dr. A. S. Vibhute

HEAD
Dept. of Electronics & Telecom. Engg.
C. O. T. Pandharpur

SUMMARY SHEET (2017-18)

Industrial Visit Summary sheet

ENTC Department

| Sr. No | Date of industrial Visit | Class | Year | Semester | Name of Company | No of Students | No of Faculty |
|--------|--------------------------|----------|---------|----------|--------------------------------------|----------------|---------------|
| 1 | 22/08/2017 | SE A | 2017-18 | SEM-I | Gayatri Electronics Pune | 51 | 03 |
| | 23/08/2017 | | 2017-18 | SEM-I | Perfect Electronics Satara | | |
| 2 | 26/08/2017 | TE A & B | 2017-18 | SEM-I | Sandip Electronics & Automation Pune | 88 | 05 |
| | 27/08/2017 | | 2017-18 | SEM-I | Neelu Electrical Pune | | |
| 3 | 02/09/2017 | BE B | 2017-18 | SEM-I | All India Radio Station Kolhapur | 40 | 04 |
| | | | 2017-18 | SEM-I | Nebulus Automation Pvt Ltd Kolhapur | | |
| 4 | 18/08/2017 | BE A | 2017-18 | SEM-I | All india Radio Station Pune | 45 | 03 |
| | 19/08/2017 | | 2017-18 | SEM-I | Apron Tech satara | | |
| 5 | 23/01/2018 | SE A & B | 2017-18 | SEM-II | ELITE Electronics Sangli | 117 | 06 |
| | 24/01/2018 | | 2017-18 | SEM-II | SNR Electronics Sangli | | |
| 6 | 27/02/2018 | TE A&B | 2017-18 | SEM-II | Reliance Jio | 96 | 05 |
| | 28/02/2018 | | 2017-18 | SEM-II | Dolphin Labs | | |

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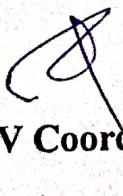
SUMMARY SHEET (2018-19)

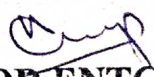
Industrial Visit Summery sheet

ENTC Department

Academic Year 2018-19

| Sr. No | Date of industrial Visit | Class | Year | Semester | Name of Company | No of Students | No of Faculty |
|--|--------------------------|----------|---------|----------|------------------------------------|----------------|---------------|
| 1 | 20/08/2018 | SE A | 2018-19 | SEM-I | Dolphin Labs, Pune | 55 | 04 |
| | 21/08/2018 | | | | Gaytri Engineers Pune | | |
| 2 | 05/09/2018 | TE A&B | 2018-19 | SEM-I | ISRO, Bangalore | 98 | 06 |
| | 06/09/2018 | | | | Preva Systems, Bangalore | | |
| | 07/09/2018 | | | | Lipra Pvt Ltd, Mysore, Bangalore | | |
| 3 | 21/01/2019 | SE A & B | 2018-19 | SEM II | APTRON Tech Pvt. Ltd Satara | 99 | 06 |
| | 22/01/2019 | | | | Perfect Electronics, Wai Satara | | |
| 4 | 22/02/2019 | TE A & B | 2018-19 | SEM II | Sai Info Solutions Nashik | 101 | 06 |
| | 23/02/2019 | TE A & B | | | Technosys Control Solutions | | |
| 5 | 22/02/2019 | BE A & B | 2018-19 | SEM II | Ideaz Multimedia, Kolhapur | 109 | 06 |
| | 23/02/2019 | BE A & B | | | Delight Bulb Industries, Ratnagiri | | |
| Total No of Students went for industrial visit in 2018-19 | | | | | | 462 | |
| Total industrial visit incentives given to the students in 2018-19 | | | | | | Rs. 2,77,200/- | |


IV Coordinator
Mr. D. P. Narsale


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Dr. A. S. Vibhute

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 Dept. of Electronics & Telecom. Engg.
 Q. T. Pandharpur

SUMMARY SHEET (2019-20)

Industrial Visit Summary sheet

ENTC Department

Academic Year 2019-20

| Sr. No | Date of industrial Visit | Class | Year | Semester | Name of Company | No of Students | No of Faculty |
|--------|--------------------------|---------|---------|----------|-----------------------------------|----------------|---------------|
| 1 | 31/08/2019 | SE A | 2019-20 | SEM-I | Perfect Electronics Satara | 65 | 04 |
| | 01/09/2019 | | | | Gaytri Engineers Pune | | |
| 2 | 03/10/2019 | TE A | 2019-20 | SEM-I | Sycon Agricontrols Sangali | 48 | 03 |
| | 04/10/2019 | | | | Ideaz Multimedia Kolhapur | | |
| 3 | 25/09/2019 | TE B | 2019-20 | SEM-I | Manu Electronics Aurangabad | 45 | 04 |
| | 26/09/2019 | | | | IGTR Aurangabad | | |
| | 27/09/2019 | | | | Airport Controller Aurangabad | | |
| 4 | 01/10/2019 | BE A& B | 2019-20 | SEM I | Delight Bulb Automation Ratnagiri | 110 | 06 |
| | 02/10/2019 | | | | Ideaz Multimedia Kolhapur | | |
| 5 | 24/01/2020 | SE B | 2019-20 | SEM II | Perfect Electronics, Wai | 61 | 4 |
| | 25/01/2020 | | | | AIRS Rtanagiri | | |
| 6 | 27/01/2020 | SE A | | SEM II | Apron Tech Stara | 57 | 3 |
| | 28/01/2020 | | | | ISEES Technology Mahad | | |

IV Coordinator

Mr. D. P. Narsale


HOD ENTC

Dr. A. S. Vibhute

HEAD
Dept. of Electronics & Telecommunication Engg.
A. S. Vibhute

PERMISSION FROM INDUSTRY

2/21/2019

Fwd: Regarding Permission for Industrial Visit - jadhavaa@coe.sveri.ac.in - College of Engineering, SVERI Pandharpur Mail

≡ Gmail

Search mail

Compose

Inbox 323

Starred

Snoozed

Sent

Drafts 118

More



Akshay

+

No recent chats
Start a new one

----- Forwarded message -----

From: Rajeev Deole <rajeev_delight@yahoo.co.in>

Date: Thu, 21 Feb 2019, 11:57

Subject: Re: Regarding Permission for Industrial Visit

To: Dhanaji Narsale <dpnarsale@coe.sveri.ac.in>

Dear Sir,

We hereby grant permission for Industrial Visit on 23/02/2019.

Thanks,
Rajeev Deole
Delight Bulb Industry

On Tuesday, 19 February, 2019, 3:35:13 pm IST, Dhanaji Narsale <dpnarsale@coe.sveri.ac.in> wrote:

Dear sir/madam,

Hope you find this mail in good mood!!!!

With reference to above subject I undersigned prof. Dr. A. S. Vibhute Head of ENTC department would like to have per

Details are tabulated below table

| Date | Class | Approximate strength of students | No. of faculty of accompanying |
|------------|-------------|----------------------------------|--------------------------------|
| 23/02/2019 | B.E. (ENTC) | 100 | 06 |

2/19/2019

Fwd: Regarding Permission for Industrial visit - varshaawaghmare@coop.sveri.ac.in - SVERIs, College of Engineering Pandharpur Mail



Search mail

Compose

Inbox 422

Starred

Snoozed

Sent

Drafts 4

Unwanted

More

Varsha +

----- Forwarded message -----

From: **Dhanaji Narsale** <dnarsale@coe.sveri.ac.in>

Date: Tue, Feb 19, 2019 at 3:34 PM

Subject: Regarding Permission for Industrial visit

To: <[satyjeetkop@gmail.com](mailto:satyajeetkop@gmail.com)>

Dear sir/madam,

Hope you find this mail in good mood!!!!

With reference to above subject I undersigned prof. Dr. A. S. Vibhute Head of ENTC department would like to have per

Details are tabulated below table

| Date | Class | Approximate strength of students | No. of faculty of accompanying |
|------------|-------------|----------------------------------|--------------------------------|
| 22/02/2019 | B.E. (ENTC) | 100 | 06 |

Please give us consent for the same as early as possible.

Thanking you!!!

No recent chats
Start a new one

Reply

Forward

Fwd: Regarding Permission for Industrial visit - varshaawaghmare@coep.sveri.ac.in - SVERIs, College of Engineering Pandharpur Mail



Inbox 429

Snoozed

Drafts 4

More

$$\frac{1}{2}$$

Respected sir ,
As per your email dated 19/2/2019 we are pleased to
inform you that, we permit you to visit our company, & we charge Rs. 50/- per student on dates . The details of the visit
Class: BE
Number of students: 100
Number of staff members: 6
Date of visit: 22/2/2019
Time of visit : 10.00 AM
Confirm with us, other particulars of your visit on
telephone or in e-mail.
Thanking you,

Ideaz Multimedia
3rd lane, Main Road Rajarampuri,
Kolhapur
Cell : 9960079177, 9260060482
Kolhapur - Maharashtra (India)

Reply

Forward

Application

19/02/19

To,
Dean Students,
SVERI's COE,
Pandharpur

Subject: Permission for industrial visit.

Respected sir,
for academic purpose, the students of BE (ENTC) (A & B) wish to visit following Companies on 22nd Feb and 23rd Feb 2019.

- 1) Delight Auto Industries Pvt. Ltd, Ratnagiri
- 2) Com Idear, Kolhapur

We got permission from these companies and required permission letters attached with it. Including both divisions around 100 students are ready for visit.

Above mentioned industries/organisations are related with the following academic course.

- 1) MCT - Multimedia Communication Techniques

Some of the students are not ready because of their personal issues as

- i) Health issue
- ii) family function
- iii) Parents are not ready.
- iv) financial issue.

All these students will report to college and they will do their work. The schedule of I.V, permission letter, list of students are attached.

So kindly allow the BE (ENTC) students for I.V.

Thanking You,

Regards
C.C of BE-A
C.C of BE-B

| | BE-A | BE-B |
|------------------|------|------|
| Total : | 52 | 60 |
| Ready for visit: | 45 | 47 |
| YD : | 1 | 5 |

Forwarded
to IV coordinator
for consideration

MA
19/12/19
(BE-A CC)
(Mr. A. A. Jadhav)

M. Binwal
19/12/19
(BE-B CC)
(Ms. Mohua Binwal)
forwarded to H.O.D.
for consideration.

gk
21/02/19
(Industrial Visit Coordinator)
Mr. B. P. Narsale

Prof. P. A. S. Vibhute
HOD ENTC
H.E. Scheme
permitted as per

Dep. of Electronics & Telecom. Engg.
A.E. Pandharpur

Dr. A. A. Utpat
(Dean Student)

Date: - 21/04/19

To,
The Principal,
SVERI's C.O.E. Pandharpur.

Subject: - Regarding permission for 2 days industrial visit at Kolhapur and Ratnagiri on 22/02/2019 and 23/02/2019.

Respected sir,

We the student of B.E.(ENTC) would like to have permission for 2 days industrial visit at Kolhapur and Ratnagiri on 22/02/2019 and 23/02/2019. We have enclosed herewith tentative budget, schedule and route for two days with permission received from industries.

Please permit us to visit for industries as above mentioned dates we will assure you that, we will follow all instructions given by our faculty during industrial visit and we will be in utmost discipline throughout the industrial visit.

Thanking you!

Yours faithfully
Students of B.E.(ENTC)-A&B

| Remark of Class Co-ordinator:- | Remark of I.V. Co-ordinator:- | Remark of HOD | Remark of dean Students:- |
|-----------------------------------|----------------------------------|-------------------|------------------------------|
| forwarded | forwarded to | Recommended & | |
| to Principal | Hon'ble H.O.D | forwarded to | |
| for | for consideration | Dean student | |
| consideration | | for consideration | |
| & approved | 21/04/19 | | |
| CA | | | |

14/04/19

As a part of expenditure of industrial visit we have collected Rs. 1600/- per head from B.E. (ENTC) students. Details of the same are the given below-

| Sr. No. | Head of Expenditure | Amount (in Rs.) |
|---------|---------------------|-----------------|
| 1. | Travelling | 1000/- |
| 2. | Lodging | 400/- |
| 3. | Miscellaneous | 200/- |
| | Total | 1600/- |

Route decided for 2 days industrial visit at at Kolhapur and Ratnagiri on 22/02/2019 and 23/02/2019 is as follows:-

| | |
|------------------------|-------------------------|
| Pandharpur to Kolhapur | Ratnagiri to Pandharpur |
| Pandharpur | Ratnagiri |
| Sangola | Karad |
| Miraj | Dighanchi |
| Kolhapur | Pandharpur |

Schedule for industrial visit at Kolhapur and Ratnagiri on 22/02/2019 and 23/02/2019 is as follows:-

| Date | Time | Particulars |
|------------|----------|---|
| 22/02/2019 | 03:00 AM | Departure from Pandharpur |
| 22/02/2019 | 08:00 AM | Arrival to Kolhapur |
| 22/02/2019 | 10:00 AM | Breakfast |
| 22/02/2019 | 11:00 AM | Visit to Com Ideaz , Kolhapur |
| 22/02/2019 | 03:00 PM | Lunch |
| 22/02/2019 | 05:00 PM | Departure from Kolhapur |
| 22/02/2019 | 09:00 PM | Arrival to Ratnagiri |
| 22/02/2019 | 10:00 PM | Dinner , at lodge , Ganpatipule |
| 23/02/2019 | 08:00 AM | Breakfast |
| 23/02/2019 | 11:00 AM | Visit to Delight Auto Industries Ratnagiri. |
| 23/02/2019 | 03:00 PM | Lunch |
| 23/02/2019 | 04:30 PM | Toward pandharpur |
| 23/02/2019 | 11:30 PM | COE Pandhrpur |

Due to unavailability of lodging for 95 students & 6 faculty members at Ratnagiri, the nearby place (40 minutes) Ganpatipule is selected for staying arrangement.

BE ENTC
CC

BE ENTC-B
CC

22/2/19



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE

COLLEGE OF ENGINEERING, PANDHARPUR.

ISO 9001-2000 Certified Institute & Accredited by Institutes of Engineers, India,
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)
E-mail :- coe@sveri.ac.in

Date: 21 / 12 / 2019

NOTICE

Following faculty member are here by informed to accompany B.E (ENTC) students are 2 days industrial visit at Ratnagiri and Kolhapur on 22/02/2019 and 23/02/2019

| Sr. No. | Name | Sign |
|---------|----------------------|------|
| 01 | Prof. D.A. Kumbhar | |
| 02 | Prof. Archay. Jadhav | |
| 03 | Prof. M.S. Bishwas . | |
| 04 | Prof. Ankita Singh | |
| 05 | Prof. | |
| 06 | | |

(Mr. D.P.Narsale)
I.V. Co-ordinator
ENTC Department

(Dr.A.S Vibhute)
HOD
ENTC Department

HEAD

Dep. of Electronics & Telecom. Engg.
C. Q. E. Pandharpur



A-div

Industrial visit
Department of Electronics and Telecommunication Engineering
 Class & Division: BE-A

| ROLL NO | NAME OF STUDENT | Sign | ROLL NO | NAME OF STUDENT | Sign |
|---------|--------------------------------|--------------------|---------|----------------------------|-------------------|
| 1. | /Anantpure Mokshada Ramling | <u>Mokshada</u> | 27 | /Yedave Vidya Dattatraya | <u>Yedave Vid</u> |
| 2. | /Atar Shahista Iqbal | <u>Atar S.I</u> | 28 | /Yelale Priti Sitaram | <u>Priti</u> |
| 3. | /Awatade Vaishnavi Vitthal | <u>Awatade</u> | 29 | /Raut Priyanka Bhimrao | NA |
| 4. | /Bhosale Swapnali Sudhakar | <u>Swapnali</u> | 30 | /Salunkhe Shital Dhanaji | <u>Shital</u> |
| 5. | /Chavan Banubai Dattatray | <u>B.D</u> | 31 | /Bhosale Punam Shrirang | <u>Punam</u> |
| 6. | /Gaikwad Pratiksha Arun | <u>Pratiksha</u> | 32 | /Shinde Shilpa Ravindra | <u>Shinde</u> |
| 7. | /Ghongade Sneha Raja | NA | 33 | /More Mayuri Mahadeo | <u>More</u> |
| 8. | /Jadhav Diksha Vitthal | <u>Jadhav</u> | 34 | /Biradar Abhishakta | <u>Biradar</u> |
| 9. | /Javanjal Gayatri Sanjay | <u>Javanjal</u> | 35 | /Rangar Swagata Jaivant | NA |
| 10 | /Kambale Prajakta Narayan | <u>Prajakta</u> | 36 | /Yelme Mitali Devidas | <u>Yelme</u> |
| 11 | /Kamble Bhagwati Krushna | <u>Kamble</u> | 37 | /Snehal dilip Kawate | NA |
| 12 | /Khune Rupali Satish | <u>Khune</u> | 38 | /Tate gita baliram | <u>Tate</u> |
| 13 | /Kore Bhagawati Prakash | <u>Bhagawati</u> | 39 | Dingare Krishna | <u>Dingare</u> |
| 14 | /Masal Usha Arjun | <u>Usha</u> | 40 | Kandi Nikhil Mallikarjun | <u>Kandi</u> |
| 15 | /Pangare Mohini Madhukar | <u>M.M.Pangare</u> | 41 | Shaikh Navid Mahamad | NA |
| 16 | /Paparkar Sonali Pandurang | <u>Sonali</u> | 42 | Jadhav Nilesh Dnyaneshwar | NA |
| 17 | /Patil Komal Kamalakar | <u>Komal</u> | 43 | Panpure Ajay Balak | <u>Ajay</u> |
| 18 | /Rajput Amruta Narayansing | <u>Amruta</u> | 44 | Upase Sidharth Ravindra | <u>Sidharth</u> |
| 19 | /Sawale Bhagyashri Chandrakant | <u>Bhagyashri</u> | 45 | Adhatrav Madhav Prakash | <u>Adhatrav</u> |
| 20 | /Shinde Seema Sadashiv | <u>Shinde</u> | 46 | Rahul dattatray Pawar | <u>Rahul</u> |
| 21 | /Shinde Sunita Prakash | NA | 47 | Raj shivaji Palase | NA |
| 22 | /Shinde Urmila Deepak | <u>Shinde</u> | 48 | Prakash Chittapure | NA |
| 23 | /Waghmare Ashanta Laxman | <u>Ashanta</u> | 49 | Rajput Karansingh babusing | <u>Karansingh</u> |
| 24 | /Waghmare Diksha | NA | 50 | Shahane Ajinkya | <u>Ajinkya</u> |
| 25 | /Waghmare Varsha Ashok | <u>Waghmare</u> | 51 | Patil Gaurav Dnyande | NA |
| 26 | /Walujkar Shubhangi Sunil | <u>Walujkar</u> | 52 | Shinde Jyoti | NA |

Note-

| | | | |
|----------|------|----------|-------|
| Batch | A1 | A2 | A3 |
| Roll No. | 1-19 | 20-38,52 | 39-51 |

32-F

Mr. Akshay A Jadhav
Class Coordinator

NA! - Not Attended

Dr. A. S. Vibhute
HOD ENT



Date: 21/02/2019

Department of Electronics and Telecommunication Engineering
Class & Division: BE-B Academic Year: 2018-19 (Sem-II)

B-div

INDUSTRIAL VISIT

| Roll No. | Name Of Student | Sign | Roll No. | Name Of Student | Sign |
|----------|----------------------------------|------|----------|--------------------------------|------|
| 1. | Adhvalkar Mayureshwar Hanmant | | 31 | Ingale Sayali Sunil | NA |
| 2. | Dhaware Ganesh Bhimrao | | 32 | Jadhav Rohini Ramchandra | NA |
| 3. | Kadam Shrikant Uttamrao | NA | 33 | Jindam Sapana Hanamantu | |
| 4. | Kamble Ananda Nagnath | | 34 | Joshi Sayali Nandkumar | |
| 5. | Kumthe Kutuboddin Husenbasha | | 35 | Kokil Soniya Sanjay | |
| 6. | Kundurkar Sandesh Dilip | NA | 36 | Lokhande Trupti Pandurang | NA |
| 7. | Khadbade Akash | | 37 | More Priyanka Arjun | |
| 8. | Naiknavare Tushar Ambadas | | 38 | Nagane Radhika Hanmant | |
| 9. | Patil Mahesh Jivan | NA | 39 | Naiknaware Priyanka Navanath | |
| 10. | Surwase Shyam Balaji | NA | 40 | Naikwadi Heena Faruk | |
| 11. | Adlinge poonam Haridas | | 41 | Nakate Priyanka Ashok | |
| 12. | Arekar Uma Tukaram | | 42 | Pandhare Nilam Nagnath | |
| 13. | Bhosale Payal Dnyaneshwar | NA | 43 | Patil Gayatri Vishwasrao | |
| 14. | Bhosale Snehal Deepak | | 44 | Patil Neha Manikrao | |
| 15. | Bubane Vaibhavi Kantilal | | 45 | Patil Nishigandha Amar | NA |
| 16. | Chavan Vishakha Ashok | | 46 | Patil Pooja Sanjeetrao | |
| 17. | Deshmukh Snehal Uttam | | 47 | Patki Vaishnavi Kiran | NA |
| 18. | Deshpande Kranti Damaji | | 48 | Pawar Archana Ajinath | |
| 19. | Dhanwate Dipali Bandu | NA | 49 | Pawar Shubhangi Abasaheb | |
| 20. | Dhotre Priyanka Mahesh | | 50 | Potdar Aparna Virbhadra | |
| 21. | Dixit Priyanka Sunil | | 51 | Sawant Kajol Vitthal | |
| 22. | Gadekar Sayali Sudhakar | | 52 | Salunke Punam Balasaheb | NA |
| 23. | Gaikwad Kartiki Prakash | | 53 | Shinde Prajakta Tanaji | NA |
| 24. | Gaikwad Poonam Dadasaheb | | 54 | Shingare Shubhangi Baliram | |
| 25. | Gend Gayatri Navnath | | 55 | Suryavanshi Payal Sunil | |
| 26. | Ghadage Priyanka Yuvraj | | 56 | Sutar Nikita Navanath | |
| 27. | Ghodake Kajal Namdeo | | 57 | Thorat Kiran Vijaykumar | |
| 28. | Ghodake Supriya Satish | | 58 | Chougule Jayshree | NA |
| 29. | Kolekar Babita Bira | NA | 59 | Akshaykumar Dargude | |
| 30. | Ingale Komal Dhananjay | NA | 60 | Jamdade Kalpesh Tatyasaheb | NA |

NA → Not Attended

Sample of Student Undertaking



COLLEGE OF ENGINEERING, PANDHARPUR.
ISO 9001-2000 Certified Institute & Accredited by Institutes of Engineers, India,
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)
E-mail :- coe_pan@rediffmail.com

Date: 22/9/2019

Undertaking

To,
Principal,
SVERI's COE, Pandharpur.

Sub: Undertaking about industrial visit.

Respected sir,

I am undersigned student Suryawanshi. C.N of Class TE Division: B having Roll No. 53 giving the undertaking about the industrial visit.

Sir, in industrial visit I will not do any misbehavior. During industrial visit I will follow our rules and regulation very strictly. While visiting in company I will not wondering here and there and also I will not make noise in company. I will behave such like our behavior will not become their problematic.

During industrial visit whatever days are required that will be covered by co-ordination of our staff members have already given assured about that. Our syllabus will cover within desired time. I will give assured that our result will be 100% Think on it.

Thanking You!!

Yours Faithfully

Name:- Suryawanshi. C.N

Parent contact:- 9146461668.



COLLEGE OF ENGINEERING, PANDHARPUR.
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(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)
E-mail :- coe_pan@rediffmail.com

Date: 22/9/2019

Undertaking

To,
Principal,
SVERI's COE, Pandharpur.

Sub: Undertaking about industrial visit.

Respected sir,

I am undersigned student More Vaishnavi Jaysing of Class TE Division: B having Roll No. 25 giving the undertaking about the industrial visit.
Sir, in industrial visit I will not do any misbehavior. During industrial visit I will follow our rules and regulation very strictly. While visiting in company I will not wondering here and there and also I will not make noise in company. I will behave such like our behavior will not become their problematic.

During industrial visit whatever days are required that will be covered by co-ordination of our staff members have already given assured about that. Our syllabus will cover within desired time. I will give assured that our result will be 100% Think on it.

Thanking You!!

QJMOEF
Yours Faithfully

Name:- More Vaishnavi Jaysing
Parent contact:- 9420491171

Sample of Thanks Letter



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR.
ISO 9001-2000 Certified Institute & Accredited by Institutes of Engineers, India,
Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)
E-mail :- dpnarsale@coe.sveri.ac.in

COEPR/2018-19/ENTC/

Date:-21/02/2019

19

To,
The Manager,
Delight Auto Industries,
Ratnagiri.

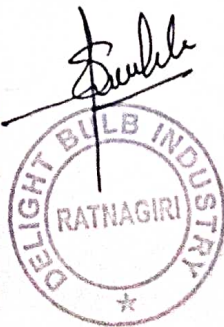
Subject: - Thanks letter

Respected sir,

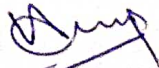
We extend our sincere gratitude for allowing our Final year students to visit your organization. This visit not only helps our students in understanding practical concept but also boost their confidence.
Your valuable guidance will always keep the students inspiring and motivating.
I request the same kind of cooperation in future also.

Thanking you.

for Delight Bulb Industry



Yours truly


(Dr. A.S. Vibhute)
HOD ENTC Dept.
SVERI's COE, Pandharpur

Received



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S
COLLEGE OF ENGINEERING, PANDHARPUR.
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Gopalpur -Ranjani Road, Gopalpur, P.B. No. 54, Tal - Pandharpur- 413 304,
Dist. Solapur (Maharashtra) Ph.: (02186) 225083
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)
E-mail :- dpnarsale@coe.sveri.ac.in

COEPR/2018-19/ENTC/

Date:-21/02/2019

To,
The Manager,
Ideaz Multimedia Pvt.Ltd.
Kolhapur


Subject: - Thanks letter

Respected sir,

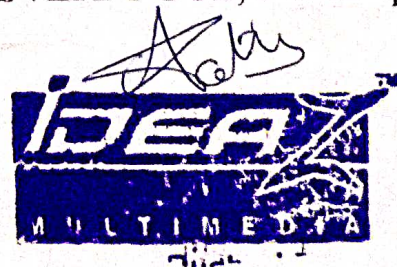
We extend our sincere gratitude for allowing our Final year students to visit your organization. This visit not only helps our students in understanding practical concept but also boost their confidence.
Your valuable guidance will always keep the students inspiring and motivating.
I request the same kind of cooperation in future also.

Thanking you.

Yours truly


(Dr. A.S. Vibhute)
HOD ENTC Dept.
SVERI's COE, Pandharpur

Received





Summary of Industrial Visit

| Sr. No. | Event : Industrial Visit | |
|---------|---|---|
| 1. | BE ENTC | |
| 2. | Industry Visit dates: 22/02/2019 & 23/02/2019 | |
| 3. | Industry details:- | |
| | <p>1) Ideaz Multimedia Address: Silver Arch, 3rd Lane , Near Archies Gallery, Rajarampuri, Kolhapur - 416003, Maharashtra, India Contact Person: Mr. Satyajeet Sawant (9960079177) Email Id: satyaheetkop@gmail.com</p> | <p>2) Delight Bulb Industries Address: W 10 A, MIDC, Maruti Mandir, Ratnagiri, Maharashtra 415639 Contact Person: Mr. Rajeev (9822124534) Email id: rajeev_delight@yahoo.co.in</p> |
| 4) | <p>Visit Report:</p> <p>a) <i>On 22nd February 2019: Ideaz Multimedia</i> Established in the year 1999, Ideaz Multimedia in Rajarampuri, Kolhapur is a top player industry in the Kolhapur. The belief that customer satisfaction is as important as their products and services have helped this establishment garner a vast base of customers, which continues to grow by the day. It is a creation multimedia industry which is the best in the 3d animation learning. Here we expertise in techniques and get a chance to get our ideas portrayed. It is known to provide top service in the following categories: Animation Services, Web Designing.</p> <p>b) <i>On 23rd February 2019: Delight Bulb Industries</i> The company Delight Bulb Industries was established in the year 1984. We are manufacturer of these products lamps, bulbs and lights. Equipped with the best of technology, these products have gained a high demand in the national system. These lighting is the most effective method of outdoor lighting. For lighting of sport arenas like stadiums, swimming pools. For parks, gardens, sea shores, monuments and historical sites.</p> | |
| 5) | Outcome : | Mapping of POs |
| | 1. Students acquired the knowledge about different Animation Services, Web Designing | 1,2,3,4,5,6 |
| | 2. Students acquired the knowledge about manufacturing processes involved for manufacturing of electronic products such as lamps, bulbs and lights for lighting of sport arenas like stadiums, swimming pools | 1,2,3,4,5,6 |

Name of Faculty

- 1) Prof. Akshay A. Jadhav
- 2) Prof. D.A.Kumbhar
- 3) Prof. Mohua Biswas
- 4) Prof. A.S.Singh



Ideaz Multimedia



Delight Bulb Industry

Experiential Learning through Internships/ Vocational Training

- **Solve Complex Engineering Problems**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**
- **Team work**

SYLLABUS



SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
ELECTRONICS & TELECOMMUNICATION ENGINEERING
Syllabus for
B.E. (E & TC Engineering) w.e.f. Academic Year 2015-16



SOLAPUR UNIVERSITY, SOLAPUR
FACULTY OF ENGINEERING & TECHNOLOGY
Electronics & Telecommunication Engineering

Program 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 communication Engineering problems by applying basic principles of mathematics, science, and engineering and using modern tools and techniques.
- 2 To make students to test hardware components and software for offering solution to real life situations.
- 3 To inculcate students to be sensitive to ethical, societal and environmental issues while pursuing their professional duties.
- 4 To build strong fundamental knowledge amongst students to pursue higher education, and to enhance research and continue professional development in Electronics, communication and IT industries with attitude for lifelong learning.
- 5 To nurture students with technical and communication skills in order to be able to function on multidisciplinary fields and make them aware of contemporary issues at national and international levels.
- 6 To develop students for team working and managerial skills leading to entrepreneurship and leadership.

Program Outcomes (PO's)

1. An ability to apply knowledge of mathematics, science, and engineering,
2. An ability to design and conduct experiments, as well as to analyze and interpret data,
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability,
4. An ability to function on multidisciplinary teams,
5. An ability to identify, formulate, and solve engineering problems,
6. An understanding of professional and ethical responsibility,
7. An ability to communicate effectively,
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context,
9. A recognition of the need for, and an ability to engage in life-long learning,
10. A knowledge of contemporary issues, and
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.



SOLAPUR UNIVERSITY, SOLAPUR

FACULTY OF ENGINEERING & TECHNOLOGY

STRUCTURE OF B.E (Electronics & Telecommunication Engineering)

W.E.F 2015-16

B. E. (Electronics & Telecommunication Engineering) Semester- I

| Sr. No. | Subject | Teaching Scheme | | | | Examination Scheme | | | | |
|---------|--------------------------------|-----------------|-----|----|-------|--------------------|-----|-----|----|-------|
| | | L | Tut | P | Total | Th. | TW | POE | OE | Total |
| 1 | Computer Communication Network | 4 | -- | 2 | 6 | 100 | 25 | 50 | -- | 175 |
| 2 | VLSI Design | 4 | -- | 2 | 6 | 100 | 25 | 50 | -- | 175 |
| 3 | Satellite Communication | 3 | 1 | -- | 4 | 100 | 25 | -- | -- | 125 |
| 4 | Coding Theory | 3 | 1 | -- | 4 | 100 | 25 | -- | -- | 125 |
| 5 | Elective – I | 4 | -- | 2 | 6 | 100 | 25 | -- | -- | 125 |
| 6 | Seminar & Project | -- | -- | 4 | 4 | -- | 25 | -- | 50 | 75 |
| 7 | Vocational Training | -- | -- | -- | -- | -- | 25 | -- | -- | 25 |
| Total | | 18 | 2 | 10 | 30 | 500 | 175 | 100 | 50 | 825 |

Elective – I **Advanced Telecommunication Network**
Image Processing
Advance DSP.

B. E. (Electronics & Telecommunication Engineering) Semester- II

| Sr. No. | Subject | Teaching Scheme | | | | Examination Scheme | | | | |
|---------|-------------------------------------|-----------------|-----|----|-------|--------------------|-----|-----|-----|-------|
| | | L | Tut | P | Total | Th. | TW | POE | OE | Total |
| 1 | Broadband Communication | 3 | 1 | -- | 4 | 100 | 25 | -- | 25 | 150 |
| 2 | Multimedia Communication Techniques | 4 | -- | 2 | 6 | 100 | 25 | -- | 50 | 175 |
| 3 | Embedded Systems | 4 | -- | 2 | 6 | 100 | 25 | -- | 50 | 175 |
| 4 | Elective – II | 4 | -- | 2 | 6 | 100 | 25 | -- | -- | 125 |
| 5 | Project | -- | -- | 8 | 8 | -- | 100 | 100 | -- | 200 |
| Total | | 15 | 1 | 14 | 30 | 400 | 200 | 100 | 125 | 825 |

Elective – II **Wireless Sensor Network**
Pattern Recognition
DSP Processors & Application

Note:

- Minimum strength of the students for Elective be 15.
- Term work 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.

SUMMARY OF VOCATIONAL TRAINING



SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR

DEPARTMENT OF ELECTRONIC & TELECOMUNICATION ENGINEERING

SUMMARY OF VOCATIONAL TRAINING

| Sr. No. | Academic Year | Class | No. of Industries | No. of Students |
|---------|---------------|-----------|-------------------|-----------------|
| 1. | 2017-18 | BE | 10 | 59 |
| 2. | 2018-19 | | 14 | 43 |
| 3. | 2019-20 | | 10 | 59 |

HOD ENTC

HEAD

Dept of Electronics & Telecom. Engg.
C O E Pandharpur

2017-18 LIST WITH SAMPLE CERTIFICATES

Department of Electronics & Telecommunication Engineering INTERNSHIP DETAILS A.Y.: 2017-18

| Roll.No. | Name of the student | Industry Name |
|----------|---------------------------------|---------------------------|
| 1 | MOKSHADA RAMLING ANANTPURE | AFTEK LIMITED SOLAPUR |
| 2 | SHAHISTA IQBAL ATAR | AFTEK LIMITED SOLAPUR |
| 3 | VAISHNAVI VITTHAL AWATADE | AFTEK LIMITED SOLAPUR |
| 4 | SWAPNALI SUDHAKAR BHOSALE | AFTEK LIMITED SOLAPUR |
| 5 | BANUBAI DATTATRAY CHAVAN | AFTEK LIMITED SOLAPUR |
| 6 | PRATIKSHA ARUN GAIKWAD | AFTEK LIMITED SOLAPUR |
| 7 | SNEHA RAJA GHONGADE | AFTEK LIMITED SOLAPUR |
| 8 | DIKSHA VITTHAL JADHAV | AFTEK LIMITED SOLAPUR |
| 9 | GAYATRI SANJAY JAVANJAL | AFTEK LIMITED SOLAPUR |
| 10 | PRAJAKTA NARAYAN KAMBALE | AFTEK LIMITED SOLAPUR |
| 11 | BHAGWATI KRUSHNA KAMBLE | AFTEK LIMITED SOLAPUR |
| 12 | USHA ARJUN MASAL | AFTEK LIMITED SOLAPUR |
| 13 | MOHINI MADHUKAR PANGARE | AFTEK LIMITED SOLAPUR |
| 14 | SONALI PANDURANG PAPARKAR | AFTEK LIMITED SOLAPUR |
| 15 | KOMAL KAMALAKAR PATIL | AFTEK LIMITED SOLAPUR |
| 16 | BHAGYASHRI CHANDRAKANT SAWALE | AFTEK LIMITED SOLAPUR |
| 17 | SUNITA PRAKASH SHINDE | AFTEK LIMITED SOLAPUR |
| 18 | URMILA DEEPAK SHINDE | AFTEK LIMITED SOLAPUR |
| 19 | ASHANTA LAXMAN WAGHMARE | AFTEK LIMITED SOLAPUR |
| 20 | DEEKSHA DILIPKUMAR WAGHMARE | AFTEK LIMITED SOLAPUR |
| 21 | VARSHA ASHOK WAGHMARE | AFTEK LIMITED SOLAPUR |
| 22 | PRITI SITARAM YELALE | AFTEK LIMITED SOLAPUR |
| 23 | PUNAM SHRIRANG BHOSALE | 4 DIMENSION LIMITED, PUNE |
| 24 | MAYURI MAHADEO MORE | AFTEK LIMITED SOLAPUR |
| 25 | ABHISHAKTA SUBHASH BIRADAR | 4 DIMENSION LIMITED, PUNE |
| 26 | GITA BALIRAM TATE | AFTEK LIMITED SOLAPUR |
| 27 | KRISHNA SADANAND DINGARE | BSNL, SOLAPUR |
| 28 | NIKHIL MALLIKARJUN KANDI | BSNL, SOLAPUR |
| 29 | SIDHARTH RAVINDRA UPASE | BSNL, SOLAPUR |
| 30 | MADHAV PRKASH ADHATRAO ADHATRAO | AFTEK LIMITED SOLAPUR |
| 31 | KARANSING BABUSING RAJPUT | AFTEK LIMITED SOLAPUR |
| 32 | PATIL GAURAV | NEBULAR AUTOMATION |
| 33 | PAYAL DNYANESHWAR BHOSALE | MSEB, PANDHARPUR |
| 34 | VAIBHAVI KANTILAL BUBANE | BSNL, SOLAPUR |
| 35 | SNEHAL UTTAM DESHMUKH | AFTEK LIMITED SOLAPUR |
| 36 | KRANTI DAMAJI DESHPANDE | AFTEK LIMITED SOLAPUR |
| 37 | PRIYANKA MAHESH DHOTRE | ELECTROSAL HI.TECH |
| 38 | PRIYANKA SUNIL DIXIT | SATHE ENGINEERING COMPANY |
| 39 | SAYALI SUDHAKAR GADEKAR | MSEB, PANDHARPUR |
| 40 | KARTIKI PRAKASH GAIKWAD | AFTEK LIMITED SOLAPUR |
| 41 | GAYATRI NAVNATH GEND | AFTEK LIMITED SOLAPUR |
| 42 | KAJAL NAMDEO GHODAKE | AFTEK LIMITED SOLAPUR |

| | | |
|----|------------------------------|-----------------------|
| 43 | SUPRIYA SATISH GHODAKE | AFTEK LIMITED SOLAPUR |
| 44 | KOMAL DHANANJAY INGALE | BIHARAT ELECTRICALS |
| 45 | ROHINI RAMCHANDRA JADHAV | BSNL, SATARA |
| 46 | SAYALI NANDKUMAR JOSHI | MSEB, PANDHARPUR |
| 47 | PRIYANKA ARJUN MORE | AFTEK LIMITED SOLAPUR |
| 48 | PRIYANKA NAVANATH NAIKNAWARE | SKADA TECH, PUNE |
| 49 | HEENA FARUK NAIKWADI | SKADA TECH, PUNE |
| 50 | PRIYANKA ASHOK NAKATE | AFTEK LIMITED SOLAPUR |
| 51 | NILAM NAGNATH PANDHARE | AFTEK LIMITED SOLAPUR |
| 52 | GAYATRI VISHWASRAO PATIL | MSEB, SHI TPHAL |
| 53 | NEHA MANIKRAO PATIL | AFTEK LIMITED SOLAPUR |
| 54 | POOJAA SANJEETRAO PATIL | AFTEK LIMITED SOLAPUR |
| 55 | VAISHNAVI KIRAN PATKI | MSEB, PANDHARPUR |
| 56 | APARNA VIRBHADRA POTDAR | AFTEK LIMITED SOLAPUR |
| 57 | KAJOL VITTHAL SAWANT | AFTEK LIMITED SOLAPUR |
| 58 | SHUBHANGI BALIRAM SHINGARE | BSNL, SOLAPUR |
| 59 | KIRAN VIJAYKUMAR THORAT | DOORDARSHAN KENDRA |

Handwritten signature

HEAD
 Dept. of Electronics & Telecom. Engg.
 C. D. E. Pandharpur

2017-18 LIST WITH SAMPLE CERTIFICATES

Department of Electronics & Telecommunication Engineering

INTERNSHIP DETAILS

A.Y.: 2017-18

| Roll.No. | Name of the student | Industry Name |
|----------|---------------------------------|---------------------------|
| 1 | MOKSHADA RAMLING ANANTPURE | AFTEK LIMITED SOLAPUR |
| 2 | SHAHISTA IQBAL ATAR | AFTEK LIMITED SOLAPUR |
| 3 | VAISHNAVI VITTHAL AWATADE | AFTEK LIMITED SOLAPUR |
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| 7 | SNEHA RAJA GHONGADE | AFTEK LIMITED SOLAPUR |
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| 11 | BHAGWATI KRUSHNA KAMBLE | AFTEK LIMITED SOLAPUR |
| 12 | USHA ARJUN MASAL | AFTEK LIMITED SOLAPUR |
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| 27 | KRISHNA SADANAND DINGARE | BSNL, SOLAPUR |
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| 59 | KIRAN VIJAYKUMAR THORAT | DOORDARSHAN KENDRA |

Handwritten signature

HEAD

Dep. of Electronics & Telecom. Engg.
C. D. E. Pandharoux

A-19/2, CHINCHOLI M.I.D.C.

SOLAPUR - 413 255.

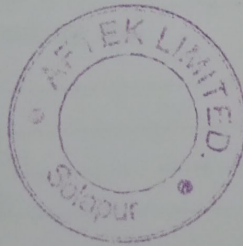
Phone : 91-217-2357637 / 2357692

CERTIFICATE

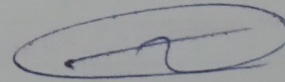
This is to certify that, **Miss Shahista Iqbal Atar** a Student of SVERI's College of Engineering, Pandharpur (S.E. E & TC) has successfully completed his concurrent Vacation Training from 27th May 2017 to 10th June 2017 in our company. To best of my knowledge, she is sincere, honest and devoted to the work. She bears a good moral conduct.

Date: 10th June 2017

Place: Solapur



Aftek Limited, Solapur

A handwritten signature in blue ink, consisting of a stylized 'A' followed by a horizontal line and a small flourish.

Authority Signature

Office of the General Manager Telecom,
Telephone Bhavan, Balives, Solapur-413 002.
Tel No. : 0217 - 2723899



Bharat Sanchar Nigam Limited
(A. Govt. of India Enterprise)

CERTIFICATE

This is to certify that

Mr. Sidharth Ravindra Upase

has completed successfully the following Course conducted by
Bharat Sanchar Nigam Limited, Solapur

Name of the Course : Vocational Training For Diploma/Engg Students

Course Subject : Overview of Telecom Systems & Its Functioning

Commencing Date : 06-06-2017

Duration : 15 Days

AGM (ADMN)

Course Code : SPRVTFESB17 Course Schedule Code : SPRVTFESB172WK

LIST OF VOCATIONAL TRAINING

Department of Electronics & Telecommunication Engineering

INTERNSHIP DETAILS

A.Y.: 2018-19

| Roll.No. | Name of the student | Industry Name |
|----------|-----------------------------|--------------------------------------|
| 1 | Dargude Pratiksha Nagnath | Divya Electrical, Tembhurni |
| 2 | Dubal Samiksha Nanasaheb | Data Council, Pune |
| 3 | Jadhav Pranita Sunil | Aptron Tech, Satara |
| 4 | Kaldhone Amruta Sanjay | Pioneer Electronics, Pune |
| 5 | Kambale Reshma Hanumant | Laxmi Agro Energy Pvt. Ltd., Solapur |
| 6 | Koli Sayali Shamrao | Laxmi Agro Energy Pvt. Ltd., Solapur |
| 7 | Koli Vrushali Rajendra | Laxmi Agro Energy Pvt. Ltd., Solapur |
| 8 | Mane Prachi Avadhut | Prem Turbine, Pune |
| 9 | Patil Sayali Suryakant | Solar Electronics, Solapur |
| 10 | Ronge Swapnaja Yuvraj | Mind Matrix |
| 11 | Sanjekar Pratiksha Vijay | Aptron Tech, Satara |
| 12 | Shinde Priyanka Subhash | Laxmi Agro Energy Pvt. Ltd., Solapur |
| 13 | Shingade Varsha Balvant | Unitech Autoswitch |
| 14 | Tamboli Anisa Kadar | Aptron Tech, Satara |
| 15 | Tarange Reshma Sham | Aptron Tech, Satara |
| 16 | Waghmode Yamini Vilas | Pioneer Electronics, Pune |
| 17 | Yadav Chhaya Appa | Solar Electronics, Solapur |
| 18 | Upase Sangamesh | BSNL |
| 19 | Bagal Mohini Tanaji | Solar Electronics, Solapur |
| 20 | Bhosale Aishwarya Gopal | Solar Electronics, Solapur |
| 21 | Bhosale Kavita Ganpat | Solar Electronics, Solapur |
| 22 | Bhosale Ruchita Vilas | Newsoft Solution Solapur |
| 23 | Chavare Shubhangi Sambhaji | Solar Electronics, Solapur |
| 24 | Dhotre Rohini Shahaji | Digitech Electronics Training, Latur |
| 25 | Gumaste Ketaki Sunil | Solar Electronics, Solapur |
| 26 | Koli Jyoti Nagnath | Solar Electronics, Solapur |
| 27 | More Kirti Ashok | Kannad Industry, Sangli |
| 28 | Myakal Samita Balaji | Kannad Industry, Sangli |
| 29 | Navalai Seema Laxman | Kannad Industry, Sangli |
| 30 | Navgire Pragati Purushottam | Solar Electronics, Solapur |
| 31 | Patil Dhanshree Sanjay | Kannad Industry, Sangli |
| 32 | Patil Nishigandha Santosh | Kannad Industry, Sangli |
| 33 | Potdar Gunjan Sarang | Kannad Industry, Sangli |
| 34 | Shahane Manasi Mahesh | Digitech Electronics Training, Latur |
| 35 | Survase Tejaswini Vishnu | Solar Electronics, Solapur |
| 36 | Wagh Kanchan Sudhakar | Solar Electronics, Solapur |
| 37 | Yadav Anuja Dnyaneshwar | Solar Electronics, Solapur |
| 38 | Hindule Madhavi Shashikant | BSNL, Solapur |

| | | |
|----|---------------------------------|---|
| 39 | Sawant Mayuri Balkrushna | Newsoft Solution Solapur |
| 40 | Yelasange Anjali Mahadev | Kannad Industry, Sangli |
| 41 | Ranaware Rohit Suhas | Kannad Industry, Sangli |
| 42 | Sonawane Sharad Magan | Vitthal Refined Sugar Factory Ltd., Solapur |
| 43 | Tate Deshmukh Krishna Rajendra | Sharda Electronics & Co., Sangli |
| 44 | Maradkar Dnyaneshwari Suryakant | L&T Electrical & Automation, Ahmednagar |
| 45 | Jagtap Aniketa Ashok | Mega Kit |
| 46 | Parbat Supriya Sayaji | Aptron Tech, Satara |
| 47 | Vhanmane Sonali Kanhaiyalal | Aptron Tech, Satara |
| 48 | Kamble Mahesh Bibhishan | Aptron Tech, Satara |
| 49 | Nagane Priyanka Vitthal | Aptron Tech, Satara |
| 50 | Rokade Soniya Sanjay | Data Council, Pune |
| 51 | Maske Yogita Suresh | Basic Matlab & Embedded Enternship |
| 52 | Katkar Anjali Pandurang | Kannad Industry, Sangli |
| 53 | Wakade Prajakta Kashinath | Aptron Tech |
| 54 | Gore Janabai Balasaheb | Sugar Industry |
| 55 | More Tanuja Ashok | Aptron Tech, Satara |
| 56 | Baba Bhagyashri Shivshankar | Solar Electronics, Solapur |
| 57 | Hindule Ravikant Shashikant | Aptron Tech, Satara |
| 58 | Karande Jayashri Dattatraya | Solar Electronics, Solapur |
| 59 | Asabe Pratima Navnath | Solar Electronics, Solapur |


HOD ENT

HEAD

Dept. of Electronics & Telecom. Engg.
C. N. C. Pandharwar

INDUSTRY CERTIFICATE

Office of the General Manager Telecom
Telephone Bhavan, Balives, Solapur-413 002
Tel No. 0217 - 2723899



Bharat Sanchar Nigam Limited
(A. Govt. of India Enterprise)

CERTIFICATE

This is to certify that

HINDULE MADHAVI SHASHIKANT

has completed successfully the following Course conducted by
Bharat Sanchar Nigam Limited, Solapur

Name of the Course : Vocational Training For Diploma/Engg Students
Course Subject : Overview of Telecom Systems & Its Functioning
Commencing Date : 24-05-2018
Duration : 2 Week

AGM (ADMN)

Course Code : SPRVTFESB24 Course Schedule Code : SPRVTFESB242WK

LIST OF VOCATIONAL TRAINING

Department of Electronics & Telecommunication Engineering

INTERNSHIP DETAILS

A.Y.: 2019-20

| Roll.No. | Name of the student | Industry Name |
|----------|------------------------------|---|
| 1 | Kale Abhilasha Avinash | KANNAD ELECTRONICS, Sangli |
| 2 | Nikte Geeta Prashant | KANNAD ELECTRONICS, Sangli |
| 3 | Rajmane Manali Sunil | KANNAD ELECTRONICS, Sangli |
| 4 | Pathan Sameer Khajoddin | Solar Electronics, Solapur |
| 5 | Mule Soujanya Subhash | KANNAD ELECTRONICS, Sangli |
| 6 | Thengal Pallavi Vishwas | KANNAD ELECTRONICS, Sangli |
| 7 | Dhekale Pratiksha Rajaram | Shivharshad Electrical Transformer, Watambare |
| 8 | Bagal Madhuri Navanath | DIVYA Electrical Company, Temburni |
| 9 | Wadtile Vaishnavi Janardan | Shivharshad Electrical Transformer, Watambare |
| 10 | Chakote Digvijay | Aptron Tech, Satara |
| 11 | Shembade Janhavi Dilip | Solar Electronics, Solapur |
| 12 | Hodade Rushikesh Somnath | Vedam Lab |
| 13 | Vhasale Sagar Appaso | DRM Office, Solapur |
| 14 | Mulani Salman Shahajahan | Solar Electronics, Solapur |
| 15 | Lokhande Mayuri | Aptron Tech, Satara |
| 16 | Mendhegiri Shweta Shantinath | KANNAD ELECTRONICS, Sangli |
| 17 | Vhargar Monali Vilas | KANNAD ELECTRONICS, Sangli |
| 18 | Kumbhar Seema Ramdas | Shivharshad Electrical Transformer, Watambare |
| 19 | Phulare Nikita Sham | Solar Electronics, Solapur |
| 20 | Khadekar Nisha Soudagar | KANNAD ELECTRONICS, Sangli |
| 21 | Bennesur Laxmi Iranna | Shivharshad Electrical Transformer, Watambare |
| 22 | Ghodake Shubham Tukaram | DRM Office, Solapur |
| 23 | Jagtap Suranjali Bandu | Shivharshad Electrical Transformer, Watambare |
| 24 | Bachute Bhushan Siddeshwar | KANNAD ELECTRONICS, Sangli |
| 25 | Repal Shraddha Anil | Vedam Lab |
| 26 | Maske Akshay Rajendra | DRM Office, Solapur |
| 27 | Walugade Pratiksha Ankush | Shivharshad Electrical Transformer, Watambare |
| 28 | Chavan Rutuja Shivaji | Vedam Lab |
| 29 | Chavare Bhushan Mahavir | Solar Electronics, Solapur |
| 30 | Tapise Puja Digambar | Shivharshad Electrical Transformer, Watambare |
| 31 | Khandare Darshana Rajesh | Sugar Factory, Sangola |
| 32 | Pawar Sanjay Shankar | Solar Electronics, Solapur |
| 33 | Pachave Nitin Subhash | Solar Electronics, Solapur |
| 34 | Shelake Puja Ramchandra | Solar Electronics, Solapur |
| 35 | Mahajan Ishita Pradeep | Solar Electronics, Solapur |
| 36 | Harane Sanjivani Raju | Solar Electronics, Solapur |
| 37 | Mukare Vaibhav Suryakant | DRM Office, Solapur |
| 38 | Dhanwate Upendra Narsinha | KANNAD ELECTRONICS, Sangli |

| | | |
|----|------------------------------|---|
| 39 | Ubale Santosh Datatraya | Solar Electronics, Solapur |
| 40 | Danure Amit Ganpatrao | Bajaj Elevators & Electricals |
| 41 | Walekar Smita Mahadev | KANNAD ELECTRONICS, Sangli |
| 42 | Indi Shivganga Subhash | Shivharshad Electrical Transformer, Watambare |
| 43 | Wagaj Pratiksha Hanumant | Shivharshad Electrical Transformer, Watambare |
| 44 | Gunjal Surekha Vilas | KANNAD ELECTRONICS, Sangli |
| 45 | Jadhav Vrushali Arun | Solar Electronics, Solapur |
| 46 | Godase Shruti Nagesh | DRM Office, Solapur |
| 47 | Randive Ashwini Bramhadev | Shivharshad Electrical Transformer, Watambare |
| 48 | Mirgane Shraddha Bharat | KANNAD ELECTRONICS, Sangli |
| 49 | Kale Komal Kiran | KANNAD ELECTRONICS, Sangli |
| 50 | Hegade Nikita | B & R Electro Tech, Sangli |
| 51 | Dudhal Rutuja Suresh | Shivharshad Electrical Transformer, Watambare |
| 52 | Devakate Gayatri Chichalappa | Shivharshad Electrical Transformer, Watambare |
| 53 | Mhamane Aishwarya Sanjay | Solar Electronics, Solapur |
| 54 | Bhosale Utkarsha Bharat | Shivharshad Electrical Transformer, Watambare |
| 55 | Shinde Jyoti Sanjay | DRM Office, Solapur |
| 56 | More Suhashini Balaji | Shivharshad Electrical Transformer, Watambare |
| 57 | Bharma Swati Shivalingappa | Shivharshad Electrical Transformer, Watambare |
| 58 | Katakamawar Shreenivas D. | DRM Office, Solapur |
| 59 | Jamagi Yogini Siddhappa | Shivharshad Electrical Transformer, Watambare |

Handwritten signature

HEAD

Dept. of Electronics & Telecom. Engg.
Q. U. Pandharpur

KANAAD SERVICES AND TRAINING

SANGLI



Certificate

We have pleasure to certify that

Mr./Miss/Ms. Geeta Prashant Nikte.

is awarded this certificate for having successfully completed
a vocational training Program / Workshop on
Electronic circuit Analysis

During the period from 29-5-2019 To 12-6-2019

PHOTO

Course Co-ordinator
KANAAD SERVICES AND TRAINING



SOLAR
ELECTRONICS

green world in the making

Office : 'IJamata Bungalow', Near Maharashtra Bank,
Saat Rasta, Solapur 413 003 (M.S.), India.
Tel. 91-217-2602467 Tele/Fax : 91-217-2601713
Email : solarlighting11@gmail.com
solar1989@rediffmail.com

Website : www.solarelectronics.in www.solarelectronics.tradeindia.com www.indiamart.com/solar-electronics/

Date : - 07/06/2019.

Ref. No: - SUR/19K06/472

CERTIFICATE

This is to certify that, *Mr. Sameer Khajoddin Pathan* student of *Shri Vithal Education & Research Institute's, College of Engineering, Pandharpur* Studying in *ENTC 2nd Year*. Undergone the *Industrial Training* in our Company *Solar Electronics, Solapur* for the period of *24th May 2019* to *07th June 2019*.

He has completed the training successfully.

Thanking you,

For Solar Electronics, Solapur.

f. Aslondhe
Authorised Signatory



Pune Office : Building No. 1, Flat No. 4, Zala Housing Society, Karishma Chowk,
Karve Road, Behind Papa Jones, Pune 411 029, (M.S.), INDIA.
Factory : Plot No. 142, Hotgi Road, Industrial Estate,
Solapur 413 003. Maharashtra, INDIA

Experiential Learning through Virtual Labs

- **Use Modern IT Tools**
- **Apply the basic engineering knowledge**
- **Life Long Learning**

Virtual Lab Registration Procedure

About Virtual Lab: Physical distances and the lack of resources make us unable to perform experiments, especially when they involve sophisticated instruments. Conducting joint experiments by two participating institutions and also sharing costly resources has always been a challenge. Today most equipment has a computer interface for control and data storage. It is possible to design good experiments around some of this equipment which would enhance the learning of a student. Internet-based experimentation further permits use of resources knowledge, software, and data available on the web, apart from encouraging skillful experiments being simultaneously performed at points separated in space (and possibly, time). Virtual Labs will be made more effective and realistic by providing additional inputs to the students like accompanying audio and video streaming of an actual lab experiment and equipment.

Objectives:

- 1.To provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars.
- 2.To enthuse students to conduct experiments by arousing their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.
- 3.To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.
- 4.To share costly equipment and resources, which are otherwise available to limited number of users due to constraints on time and geographical distances.

Registration Steps are as follows with respect to PART A (internet) and PART B (intranet):

Part A: Registration on COE, Pune Virtual Lab Portal

Step1: Copy and paste following url into web browser and press enter for request:

<https://portal.coepvlab.ac.in/>

Step2: Click on "[Virtual Labs Simulation Portal \(internet\)](#)" in application links section, it will redirect you to next page

Step3: Click on "**Register**" tab (on the page upper right corner), it will redirect you to registration form page

Step4: Enter all the details like First Name, Middle Name, Last name, DOB, Mobile number, etc.

NOTE: 1. Select college name from dropdown list as "**NC 15 Shri Vithal Education & Research Institute, Pandharpur**"

2. **Provide Your College email_id in the required field.**

Step5: After completion of Step4, the system will send Login Details on your registered email id. **Sign in to your college email id**

Step6: Use this User Id and Password received at your email id for the validation purpose on following link: <https://portal.coepvlab.ac.in/vlab/>

Step7: You can Change your password (if required)

Step8: **As per your interest and your streams, you can check available labs.**

Step9: **Click on any experiment and run the simulation part of that experiment. If simulation part visualize clearly, then your registration is considered as successful.**

Step10. Logout

Part B: Login on SVERI's Virtual Lab Server

(This process you have carry out on next day because Virtual Lab Server from COE, Pune have scheduled synchronization of data with our Virtual Lab Server everyday at midnight. So, once registration on their server will allow you to access our server on next day.)

After completing above procedure from step1 to step10 from PART A, on next day login to our Virtual Lab server using following link:

<http://14.139.114.201:8080/vlab/>

Note: Use the same emailid and password which is used for the Part A registration process.

Here onwards, we need to use virtual labs available for our academic enrichment purpose by using our server link: <http://14.139.114.201:8080/vlab/>

For any query, kindly connect to the undersigned.



Mr. P. G. Gaikwad
CSE, Department
Virtual Lab Nodal Center Coordinator
SVERI's College of Engineering, Pandharpur

Search By

General

College Name

NC 15 Shri Vitthal Education & Research Institute, Pandharpur, Solapur

Virtual Area :

Electronics and Communications

Lab Name :

--Any--

Experiment Name :

--An...

State Name

--Any--

From date :

01/07/2015

To date :

30/06/2016

Search

Statistical View

Graphical View

Total Simulator Time : 12 : 32 : 36



Total Simulator Hit : 143

2016-17

You are signed in as X detectportal.firefox.com X Fwd: Forget Password X COEP :: VLAB X Search results - Google X Meet - fgb-yuxa X Television History, I X

https://portal.coepvlab.ac.in/vlab/auth/home 80%

Most Visited Getting Started Web Slice Gallery Suggested Sites Other Bookmarks

 VIRTUAL LABS @ COLLEGE OF ENGINEERING PUNE 

Home Records Welcome, Pankaj Gaikwad

Search By General

College Name NC 15 Shri Vitthal Education & Research Institute, Pandharpur, Solapur

Virtual Area : Electronics and Communications

Lab Name : --Any--

Experiment Name : --An...

State Name --Any--

From date : 01/07/2016

To date : 30/06/2017

Search

Statistical View Graphical View

Total Simulator Time : 1 : 13 : 26 Total Simulator Hit : 14

Show desktop

2:04 PM 2/12/2021

2017-18

You are signed in as: X detectportal.firefox.com X Fwd: Forget Passwor X COEP :: VLAB X Search results - Google X Meet - fgb-yuxa X Television History X

https://portal.coepvlab.ac.in/vlab/auth/home 80%

Most Visited Getting Started Web Slice Gallery Suggested Sites Other Bookmarks

VIRTUAL LABS @ COLLEGE OF ENGINEERING PUNE

Home Records Welcome, Pankaj Gaikwad

Search By: General

College Name: NC 15 Shri Vitthal Education & Research Institute, Pandharpur, Solapur

Virtual Area: Electronics and Communications

Lab Name: --Any--

Experiment Name: --An...

State Name: --Any--

From date: 01/07/2017

To date: 30/06/2018

Search

Statistical View Graphical View

Total Simulator Time : 3 : 6 : 41

Total Simulator Hit : 133

2:04 PM 2/12/2021

2018-19

Browser tabs: You are signed in as, detectportal.firefox.com, Fwd: Forget Password, COEP :: VLAB, Search results - Google, Meet - fgb-yuxa, Television History, In

Address bar: <https://portal.coeplab.ac.in/vlab/auth/home>

Navigation: Most Visited, Getting Started, Web Slice Gallery, Suggested Sites, Other Bookmarks

VIRTUAL LABS @ COLLEGE OF ENGINEERING PUNE

Home Records Welcome, Pankaj Galkwad

Search By: General

College Name: NC 15 Shri Vitthal Education & Research Institute, Pandharpur, Solapur

Virtual Area: Electronics and Communications

Lab Name: --Any--

Experiment Name: --An--

State Name: --Any--

From date: 01/07/2018

To date: 30/06/2019

Search

Statistical View Graphical View

Total Simulator Time : 63 : 9 : 0


Total Simulator Hit : 1036

Taskbar: Windows, File Explorer, Edge, VLC, Firefox, PowerPoint, Word, System Tray (2:06 PM 2/12/2021)


[You are signed in as](#) [detectportal.firefox.com](#) [Fwd: Forget Password](#) [COEP::VLAB](#) [Search results - Google](#) [Meet - fgb-yuxa](#) [Television History, I](#)

[←](#) [→](#) [↻](#) [🏠](#) [🔒](#) [https://portal.coepvlab.ac.in/vlab/auth/home](#) [📄](#) [80%](#) [⋮](#) [🔒](#) [★](#) [⬇](#) [🔍](#) [📅](#) [👤](#) [☰](#)

[⚙️ Most Visited](#) [🌐 Getting Started](#) [🌐 Web Slice Gallery](#) [📌 Suggested Sites](#) [📁 Other Bookmarks](#)



VIRTUAL LABS @ COLLEGE OF ENGINEERING PUNE



[Home](#) [Records](#) [👤 Welcome, Pankaj Gaiikwad](#)

Search By General

College Name NC 15 Shri Vitthal Education & Research Institute, Pandharpur, Solapur

Virtual Area : Electronics and Communications

Lab Name : Any

Experiment Name : An...

State Name Any

From date : 01/07/2019

To date : 30/06/2020

[Search](#)

[📊 Statistical View](#)
[📈 Graphical View](#)

Total Simulator Time : 53 : 55 : 23

Total Simulator Hit : 711

SCREENSHOTS

Virtual Lab MOM L 1

he-coep.vlabs.ac.in/Experiment1/index1.html

LABS

An MHRD Govt of India Initiative

Adder Subtractor 4 bit Adder/Subtractor

Half Adder Full Adder 2bit Adder

2 bit Adder

Run Clear

Input A2 Input B2 Input A1 Input B1

1 ON OFF 0 0 OFF ON 1

CARRY 1

SUM2 0

SUM1 0

Cin ON 1

35:56

S

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Virtual Lab MOM L 1

sm-nitk.vlabs.ac.in/exp13/index.html#

Final Length between the punch mark = 77.31mm

© 2016 - 2020 SOLVE - The Virtual Lab @ NITK Surathkal, Department of Water Resources & Ocean Engineering

Copyright © 2016 - 2020 SOLVE - The Virtual Lab at NITK Surathkal

29°C Partly sunny 15:43 09-10-2021

42:26 / 58:32

Scroll for details

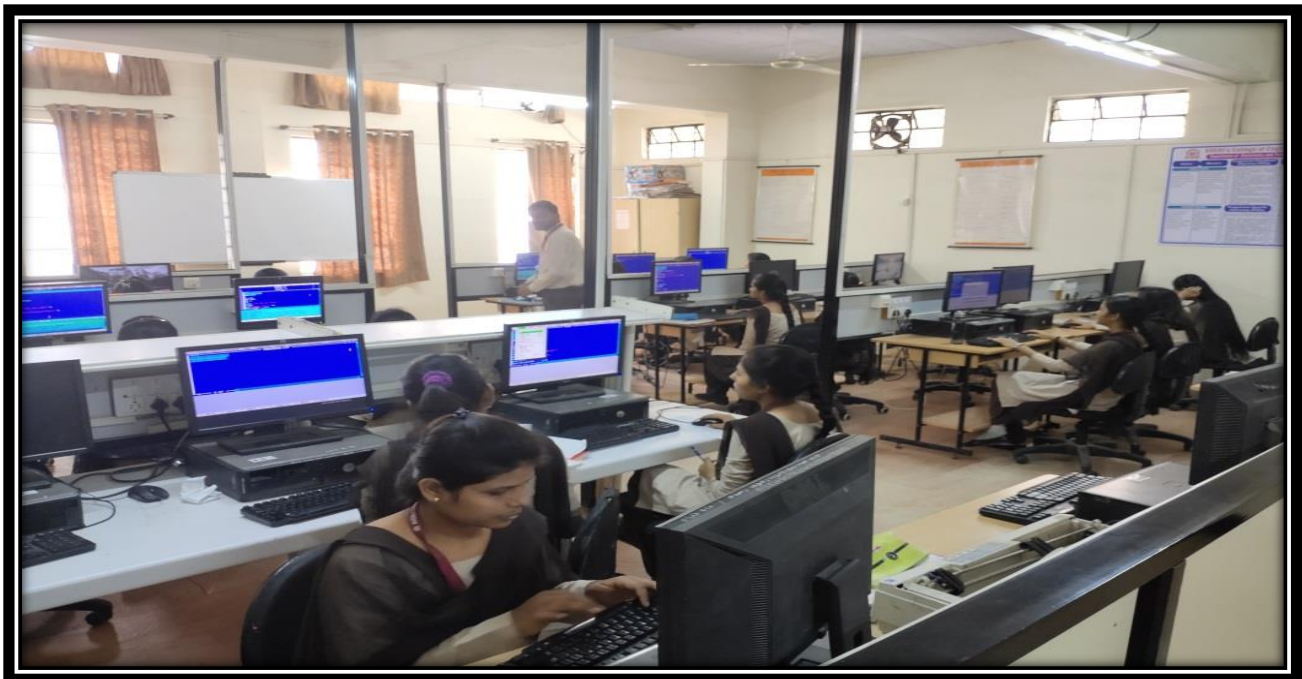
Avinash Parkhe

Experiential Learning through Lab Work

- **Individual Participation**
- **Apply the basic engineering knowledge**
- **Design and analysis of experiments**



Laboratory Name: Electronics Design and Power Electronics Laboratory



Laboratory Name: Computer Aided Electronics Design Lab III

Experiential Learning through Hands-on Workshops

- **Apply the basic engineering knowledge**
- **Use of Modern Tools**
- **Communicate effectively**
- **Life Long Learning**

SUMMARY SHEET FROM 2015-16 TO 2019-20

SVERI's College of Engineering, Pandharpur Department of Electronics and Telecommunication Engineering

Summary of Workshops/ STTP 2015 To 2020

| Sr. No. | Year | Name of Workshop | Department | Date | Department | Details of Resource Person (Name, Designation, Institute/Organization, Contact Details (email/phone), Year of Experience) |
|---------|---------|---|------------|--------------------------|------------|--|
| 1 | 2015-16 | Use of Scilab and Open Source Resource for Engineering Applications | 35 | 07/12/2015 to 11/12/2015 | ENTC | 1. Ms Varsha Patil Assistant Professor, AISSMS IOIT, Pune 2. Mr. Vinayak Mandlik Assistant Professor, ENTC Dept. Bharati Vidyapeeth COE Kolhapur 3. Mr.U.S.Sagare Assistant Professor, Dr D. Y.Patil Institute of Engineering & Technology, Kolhapur 4. Mr. Asvija B. Senior Technical Officer, C-DAC, Bangalore |
| 2 | 2015-16 | Entrepreneurship Awareness Camp-ENTC | 145 | 19/08/2015 to 21/08/2015 | ENTC | Mr. Pandurang Kambale, Project Officer, MCED, Solapur District Industrial Center, Solapur Mobile No. 7020531125 Email ID: solapurpomced@gmail.com |
| 3 | 2015-16 | Meta Material, Antenna Design, Innovations and Applications | 40 | 02/05/2016 to 7/5/2016 | ENTC | 1. Dr. Anand Rao B. Kakade, Dean R&D, RIT Sakharale 2. Dr. Shrinivas Mahajan Professor, College of Engineering, Pune 3. Mr. Sumit Pillai Design Tech Systems 4. Prof. R S Bhadade Assistant Professor, MIT, kotrud |
| 4 | 2016-17 | Entrepreneurship Awareness Camp-ENTC | 90 | 09/08/2016 to 11/08/2016 | ENTC | Mr. Pandurang Kambale, Project Officer, MCED, Solapur District Industrial Center, Solapur Mobile No. 7020531125 Email ID: solapurpomced@gmail.com |
| 5 | 2017-18 | Entrepreneurship Awareness Camp-ENTC | 102 | 08/08/2017 to 10/08/2017 | ENTC | Mr. Pandurang Kambale, Project Officer, MCED, Solapur District Industrial Center, Solapur Mobile No. 7020531125 Email ID: solapurpomced@gmail.com |
| 6 | 2017-18 | Workshop on 'Exploring Arduino applications in the field of Engg' organized by ENTC dept sponsored by IET Solapur local centre. | 30 | 29/06/2017 | ENTC | 1. Mr. A.I Merchant CEO, 3-Axes Kalburgi 2. Mr. Sharan K. Director, Preva Systems Pvt. Ltd., Bangalore 3. Mr. Raviprakash, Preva Systems Pvt. Ltd., Bangalore |
| 7 | 2017-18 | Electronic Product Design | 25 | 04/01/2018 to 8/1/2018 | ENTC | 1. Mr. Sanjay Jogalekar Founder, Kanaad Electromotion Solutions Pvt. Ltd. 2. Mr. Kunal Wakhare SOFTCON Pvt Ltd, Pune 3. Mr. Sumit Kamble SOFTCON Pvt Ltd, Pune |
| 8 | 2018-19 | Entrepreneurship Awareness Camp-ENTC | 132 | 27/08/2018 to 29/08/2018 | ENTC | Mr. Pandurang Kambale, Project Officer, MCED, Solapur District Industrial Center, Solapur Mobile No. 7020531125 Email ID: solapurpomced@gmail.com |
| 9 | 2019-20 | Entrepreneurship Awareness Camp-ENTC | 84 | 26/08/2019 to 28/08/2019 | ENTC | Mr. Pandurang Kambale, Project Officer, MCED, Solapur District Industrial Center, Solapur Mobile No. 7020531125 Email ID: solapurpomced@gmail.com |
| 10 | 2019-20 | Recent Developments in Antenna design, Fabrication and Testing | 40 | 26/12/2019 to 30/12/2019 | ENTC | 1. Mr. Anirudha Kulkarni, RF Design Engineer at Mumbai 2. Mr. Mohit Garade, Project Engineer, Altair india, Pune 3. Mr. Praveen B Mohite, Director Aptron Tech, satara 4. Dr. Veerendra D Dean R&D GNDEC, Bidar |
| 11 | 2019-20 | Advances and Research Opportunities in ENTC Engineering | 42 | 10.06.2020 to 14.06.2020 | ENTC | 1. Mr. Sanjay Jogalekar Founder, Kanaad Electromotion Solutions Pvt. Ltd. 2. Mr. Sudarshan Natu MD, Nital Computer Systems Pvt. Ltd. 3. Dr. Akash Gandhmajal Technical Lead, Applied Material, Bengaluru 4. Dr. Shrinivas Mahajan Professor, College of Engineering, Pune 5. Dr. D.T. Ingole Director, Innovation, Incubation and Linkages SGBAU, Amaravati |

bnp

HEAD
Dept of Electronics & Telecom. Engg
S. O. E. Pandharpur

OFFICE ORDER

Department of Electronics and Telecommunication Engineering


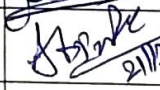
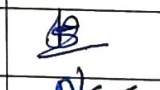



Date: 19.12.19

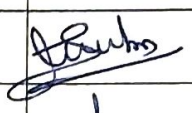

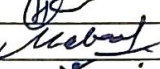
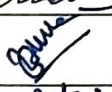
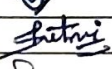

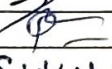
Office order

It is brought to the notice of all the teaching and non-teaching staff, that the following committees have been formed for the smooth conduction of One Week Short term Training Program on "**Recent Developments in antenna Design, Fabrication and Testing**" from 26th to 30th December 2019".

Note:

1. Registration fee for faculty members and PG students is Rs.750/-
2. All the PG and UG guides are informed to ensure your respective students to register for STTP and it is mandatory for PG students.

| Committee Name | Responsibilities | Members | Signature |
|--|---|---|---|
| Organizing Secretary | Overall monitoring | Dr. A S Vibhute |  |
| Co -ordinator | | Dr. Mrs. M M Pawar | |
| Co -Coordinator | | Mr. M S Mathpati | |
| Registration and Publication committee | | Ms. S S Kadam | |
| Registration and Publication committee | Preparation of Broacher, Banners, Advertisement, Sponsors and Sending broacher to different colleges. Certificate, Feedback form preparation. Kit preparation, Registration of participants, publishing the news of inauguration and valedictory of STTP. | Mrs. J S Shinde (Co ordinator) |  |
| | | Ms. M S Biswas | |
| | | Mr. J S Hallur | |
| | | Ms. L A Palange | |
| Food Committee | Arrangement of breakfast and Lunch for outside participants and Tea during Session(2 Times) | Mr. S.A. Inamdar (Coordinator) |  |
| Accommodation Committee | | Mr. M A Deshmukh | |
| Accommodation Committee | Arrangements of rooms for guest and participants | Mr. A M Kasture (Coordinator) |  |
| | | Ms. N S Patil | |
| Stage Committee | Decoration, rangoli, Anchoring for inauguration and valedictory, Certificate distribution and , Feedback form collection. | Dr. Mrs. M M Pawar (Coordinator) |  |
| | | Ms. N P Kulkarni | |
| | | Mr. V S Bhong | |
| | | Ms. P B Kashid | |
| | | Ms. S V Jagzap | |
| Transportation Committee | Arrangement of vehicle for Guest and participants | Ms. S A Atole |  |
| | | Mr. D P Narsale (Coordinator) | |
| | | Mr. Akshay Jadhav | |

| Committee Name | Responsibilities | Members | Signature |
|---|--|--|---|
| Lab Arrangement committee | Announcement of session, Schedule preparation and managing lab sessions | <u>Ms. Sneha Kadam</u> (Coordinator) Mr. A A Jadhav Mr. H K Baldhar Mr. A D Mali |    |
| Budget | Collecting and distribution of amount to different activity. | <u>Ms. G G Unnale</u> (Coordinator) Mr. S P Swami |   |
| Video shooting, photography and Others. | Calling concerned person for Video shooting and photography Lab and hall cleanliness and other timely activity. | <u>Mr. N S Admille</u> (Coordinator) Mr. G M Patil, Mr. Sharad Kadam |   <u>S-Kadam</u> |



Co-ordinator



Organizing Secretary

SCHEDULE OF STTP/WORKSHOP
Department of Electronics and Telecommunication Engineering
SVERI's COE, Pandharpur

"Recent Developments in Antenna Design, Fabrication and Testing"

STTP schedule from 26th to 30th December 2019

| Day/Date | | Resource person | Sessions | | | | | |
|----------|------------------------|--|---|--|--|--|--|--|
| | | | I | | II | | III | IV |
| Day1 | Thursday 26.12.2019 | Mr. Anirudha Kulkarni , Team Leader & RF Design Engineer, RF Lab Solutions, Pune. | 8.30-10.00 Registration 10.00-10.30 Inauguration | S H O R T B R E A K | 10.45-12.45 Technical session (AK) | L U N C H B R E A K | 2.00 -3.15 Technical Session (AK) | 3.15-5.00 Hands on experience (AK) |
| Day2 | Friday 27.12.2019 | Mr. Shreehari Bhat Senior Application Specialist- Electromagnetic Solutions, Pune | 9.00-11.15 Technical session (SB) | | 11.30-12.45 Technical session (SB) | | 2.00 -3.15 Design and simulation Using CADFEKO (SB) | 3.15-5.00 Design and simulation Using CADFEKO (SB) |
| Day3 | Saturday 28.12.2019 | Mr. Shreehari Bhat Senior Application Specialist- Electromagnetic Solutions, Pune | 9.00-11.15 Technical session (SB) | | 11.30-12.45 Technical session (SB) | | 2.00 -3.15 Design and simulation Using CADFEKO(SB) | 3.15-5.00 Mr. Praveen B Mohite Demonstration of PCB Design (PBM) |
| Day4 | Sunday 29.12.2019 | Mr. Praveen B Mohite Director Apron Tech, satara | 9.00-11.15 Demonstration of PCB Design (PBM) | | 11.30-12.45 Demonstration of PCB Design (PBM) | | 2.00 -3.15 Demonstration of PCB Design (PBM) | 3.15-5.00 Demonstration of PCB Design (PBM) |
| Day5 | Monday 30.12.2019 | Dr. Veerendra D Dean R&D and Associate Professor, GNDEC Bidar | 9.00-11.15 Smart antenna and its application | | 11.30-12.45 Testing of Antenna Using VNA Technical Expert from EntupleTech.Pvt. Ltd. | | 2.00 -3.00 Visit to SVERI's R&D activity | 3.15-4.15 Valedictory function |

HEAU

Dept. of Electronics & Telecom. Engr.
 Pandharpur

SAMPLE OF STTP/WORKSHOP ATTENDENCE

S.V.E.R.I'S

COLLEGE OF ENGINEERING, PANDHARPUR.

Department of Electronics and Telecommunication Engineering

One Week Short Term Training Programme

On

"Recent Developments in antenna Design, Fabrication and Testing"

From 26th to 30th December 2019"

5th Day Attendance

Date: 30/12/19 .

| Sl No. | Name of the Participants | Session-I | Session-II | Session-III |
|--------|--------------------------|------------|------------|-------------|
| 1 | Amol C. Bhosale | | | |
| 2 | Maresh.M. Zade | | | |
| 3 | H.C. Bhaldar | | | |
| 4 | D.P. Narsale | | | |
| 5 | D.S. Shinde | | | |
| 6 | Mendhegiri Shweta | | | |
| 7 | Patil Ashvini | | | |
| 8 | Nikhe Geeta | G.P. Nikhe | G.P. Nikhe | G.P. Nikhe |
| 9 | Malare Saroja Shammrao | | | |
| 10 | chavan Rutuja Shivaji | | | |
| 11 | Mujawar Shmrn Hajisheh | | | |
| 12 | Priyanka vitttal Nagare | | | |
| 13 | sneha Bhaskar kamble | | | |
| 14 | More komal Narasheh | | | |
| 15 | Shirame Amruta D. | | | |
| 16 | Bhosale U.B | UBB | UBB | UBB |
| 17 | Galkwad A.B | AB | AB | AB |
| 18 | INS. Patil | | | |
| 19 | L.A. Palange | | | |
| 20 | Mr. S. P. Swarni | | | |
| 21 | Gawali Sachin | | | |
| 22 | Hodade Pushikesh Samnath | | | |
| 23 | Kamble mahesh. B | | | |
| 24 | S.V. Jagtap | | | |
| 25 | S.A. Atole | | | |
| 26 | A.D. Yasture | | | |
| 27 | Mr. J. S. Hallur | | | |
| 28 | M.D. Rushmukh | | | |
| 29 | P.S. Valte | | | |
| 30 | A.D. Malivasekar | | | |

HEAD

Dept. of Electronics & Telecom. Engg.
P. O. E. Pandharpur

संशोधनासाठी कार्यशाळेची गरज : अनिरुद्ध कुलकर्णी

स्वेरीमध्ये एस.टी.टी.पी. कार्यशाळेचे उदघाटन

पंढरपूर (प्रतिनिधी) : 'आपल्या दैनंदिन जीवनात अँटिना आणि त्याच्याशी संबंधित विविध विभाग हे खूप महत्वाचे असून या इलेक्ट्रॉनिक्स क्षेत्रांमध्ये उपलब्ध असणाऱ्या अद्यावत सुविधांमध्ये काम करावे लागते. अँटिना प्रोजेक्टमध्ये सध्या काम युद्धपातळीवर सुरू आहे. राष्ट्रीय कार्य संशोधन अंतर्गत अँटिना या क्षेत्रामध्ये संशोधन करणाऱ्यांची संख्या मात्र खूप कमी आहे. या तुलनेत कॉलेज ऑफ इंजिनियरिंग पंढरपूरमध्ये चालू असणारे या क्षेत्रातील संशोधन संबंधी इलेक्ट्रॉनिक्स अँड टेलिकम्युनिकेशन डिपार्टमेंटच्या कार्यशाळा माध्यमांतील सुविधांचा वापर करून भविष्यात अँटिना क्षेत्रात उत्तम संशोधन कार्य करता येवू शकते म्हणून संशोधनासाठी कार्यशाळेची गरज असते. 'असे प्रतिपादन पुण्यातील आर. एफ. सोल्युशन्सचे रेडीओ

फ्रिक्वेन्सी (आर.एफ.) डीझाईन इंजिनिअर अनिरुद्ध कुलकर्णी यांनी व्यक्त केले. गोपाळपूर (ता. पंढरपूर) येथील स्वेरी संचलित कॉलेज ऑफ इंजिनिअरिंगच्या इलेक्ट्रॉनिक्स अँड टेलिकम्युनिकेशन इंजिनिअरिंग विभागात आयोजिलेल्या आणि आठवडाभर चालणाऱ्या 'शॉर्ट टर्म ट्रेनिंग प्रोग्राम (एस.टी. टी.पी.)' च्या उदघाटन प्रसंगी अभियंता अनिरुद्ध कुलकर्णी उपस्थितांना मार्गदर्शन करत होते. प्रास्तविकात कार्यशाळेचे समन्वयक प्रा. महेश मठपती यांनी एस. टी. टी. पी. कार्यक्रमाबाबत सविस्तर माहिती देवून ही कार्यशाळा आयोजिन्याचा हेतू सांगितला. ए. आय. सी. टी. ई. कडून मॉडरॉब अंतर्गत मिळालेल्या निधीतून स्वेरी इंजिनिअरिंगच्या ई.अँड



टी.सी. विभागाने मायक्रोवेव लॅब अद्यावत करण्यात आली आहे. त्याचा फायदा सर्व विद्यार्थ्यांना व संशोधकांना व्हावा ह्या हेतूने या कार्यशाळेचे आयोजन करण्यात आले. पुढे बोलताना अभियंता कुलकर्णी यांनी उपलब्ध असणाऱ्या सुविधा वेक्टर नेटवर्क

अॅनालायझर (२० गिगा हर्ट्झ क्षमतेचे), कॅड फेको सॉफ्टवेअर आणि पीसीबी प्रोटोटाइप मशीन याबाबत माहिती दिली. शैक्षणिक अधिष्ठाता व सिव्हील इंजिनिअरिंगचे विभागप्रमुख डॉ. प्रशांत पवार यांनी संशोधन क्षेत्रातील होत असलेली प्रगती

बाबत मार्गदर्शन केले. ही कार्यशाळा आठवडाभर चालणार असून इलेक्ट्रॉनिक्स क्षेत्रातील नामवंत संशोधक मार्गदर्शन करणार आहेत. यावेळी संशोधन विभागाचे अधिष्ठाता डॉ. एस. आर. पाटील, इलेक्ट्रॉनिक्स अँड टेलिकम्युनिकेशन

स्वेरीच्या इलेक्ट्रॉनिक्स अँड टेलिकम्युनिकेशन इंजिनिअरिंग विभागात शॉर्ट टर्म ट्रेनिंग प्रोग्रामचे उदघाटन करताना अनिरुद्ध कुलकर्णी रेडीओ फ्रिक्वेन्सी (आर.एफ.) डीझाईन इंजिनिअर अनिरुद्ध कुलकर्णी सोबत डावीकडून कार्यशाळेचे समन्वयक प्रा. महेश मठपती, विभागप्रमुख डॉ. अनुप विभूते, शैक्षणिक अधिष्ठाता व सिव्हील इंजिनिअरिंगचे विभागप्रमुख डॉ. प्रशांत पवार व संशोधन विभागाचे अधिष्ठाता डॉ. एस. आर. पाटील आदी.

इंजिनिअरिंगचे पदवी व पदविकेचे विद्यार्थी व प्राध्यापक उपस्थित होते. सुत्रसंचालन प्रा. नीता कुलकर्णी यांनी केले तर आभार इलेक्ट्रॉनिक्स अँड टेलिकम्युनिकेशन इंजिनिअरिंगचे विभागप्रमुख डॉ. अनुप विभूते यांनी मानले.

INVITATION LETTER TO GUEST



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



Ref: COEPR/ENTC/2019-20/08(b)

Date : 19-11-2019

To,

Anirudha S. kulkarni

RF Labs Pune

Subject: Invitation as resource person for one week STTP.

Respected Sir,

Shri Vithal Education and Research Institute (SVERI), Acharitable trust formed by devoted technocrats, established its first Project, The SVERI's College of Engineering, Pandharpur in 1998, which is approved by AICTE, New Delhi. It has been affiliated to PAH Solapur University, Solapur. The Engineering College is ISO 9001:2015 certified and institute is accredited by NBA, New Delhi and NAAC.

The Department of Electronics & Telecommunication Engineering was established in the year 1998. The department has Qualified and Dedicated Faculty Members with specialization in various areas. Department of E&TC has UG(Intake-120), PG (Intake-18) and Ph.D. programs. Department has 10 well-equipped labs out of which antenna lab is having VNA of 20GHz, CADFEKO software, and PCB Prototype machine. Considering our state of art laboratory for antenna, department has decided to extend this facility through One Week Short Term Training Program on "Recent Developments in antenna Design, Fabrication and Testing" from 26th to 30th December 2019".

The goal is to present a comprehensive program on different antenna designs (Microstrip Antenna, Multifunction antennas and arrays, Fractal antenna) and to realize their parameters in actual practice. The calculation of antenna dimensions will be overviewed. Design and simulation will be performed by using CADFEKO software and measured using VNA. The speakers for the session are from industry and academics.

Its pleasure and privilege to invite you as a recourse person for the same and guide the participants with your expertise on 26.12.2019. So, I request you to kindly consider and give me consent for the same.

Received
Anirudha

HOD ENTC

HEAD

Dept. of Electronics & Telecom. Engg.
Pandharpur

THANKS LETTER TO GUEST



Shri Vithal Education & Research Institute's

COLLEGE OF ENGINEERING, PANDHARPUR

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

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Date: 26/12/2019

Department of Electronics and Telecommunication Engineering

To,

Anirudha S. kulkarni
RF Labs Pune.

Subject: Thanks Letter

Respected sir,

This is to express our heartfelt gratitude towards you for accepting invitation as recourse person for One Week Short Term Training Program on **"Recent Developments in antenna Design, Fabrication and Testing" from 26th to 30th December 2019**." on 26th December, 2019.

Your valuable guidance will always keep the students inspiring & motivating.

I request the same kind of co-operation in future also.

Thankyou,

Yours faithfully,

Dr. A. S. Vibhute

HOD ENT

HEAD

Dept. of Electronics & Telecom. Eng.
S. Q. R. Pandharpur

*Received
Anirudha*

FEEDBACK FORM SAMPLES

SVERIs COE, Pandharpur
Electronics and Telecommunication Engineering Department

FEEDBACK FORM

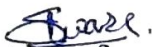
Title of the Program:-“Recent developments in Antenna Design, Fabrication and Testing”

Name of the Participant:- Milare Saroja Shammao .

Date:-26th Dec to 30th Dec 2019

| Particular | Excellent | Good | Satisfactory | Poor |
|--------------------------------------|-----------|------|--------------|------|
| Course content | ✓ | | | |
| Course material | ✓ | | | |
| Presentation | ✓ | | | |
| Duration | ✓ | | | |
| Faculty | ✓ | | | |
| General Arrangement | ✓ | | | |
| Hospitality | | ✓ | | |
| Timing of the programme | ✓ | | | |
| Usefulness of the programme | ✓ | | | |
| Any other Suggestion for improvement | | | | |

Date: 30/12/2019


Signature of participant

SVERIs COE, Pandharpur
Electronics and Telecommunication Engineering Department

FEEDBACK FORM

Title of the Program:-“Recent developments in Antenna Design, Fabrication and Testing”

Name of the Participant:- Snehal B. Kamble

Date:-26th Dec to 30th Dec 2019

| Particular | Excellent | Good | Satisfactory | Poor |
|--------------------------------------|-----------|------|--------------|------|
| Course content | ✓ | | | |
| Course material | ✓ | | | |
| Presentation | ✓ | | | |
| Duration | ✓ | | | |
| Faculty | ✓ | | | |
| General Arrangement | ✓ | | | |
| Hospitality | ✓ | | | |
| Timing of the programme | ✓ | | | |
| Usefulness of the programme | ✓ | | | |
| Any other Suggestion for improvement | No. | | | |

Date: 30/12/2019

Snehal B. Kamble
Signature of participant
Snehal Bhaskar Kamble



Shri Vishal Education & Research Institute's
College of Engineering, Pandharpur
In Association With Solapur
Punyashlok Ahilyadevi Holkar Society
Organized
Department of Electronics & Telecommunication Engineering
Welcome You
For
Week Short Term Training Program
On
Antenna Design, Fabrication & Testing
to 30th December 2019









FINAL PRODUCT

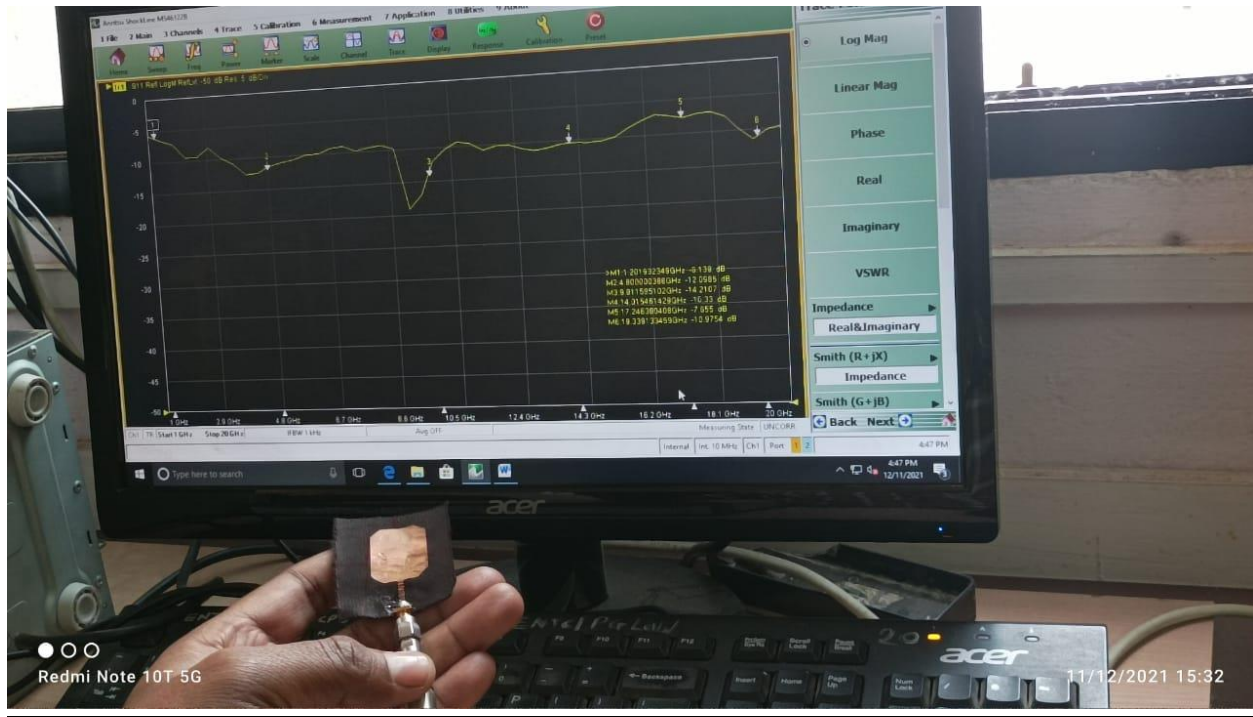


Fig. Variable Antenna for Wi-Fi, Ultra Wideband and 5G Communication

Experiential Learning through Technical Symposium

- **Individual Participation**
- **Team Work**
- **Activity Planning & Management**
- **Communication Effectively**

TECHNICAL SYMPOSIUM

```
graph TD; TS[TECHNICAL SYMPOSIUM] --> R1[ ]; R1 --> ASHRAE[ASHRAE  
(American Society of Heating, Refrigerating and Air-Conditioning Engineers)]; R1 --> OLYMPUS[OLYMPUS  
A National Level Technical Event]; R1 --> VSA[Various Student Associations]; VSA --> R2[ ]; R2 --> CESA[CESA  
Civil Engineering Students Association]; R2 --> EESA[EESA  
Electrical Engineering Students Association]; R2 --> MESA[MESA  
Mechanical Engineering Students Association]; R2 --> ICON[ICON  
In-Search of Computer Oriented Knowledge]; R2 --> ELITE[ELITE  
Electronics Latent In Technical Endeavor]; MESA --> KSHITIJ[KSHITIJ  
A Technical Event];
```

ASHRAE

(American Society of Heating, Refrigerating and Air-Conditioning Engineers)

OLYMPUS

A National Level Technical Event

Various Student Associations

CESA

Civil Engineering Students Association

EESA

Electrical Engineering Students Association

MESA

Mechanical Engineering Students Association

ICON

In-Search of Computer Oriented Knowledge

ELITE

Electronics Latent In Technical Endeavor

KSHITIJ

A Technical Event



SVERI - ASHRAE Students Chapter

ESTABLISHMENT

ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) is a global technical society that provides essential resources for sustainable design, construction and operation of buildings and their systems. SVERI's College of Engineering has established its ASHRAE student chapter on 26th March 2019.

CHAPTER BODY

Total

| Post | Name |
|------------------------------|-----------------------|
| Student Branch Adviser (SBA) | Prof. Digvijay Ronge |
| Branch Guide | Prof. Sachin Gavali |
| President | Mr. Sagar Khade |
| Vice-President | Mr. Pranav Bhandare |
| Treasurer | Ms. Shraddha Gajakosh |

number of ASHRAE members under the branch: **32**

Local Chapter: Pune

Student Activity Chair: Prof. Kamalnath Ghosh

ACTIVITIES

1. Regular meetings were conducted in which oath ceremony of various posts, members introduction, planning for industrial visits & technical events were made.
2. A session by branch President Mr. Sagar Khade was conducted to make members familiar with HVAC&R industry and basic fundamentals used.
3. Industry person interaction with Mr. Suhas Deshpande, an ASHRAE fellow and member of SVERI innovation council, who gave suggestions on effective working of branch.
4. The **ASHRAE Undergraduate Program Equipment Grant Program** provides grants to engineering, technical and architectural schools worldwide. We had received grant of \$3000 for '**Performance study of solar powered cold room system (SPCR) using phase change materials**' in AY 2021-2022.
5. During the COVID-19 pandemic lockdown period, various ASHRAE chapters around the globe had arranged online seminars/webinars. SVERI ASHRAE student chapter had actively participated in **29** webinars till date and students are interested in upcoming webinars too.

BENEFITS OF BECOMING ASHRAE MEMBER

- Society and chapter-level scholarships for engineering students

Become an ASHRAE member – join.ashrae.org



SVERI - ASHRAE Students Chapter

- Reduced registration to ASHRAE Annual and Winter Conferences.
- The annual Student Design Project Competition
- Undergraduate Program Equipment Grants fund colleges and universities worldwide to promote the study and teaching of HVAC&R.
- Grants-in-Aid allow for graduate students to continue their education in the HVAC&R industry.



ASHRAE Equipment Grant

Professor Digvijay <ddronge@coe.sveri.ac.in>

ASHRAE Undergraduate Program Equipment Grant

Thomson, Katie <KThomson@ashrae.org>

Tue, Mar 2, 2021 at 10:15 PM

To: "ddronge@coe.sveri.ac.in" <ddronge@coe.sveri.ac.in>

Cc: "sanelac.consultants@gmail.com" <sanelac.consultants@gmail.com>

March 2, 2021

Dear Digvijay Ronge,

Congratulations! Your submission to ASHRAE's Undergraduate Program Equipment Grant titled, "Performance study of solar powered cold room system (SPCR) using phase change materials" was approved for funding in the amount of \$3000 to SVERI's College of Engineering Pandharpur.

Before we can process your request, we require you to review the attached Award Information Sheet, which you submitted with your application. Please indicate whether the information is still current and the grant funds are still required. Also, please complete the attached Award Information Sheet and return it with any corrections to your application by **April 30, 2021**.

The Student Activities Chair of the ASHRAE Chapter in your area is copied on this email and he/she should contact you directly for a certificate/award presentation. **However, this will not be a presentation of funds since your check will be mailed in July directly to the individual you indicate on the Award Information Sheet.** If you have any questions, please contact Katie Thomson, Assistant Manager, Student Activities, at 678-539-1212 or by e-mail at kthomson@ashrae.org.

As a reminder, the students involved in the project receiving the grant funds must submit a written report to ASHRAE upon the project's completion. A project spanning more than one semester/quarter must submit a progress report at the end of each semester/quarter. Delinquent reports will disqualify you from obtaining grants in the future; therefore, if your report is going to be submitted late, please contact the Assistant Manager, Student Activities. Details on the interim and final report format are listed on the Student Zone website in the Grants section.

Again, congratulations! We look forward to an opportunity to work with you and your students.

Sincerely,

Megan Tosh

Megan Tosh

2020-21 Chair, Student Activities Committee



Shaping Tomorrow's
Built Environment Today

ashrae.org

Katie Thomson
Assistant Manager of Student Activities

We've moved! Please note our new address:

180 Technology Parkway
Peachtree Corners, GA 30092

Tel: 678-539-1212

KThomson@ashrae.org

ashrae.org/newhq



2 attachments



2021 Award Information Sheet.docx

264K



50 - SVERI's College of Engineering.docx

872K

OLYMPUS 2K18

A NATIONAL LEVEL TECHNICAL SYMPOSIUM

MECHANICAL

Robo Race
Lathe War
AUTOCAD Race
CATIA Race
Techno-Mech War

ENTC

Circuit Blueprint
Proteus War
M Code- Microcontroller
M Code- MATLAB
Robo War

15th & 16th Sept. 2K18

For online Registration and
more information- Visit
<http://olympus.sveri.ac.in>



CIVIL

FABRICA
CAD Race
Bridge Design
Town Planning
Survey Hunt

CSE & IT

Web Design
Code Debugging
Blind C
Techno-Guru
DB-Mania
LAN Planet

Hon. Dr. B. P. Ronge
(Principal & Founder Secretary)

Prof. S. N. Kulkarni
(Vice-Principal)

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

Mr. Sidharth Upase
(President)
(9730974956)

Prof. D. T. Kashid
(Institute Co-ordinator)
(9168655335)

Ms. Dipanwita Deb
(Secretary)

Ms. Aishwarya Masal
(Joint Secretary)

Mr. Nitin Kadam
(Treasurer)
(7387419153)

Mr. Dnyanraj Telang
(Treasurer)
(7028377996)



COMMON EVENTS

PAPERFEST
IDEA War
CAT-MAT Ability
Blind Driving

Business Plan
ADD-ZAP
C.R.P.
Treasure Hunt

STAFF COORDINATORS

| | | |
|-----------------------|-------|------------|
| Prof. S. M. Kale | MECH | 9168655344 |
| Prof. M. S. Mathpati | ENTC | 9503019997 |
| Prof. S. M. Kumbhar | CSE | 9886396500 |
| Prof. M. H. Malipatil | CIVIL | 9731795353 |

Tez



9730974956

 SVERI OLYMPUS 2K18

FREE  **Free WIFI in Campus**



Address- SVERI's College of Engineering Pandharpur, P.B. No. 54, Gopalpur-Ranjani Road,
Gopalpur, Pandharpur, Dist - Solapur 413 304.

web- coe.sveri.ac.in



Olympus Notice



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 9001-2015 Certified Institute, Accredited by NBA, NAAC & Institute of Engineers, India
E-mail : coe@sveri.ac.in Website: www.sveri.ac.in



NOTICE

Date: - 26/07/2018

Professional chapters ISTE along with Departmental Student Associations for Mechanical Engineering (MESA), Computer Science and Engineering (ICON), Civil Engineering (CESA) and Electronics and Telecommunication engineering (ELITE) is going to organize National Level Event this year also, by the name **OLYMPUS-2K18**.

The students who are interested for the positions of President, Secretary, Jt. Secretary & Treasurer for OLYMPUS 2K18 for process of making the event successfully can submit application to the respective departmental staff coordinators **on or before 31st July 2018**. Applications may be submitted for one or more of the following posts. However, one student will be offered only one post.

All the students who are going to apply for the positions of President, Secretary, Jt. Secretary & Treasurer for OLYMPUS 2K18 are here by informed to bring original marks list, original certificates of all curricular and extracurricular activities to the interviews.

| Sr. No. | Post | Vacancy |
|---------|----------------------------------|---------|
| 1. | President for OLYMPUS 2K18 | 1 |
| 2. | Secretary for OLYMPUS 2K18 | 1 |
| 3. | Joint Secretary for OLYMPUS 2K18 | 1 |
| 4. | Treasurer for OLYMPUS 2K18 | 1 |

After receiving all the applications from the students for different posts of Olympus 2k18 as mentioned above the interviews will be held on as per the details given below.

Date:- 02/08/2018

Timing:- 4.30pm onwards

Venue:- Board Room, Mechanical Engg. Dept.

All the concerned are informed and act accordingly

Dashid
(Prof. D.T. Kashid)

Institute Coordinator, OLYMPUS-2K18

Dr. A. A. Utpat

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

Copy to:

1. All Deans
2. All HODs
3. Departmental ISTE Coordinators
4. College Notice Boards
5. FTP
6. Office Copy.



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E-mail : coe@sveri.ac.in Website: www.sveri.ac.in



Date: - 03/08/2018

NOTICE

It is hereby informed to all concerned that the following are the details of the final selection to the various posts of OLYMPUS 2K18.

| Sr. No. | Post | Name of Student | Class |
|---------|-----------------|---------------------|-------------|
| 1. | President | Mr. Siddharth Upase | B.E.(ENTC) |
| 2. | Secretary | Ms. Dipanwita Deb | B.E.(CSE) |
| 3. | Joint Secretary | Ms. Aishwarya Masal | T.E.(CIVIL) |
| 4. | Treasurer | Mr. Nitin Kadam | B.E.(MECH) |
| | | Mr. Dnyanraj Telang | |

All the concerned are requested to take the note and act accordingly.



(Prof. D.T. Kashid)

Institute Coordinator, OLYMPUS-2K18



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

Copy to:

1. Principal
2. Vice-Principal
3. All Deans
4. All HODs
5. Departmental ISTE Coordinators
6. College Notice Boards
7. FTP
8. Office Copy.



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E-mail : coe@sveri.ac.in Website: www.sveri.ac.in



Date: - 20/08/2018

NOTICE

All the students who are interested in working as Heads / Coordinators for the events / committees attached herewith of "OLYMPUS 2K18" for making the event successful, can submit application to the respective departmental staff coordinators **on or before 24th August 2018**. Applications may be submitted for one or more of the following posts. However, one student will be offered only one post.

All the students who are going to apply for the positions of Heads / Coordinators for the following events / committees of OLYMPUS 2K18 are hereby informed to bring original marks list, original certificates of all curricular and extracurricular activities to the interviews.

After receiving all the applications from the students for positions of Heads / Coordinators of Olympus 2k18, the interviews will be held on as per the details given below.

Date: - 25/08/2018

Timing: - for ENTIC & CIVIL-5.30 pm onwards, MECH & CSE-4:30 pm onwards

Venue: - Respective Departments


All the concerned are informed and act accordingly.

Departmental Staff Coordinators:-

1. Prof. S. M. Kale- Mech Dept.
2. Prof. S. M. Kumbhar - CSE Dept.
3. Prof. M. S. Mathpati - ENTIC Dept
4. Prof. M. H. Malipatil- Civil Dept.


(Prof. D.T. Kashid)

Institute Coordinator, OLYMPUS-2K18


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

Copy to:

1. All Deans
2. All HODs for effective circulation amongst classes.
3. Departmental ISTE Coordinators
4. College Notice Boards
5. FTP
6. Office Copy.

| Sr. No. | Event / Committee | Department | Heads | Coordinators |
|---------|--|------------|----------------|----------------|
| 1. | PAPERFEST (Paper Presentation) | All | 2 (Each Dept.) | 4 (Each Dept.) |
| 2. | IDEA War | All | 2 (Each Dept.) | 4 (Each Dept.) |
| 3. | CAT-MAT Ability (General Quiz) | All | 1 (Each Dept.) | 4 (Each Dept.) |
| 4. | Robo-Race | Mech | 2 | 12 |
| 5. | Lathe War | Mech | 2 | 10 |
| 6. | Blind Driving | Mech | 2 | 8 |
| 7. | CATIA Race | Mech | 2 | 8 |
| 8. | Techno- Mech War | Mech | 2 | 8 |
| 9. | AutoCAD Race | Mech | 2 | 8 |
| 10. | Circuit Blueprint | ENTC | 2 | 8 |
| 11. | Proteus War | ENTC | 2 | 8 |
| 12. | M Code -Microcontroller | ENTC | 2 | 6 |
| 13. | M Code - MATLAB | ENTC | 2 | 6 |
| 14. | LAN Planet-NFS | CSE & IT | 1 | 6 |
| 15. | LAN Planet-Counter Strike | CSE & IT | 1 | 6 |
| 16. | FABRICA | Civil | 2 | 8 |
| 17. | CAD Race | Civil | 2 | 8 |
| 18. | Bridge Design | Civil | 2 | 8 |
| 19. | Town Planning | Civil | 2 | 8 |
| 20. | Survey Hunt | Civil | 2 | 8 |
| 21. | Robo War | ENTC | 2 | 10 |
| 22. | Web Design | CSE & IT | 2 | 8 |
| 23. | Code Debugging | CSE & IT | 2 | 8 |
| 24. | Blind C | CSE & IT | 2 | 8 |
| 25. | Techno-Guru (CSE Quiz) | CSE & IT | 2 | 8 |
| 26. | DB-Mania | CSE & IT | 2 | 8 |
| 27. | Business Plan | MECH | 2 | 8 |
| 28. | ADD-ZAP | All | 2 | 6 |
| 29. | C.R.P. (Campus Recruitment Program) | All | 2 (Each Dept.) | 4 (Each Dept.) |
| 30. | Treasure Hunt | All | 2 | 10 |
| 31. | Agro-Challenge | MECH | 2 | 10 |
| 32. | Registration Committee (/Prof. G. A. Fattepurkar) | All | 5 (Each Dept.) | |
| 33. | Kit preparation & distribution Committee (Prof. D.P. Narsale) | All | 4 (Each Dept.) | |
| 34. | Accommodation Committee (Prof. A. M. Kasture) | All | 4 (Each Dept.) | |
| 35. | Food Committee (Prof. S. M. Khomane) | All | 5 (Each Dept.) | |
| 36. | Certificate distribution committee (Prof. A. B. Chounde) | All | 8 | |
| 37. | Prize list Collection & Prize, Medal Distribution Committee (Prof. J. D. Bokeshode) | All | 5 | |
| 38. | Announcements Committee (Prof. Pooja Taralgatti) | All | 4 | |
| 39. | Discipline Committee (Dr. R. R. Gidde) | All | 10 | |

Dr. D.T. Kashid
(Prof. D.T. Kashid)

Institute Coordinator, OLYMPUS-2K18

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

Olympus Office Order



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's COLLEGE OF ENGINEERING, PANDHARPUR

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Date: 18-08-18

OFFICE ORDER

ISTE Students' Chapter and Departmental Students' Associations Viz. MESA, ELITE, ICON and CESA are organizing National Level Technical Symposium, **Olympus-2K18 on September, 15th and 16th**. The following committees have been constituted for the organization and smooth functioning of Olympus 2K18.

| Sr. No. | Name of the committee | Name of the member | Department | Contact No. |
|---------|---------------------------|--|------------|-------------|
| 1. | Management Representative | Prof. C. B. Nadagouda (Chairman, SVERI) | - | - |
| | | Shri. D. D. Ronge (Trustee Member, SVERI) | - | - |
| 2. | Overall organization | Dr. B. P. Ronge (Founder Secretary & Principal, SVERI), Chairman | Mech. | 9545193434 |
| | | Prof. S. N. Kulkarni (Vice- Principal), Co-Chairman | Mech. | 9822356199 |
| | | Dr. S. M. Mukane (Dean, Administration) | ENTC | 9545552899 |
| | | Dr. P. M. Pawar (Dean, Academics) | Civil | 9763394205 |
| | | Dr. A. A. Utpat (Dean, Students') | Mech | 9158325055 |
| | | /Dr. M. M. Patil (Dean, R&D) | ENTC | 9545553654 |
| | | Dr. M. K. Raul (Dean, TPPI) | T&P | 9545553881 |
| | | Dr. P. S. Kachare (Dean, Admissions, Publicity & Protocol) | Mech | 9545553774 |
| | | Prof. D.T. Kashid (Institute Coordinator, Olympus 2k18) | Mech | 9168655335 |
| | | Prof. S. M. Kale (Departmental ISTE Coordinator) | Mech | 9163655344 |
| | | Prof. S. M. Kumbhar (Departmental ISTE Coordinator) | CSE | 8445738769 |
| | | Prof. M. S. Mathpati (Departmental ISTE Coordinator) | ENTC | 9740212330 |
| | | Prof. M. H. Malipatil (Departmental ISTE Coordinator) | Civil | 9731795353 |
| | | Prof. A. K. Parkhe (Staff Coordinator, MESA) | Mech | 9503632622 |

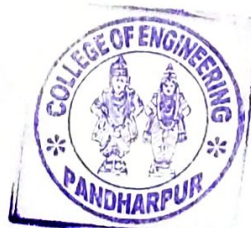
Do not
07/19



B. Ronge

| Sr. No. | Name of the committee | Name of the member | Department | Contact No. |
|---------|---|--|------------|-------------|
| 2. | Overall organization | Prof. Mr. N. S. Mane (Staff Coordinator, ICON) | CSE | 8975405767 |
| | | Prof. Ms. S.A. Shegdar (Staff Coordinator, ICON) | CSE | 8600452729 |
| | | Prof. S. S. Allagi (Staff Coordinator, CESA) | Civil | 9110627406 |
| | | Prof. Akshay Jadhav (Staff Coordinator, ELITE) | ENTC | 9552690535 |
| 3. | Alumni Representative | Shri. Amol Deshpande (Sr. Manager, Walchandnagar Industries, Walchandnagar) | - | - |
| 4. | Parent Representative | Shri. Vasudev Gaikwad (A/P-Chale, Tal-Pandharpur, Dist-Solapur) | - | - |
| | | Shri. Balasaheb Chavan (A/P-Suste, Tal-Pandharpur, Dist-Solapur) | - | - |
| 5. | Guest receiving, accompanying & Welcome | Principal, Vice-Principal, All Deans & All HODs | - | - |
| 6. | Paper Fest (Paper Presentation) | Prof. S. V. Jadhav (Coordinator) | Mech | 9757571857 |
| | | Dr. S.B. Salunkhe | Mech | 9637335111 |
| | | Dr. R. R. Gidde | Mech | 9922607633 |
| | | Prof. Y. R. Kalshetty (Coordinator) | CSE | 9545553836 |
| | | Prof. S. A. Gosavi (Coordinator) | Civil | 9746367210 |
| | | Prof. M .S. Mathpati (Coordinator) | ENTC | 9740212330 |
| | | /Prof. N .S. Patil | ENTC | 9275266638 |
| 7. | IDEA WAR | Prof. S. B. Patil (Coordinator) | Mech | 8600056458 |
| | | /Prof. Dhanashri Patil | CSE | 8695796168 |
| | | /Prof. K. V .Gidde | ENTC | 7249345543 |
| | | Mr. M. G. Deshmukh | CIVIL | 9448258729 |
| 8. | ROBORACE | Prof. V. R. Chavan | Mech | 9890455735 |
| | | Prof. C. C. Jadhav (Coordinator) | Mech | 8308689570 |
| 9. | LATHE-WAR | Prof. K.V. Chandan (Coordinator) | Mech | 8097060528 |
| | | Prof. U. L. Anuse | Mech | 9168655365 |
| | | Mr. Ganesh Jagtap | Workshop | 9881551405 |
| 10. | AGRO-Challenge | Prof. K. S. Pukale | Mech | 7776070913 |
| | | Prof. S. S. Kakade (Coordinator) | Mech | 9421033397 |
| | | Prof. S. S. Wangikar | Mech | 9657720923 |
| 9. | Blind Driving | Prof. S. S. Jadhav (Coordinator) | Mech | 8055836682 |
| | | Prof. S.Y. Salunkhe | Mech. | 9657198329 |
| 10. | C.R.P. (Campus Recruitment Process) | Prof. Mr. N. S. Pandhare | T&P | 9421363454 |
| | | Prof. Mr. S. G. Padwale (Coordinator) | T&P | 8668867387 |
| | | Prof. Pirjade | T&P | 7033178770 |
| 11. | CATIA RACE | Dr. A. B. Shinde (Coordinator) | MECH | 9503103804 |
| | | Prof. A. K. Parkhe | Mech | 9503632622 |

Basid
OTK



B. R. Rongle

| Sr. No. | Name of the committee | Name of the member | Department | Contact No. |
|---------|--------------------------------|---|------------|-------------|
| 12. | AUTO-CAD RACE | Prof. S. J. Shinde (C) | Mech. | 9168655323 |
| 13. | Bridge Design | Prof. A. K. Parkhe | Mech | 9503632622 |
| | | Prof. S. M. Mali | CIVIL | 9545541576 |
| 14. | WEB Design | /Prof. V. S. Kshirsagar (Coordinator) | CIVIL | 9545553884 |
| | | Prof. Ms. S. S. Kadam (Coordinator) | CSE | 9766880771 |
| | | Prof. Ms. P. S. Doshi | CSE | 9511696931 |
| 15. | Circuit Blueprint | Prof. Mrs. J. S. Shinde (Coordinator) | EXTC | 9545553667 |
| 16. | CAT-MAT ability (General quiz) | /Prof. D. D. Pujari (Coordinator) | EXTC | 9561247819 |
| | | /Prof. L. A. Palange | EXTC | 9960471684 |
| | | Prof. B.T. Gadade | Mech | 9168655398 |
| | | Prof. Mr. N. M. Maske | CSE | 7020805643 |
| 17. | LAN Planet (NFS & CS) | Prof. Mr. S. S. Bansode (Coordinator) | CSE | 9673143155 |
| | | Prof. G. V. Kakade | CSE | 9172035632 |
| | | Prof. Mr. R. B. Kagade | CSE | 9975382223 |
| 18. | Techno-Guru | Prof. Ms. Minal Pawar (Coordinator) | CSE | 8806632681 |
| | | Mrs. S. S. Bhosale (Coordinator) | CSE | 9503103814 |
| 19. | DB-Mania | Prof. Mr. S. M. Shinde | CSE | 9545553846 |
| | | /Prof. Ms. A. Pathan (Coordinator) | CSE | 7888170603 |
| | | /Prof. R. G. Sache (Coordinator) | CSE | 9175687828 |
| 20. | Treasure Hunt | Prof. M.S. Survase | Civil | 8806660537 |
| | | Prof. S. G. Chavan | Mech | 9512534802 |
| | | /Prof. S. Patil | EXTC | 9890330584 |
| 21. | ADD-ZAP | /Prof. Ms. Pallavi Jadhav (Coordinator) | EXTC | 7776989626 |
| | | Prof. N. S. Shaikh | FE | 9764793186 |
| | | Prof. M. M. Shinde | CSE | 7709669202 |
| 22. | FABRICA | Prof. A. B. Kokare | Civil | 9766129169 |
| | | Prof. Ram V. Patil (Coordinator) | Civil | |
| 23. | CAD RACE | Prof. S. S. Allagi | Civil | 8904305133 |
| | | /Prof. S. C. Bagal (Coordinator) | Civil | 7020233326 |
| 24. | Town Planning | Prof. R. H. Sule | Civil | 8149226457 |
| | | Prof. M. H. Malipatil (Coordinator) | Civil | |
| 25. | Techno- Mech War | /Prof. P. K. Patil (C) | Mech | 7709211899 |
| | | /Prof. P. A. Shaikh | Mech | |
| 26. | SURVEY HUNT | Prof. Swapnil Patil (Coordinator) | Civil | 9637819102 |
| | | /Prof. S. P. Patil | Civil | 9922647936 |
| 27. | ROBO-WAR | Prof. Akshay Jadhav | ENTC | 9552690535 |
| | | Dr. N. B. Bahadure (Coordinator) | ENTC | 7898635521 |
| 28. | BUSINESS PLAN | Prof. B. D. Gaikwad (Coordinator) | Mech | 9545553790 |
| 29. | CODE DEBUGGING | Prof. Mr. G. G. Patil (Coordinator) | CSE | 9168655388 |
| 30. | Blind C | Prof. L. H. Jadhav | CSE | 8600288348 |
| | | Prof. A. S. Chavan (Coordinator) | CSE | 9730935655 |

D. D. Pujari
(CJTIC)



B. Range

| Sr. No. | Name of the committee | Name of the member | Department | Contact No. |
|---------|---|--|--------------|-------------|
| 31. | Microcontroller | Prof. Jagdish Hallur (Coordinator) | EXTC | 9975090344 |
| 32. | MATLAB | Prof. M A Deshmukh | ENTC | 9970277150 |
| 33. | Proteus War | /Prof. S. J. Machale(Coordinator) | ENTC | 9421393138 |
| 34. | Office Committee | Prof. J. N. Mohite (Coordinator) | ENTC | 9881972414 |
| | | Prof. D. T. Kashid (Coordinator) | MECH | 9168655335 |
| | | Mr. D. T. Gaikwad | Mech | 8806879125 |
| | | Mr. P. Kulkarni | Mech | |
| | | Mr. Jotiram Pawar | Mech | |
| 35. | Welcome, Valedictory, Jallos, Felicitation Stage Decoration committee | Prof. K. B. Patil (Coordinator) | MBA | 9595921154 |
| | | Prof. Y. M. Khedkar | Mech | 9545553699 |
| | | & All Cultural committee members | | |
| | | Mr. P. C. Waghmare | CSE | 9545553676 |
| | | Mr. R. K. Ambure | CSE | 9637715298 |
| 36. | Accommodation Committee | Prof. A. M. Kasture (Coordinator) | EXTC | 9403182922 |
| | | /Prof. Ms. A. S. Singh | EXTC | 8806642068 |
| | | Prof. S.V. Darshane | CSE | 9096552771 |
| | | Prof. S. B. Bhosale | Mech | 9545553814 |
| | | /Prof. Ms. S. V. Babar | CSE | 9422423653 |
| | | /Samarthini B .M. | Civil | 7338067545 |
| 37. | Food Committee | Prof. S. M. Khomane (Coordinator) | Mech | 9168655329 |
| | | Prof. S. A. Inamdar | ENTC | 9922818946 |
| | | Mr. R. D. Kapase | Civil | 8605772236 |
| | | /Prof. Ms. Mohua Biswas | EXTC | 7709650013 |
| | | /Prof. R. R. Shinde | CSE | 7588019374 |
| | | Mr. Jotiram Pawar | Mech | 9503103882 |
| | | Mr. R. K. Ambure | CSE | 9637715298 |
| 38. | Pendol Arrangement Committee | Prof. V. S. Bhong (Coordinator) | EXTC | 9960224232 |
| | | Prof. H. K. Bhaladar (Coordinator) | E&TC | 9095615501 |
| | | Prof. Omkar R. Sawant | CIVIL | 9021681374 |
| 39. | Certificate Distribution Committee | Prof. A. B. Chounde (Coordinator) | ENTC | 7767003419 |
| | | Dr. R. N. Haridas | FE | 9921404894 |
| | | /Prof. Ms. S. S. Kadam | EXTC | 8698026990 |
| | | /Prof. M. S. Lotake | EXTC | 9766230693 |
| 40. | Medal Purchase ,Prize list Collection & Prize Distribution Committee | Prof. J. D. Bokephode (Coordinator) | CSE | 9730154777 |
| | | Prof. V. R. Payghan | Civil | 9049636364 |
| | | /Prof. M. J. Goski | ENTC | 7721087813 |
| | | /Prof. Ms. S. A. Shegdar | CSE | 8600452729 |
| 41. | Publicity Committee | Prof. Mr. S. C .Halkude (Coordinator) | Non-Teaching | 9545553628 |
| | | Prof. D.T. Kashid | Mech | 9168655335 |
| 42. | Kit Preparation & Distribution Committee | Prof. Mr. D.P. Narsale (Coordinator) | EXTC | 8605252526 |
| | | Prof. O. L. Mahajan | MECH | 7709850113 |
| | | /Prof. N .S. Patil | EXTC | 8275266638 |
| | | Mr. P. B. Bhaganagare | Civil | 9766223522 |
| | | /Prof. A. V. Malage | F.E. | 9527827715 |

Delid
CPT



B. Ronge

| Sr. No. | Name of the committee | Name of the member | Department | Contact No. |
|---------|--|--|-------------|-------------|
| 43. | Judges and Guest Remuneration Committee | Prof. Mr. L. B. Raut (Coordinator) | Mech | 9637238869 |
| 44. | Poster, Certificate & Banner Designing & printing | Prof. S. S. Gaikwad (Coordinator) | Mech | 7709897135 |
| | | Prof. Mr. A. A. Mote | Mech | 9009944017 |
| 45. | Advertisement Committee (Calling & convincing other state participants for Olympus 2k18) | Prof. Prabhakar Jha (Coordinator) | MECH | 8169731968 |
| | | Prof. J. S. Hallur | EXTC | 9975090344 |
| | | Prof. Shrivankumar | FE | |
| | | /Prof. Ms. A. Pathan | CSE | 7888170603 |
| | | Prof. S. R. Limkar | Civil | 9511786548 |
| 46. | Olympus Website designing, updating & publication | Prof. P. G. Gaikwad (Coordinator) | CSE | 8275025180 |
| | | Prof. Antosh Dyade | CSE | 9545553445 |
| 47. | Announcements Committee | /Prof. Pooja Taralgatti (Coordinator) | Civil | 9665570392 |
| | | Prof. Ms. Pol | MBA | |
| | | Ms. V. M. Ghadage | Office | 9503103757 |
| 48. | Electric Supply | Mr. S. G. Jadhav and team | Electrician | 9545553627 |
| 49. | Rangoli Committee | /Prof. S. S. Kangale (Coordinator) | FE | |
| | | /Prof. Ms. V. G. Kalebag | Mech | 8600834998 |
| | | Mr. Vithal Jadhav | Store | |
| 50. | Stationary | Mr. S. M. Bagal (Coordinator) | Librarian | |
| | | Mr. Suhas Tagare | Store | |
| | | Mr. Vithal Jadhav | Store | |
| 51. | Transportation Facility arrangement | Mr. S. M. Bagal | Librarian | |
| | | Prof. Omkar R. Sawant (Coordinator) | CIVIL | 9021681374 |
| 52. | Registration Committee | /Prof. G. A. Fattepurkar (Coordinator) | CSE | 9890909463 |
| | | Prof. Mr. S. D. Bhosale | Mech | 9503103805 |
| | | Prof. G. V. Kakade | CSE | 9172035632 |
| | | /Prof. Ms. N. P. Kulkarni (Coordinator) | ENTC | 9823601809 |
| | | /Prof. M. J. Goski | ENTC | 7721087813 |
| 53. | Seating Arrangement & Attendance Committee for Inauguration and Valedictory | Prof. G. R. Shaikh (Coordinator) | CSE | 7843088305 |
| | | Prof. A. S. Chavan | CSE | 9730959655 |
| | | Mr. M. G. Deshmukh | CIVIL | 9448258729 |
| | | All Class Coordinators & All proctor Teachers' | | |

Radid
(DTK)



B-Range

| Sr. No. | Name of the committee | Name of the member | Department | Contact No. |
|---------|--|--|-------------|-------------|
| 54. | Discipline Committee | Prof. R. R. Gidde & His Team | Mech. | 9922607633 |
| | | Prof. P.G. Gaikwad | CSE | 8275025180 |
| | | Dr. A. A. Utpat | Mech | 9158325055 |
| | | Dr. P. M. Pawar | Civil | 9765394205 |
| | | Dr. S. M. Mukane | ENTC | 9545552899 |
| | | Prof. M. M. Pawar | Civil | 9545553888 |
| | | Dr. M. K. Raul | T&P | 9545553881 |
| | | Dr. P. S. Kachare | Mech | 9545553774 |
| | | Prof. S.R. Gavali | Mech | |
| | | Dr. A. S. Vibhute | ENTC | |
| | | Prof. V. D. Jadhav | CSE | 945553837 |
| | | Dr. N. V. Khadake | Civil | |
| | | Dr. S. A. Lendave | F.E | 9545553878 |
| | | All Class Coordinators & All proctor Teachers' | | |
| 55. | P. A. System | Prof. V. S. Bhong (Coordinator) | EXTC | 9960224232 |
| | | Mr. A. D. Dune | CSE | |
| | | Mr. S. G. Jadhav | Electrician | 9545553627 |
| | | Mr. B. S. Surwase | Mech | 9545553819 |
| | | Mr. P. C. Waghmare | CSE | 9545553676 |
| 56. | Photography, Video Shooting and publicity | Mr. A. A. Mote (Coordinator) | MECH | |
| | | Mr. A. B. Chandanshive | Civil | 9545553678 |
| | | Mr. Pravin Bansode | Diploma | |
| | | Mr. D. T. Gaikwad | Mech | |
| 57. | Invitation , Thanks letter, paper cuttings,& Photo Album preparation | Prof. K. B. Patil (Coordinator) | MBA | 9595921154 |
| 58. | Students TA and DA Process | Prof. G. R. Shaikh (Coordinator) | CSE | 9890292457 |
| 59. | Online darshan ticket booking | Prof. Mr. G.G. Patil (Coordinator) | CSE | 9096454984 |
| 60. | House Keeping | Prof. R. S. Naiknaware & his Team | B. Pharm. | - |

All the concerned to take note and act accordingly.

D.T.K.
(Prof. D.T. Kashid)
Institute Coordinator,
OLYMPUS-2K18



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

C.C.

1. Vice-Principal
2. All Deans
3. All HODs
4. All faculty members through email

5. College Notice Boards
6. ftp
7. Website
8. Office Copy



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S

COLLEGE OF ENGINEERING, PANDHARPUR

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Tel.: 02186-216063, 9503103757, E-mail : coe@sveri.ac.in, Website: www.sveri.ac.in

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Date:- 01/09/2018

NOTICE

It is hereby informed to all concerned that the following are the details of the final selection to the various posts in Mechanical Engineering Department for OLYMPUS 2K18.

Departmental Student Head:-

1. Pise Jagdish [BE-A]
2. Jadhav Rishab [TE-A]

| Sr. No. | Event | Staff Coordinator | Heads | Coordinators |
|---------|---------------|---|---|------------------------------|
| 1. | PAPERFEST | Prof. S.V.Jadhav Dr. S. B. Salunkhe Dr. R. R. Gidde | /Mayuri A. Raut (BE-A) Suraj K. Shende (TE-A) | /Snehal S. Kale (BE-A) |
| | | | | Pruthviraj D. Pawar (SE-A) |
| | | | | /Nikita N. Deomare (SE-B) |
| | | | | Rohan R. Honkande (SE-A) |
| 2. | Idea War | Prof. S. B. Patil | Shrinath J. Deshmukh (TE-A) Raviraj B. Kokil (BE) | Mahapure Suraj B. (TE-A) |
| | | | | Karande Akshay R. (TE-A) |
| | | | | Torne Sunil M. (TE-A) |
| | | | | Ghongade Vishal B. (TE-A) |
| 3. | Robo Race | Prof.V. R. Chavan Prof. C. C. Jadhav | Aniket B. Chavan (TE B) Pushkar M. Patil (TE B) | Anna Y. Sirsat (SE A) |
| | | | | Purvesh P. Pangudwale (SE A) |
| | | | | Vijas J. Shaikh (SE A) |
| | | | | Pratik V. Ingale (SE B) |
| | | | | Onkar G. Pore (TE B) |
| | | | | Rushikesh M. Bhagwat (TE B) |
| | | | | Avinash A. Deomare (TE B) |
| | | | | Rama A. Mote (TE B) |
| | | | | Gurudev. N. Mhetre (TE B) |
| | | | | Ruturaj A. Deshmukh (TE B) |
| | | | | Pratap Netake (TE B) |
| | | | | Vyankatesh Khaladkar (TE B) |
| 4. | Business Plan | Prof. B. D. Gaikwad | Onkar P. Dudhane (BE-B) Rushikesh R. Waghmare (BE-C) | Mr. Shivam R. Kanade (BE) |
| | | | | Rohit C. Adalinge (SE-B) |
| | | | | Pratikesh P. Kumbhar (SE-B) |

S.M. Kale

(SRG)
HEAD,
Dept. of Mechanical Engg
C.O.E. Pandharpur.

| Sr. No. | Event | Staff Coordinator | Heads | Coordinators |
|---------|--------------------------------------|--|--|------------------------------|
| 5. | Lathe-War | Prof. K. V. Chandan Prof. U. L. Anuse | Shubham J. Jadhav (TE-A) Aniket D. Chavan (TE-A) | Piyush D. Nimgire (SE-B) |
| | | | | Vikas V. Dhumal (SE-A) |
| | | | | Amol M. Nagane (SE-B) |
| | | | | Shubham S. Langote (SE-B) |
| | | | | Ajinkya A. Jadhav (SE-A) |
| | | | | Kiran M. Dune (TE B) |
| | | | | Swapnil P. Ghodake (TE B) |
| 6. | CAT-MAT Ability (Techno Quiz) | Prof. B. T. Gadade | Rupesh Bandgar (B.E) | /Shubhada Mehetre (SE-A) |
| | | | | /Manasi S. Ghogale (SE-A) |
| | | | | Samadhan D. Masal (SE-B) |
| 7. | Agro Challenge | Prof. K. S. Pukale Prof. S. S. Kakade Prof. S. S. Wangikar | Akshay Hake (TE) Akash B. Rakate (TE-A) | Mr. Sayyad Farukh Husen (BE) |
| | | | | Rajkumar shinde (SE) |
| | | | | Rohan Honkande (SE) |
| | | | | Akash Bhise (SE) |
| | | | | Sunil Sonar (SE) |
| | | | | Yogeshwar Devkate (SE) |
| | | | | Dhumal Vikas (SE) |
| | | | | Vaibhav P. Kale (SE-A) |
| | | | | Pawan Gavali (SE) |
| | | | | Pradip Sathe (SE) |
| 8. | CATIA Race | Dr. A. B. Shinde Prof. A. K. Parkhe | Ashok B. Mule (BE-A) Vishal B. Waghmare (TE-A) | Nikhil V. Chavan (TE-B) |
| | | | | Prasad D. Magi (SE-B) |
| | | | | Akshay S. Sathe (SE-B) |
| | | | | Vikas D. Patil (TE-B) |
| 9. | AUTOCAD Race | Prof. S. J. Shinde Prof. A. K. Parkhe | Aiwale Prathemesh (TE- A) Sonage Ravikiran (TE-B) | Rohit P. Sakhare (TE-B) |
| | | | | Vasim J. Mulani (SE-B) |
| | | | | Varad A. Lad (SE-B) |
| 10. | Techno-Mech War | /Prof. P. K. Patil /Prof. P. A. Shaikh | Rajkumar Bile (B.E) Savata Randive (T.E) | Shubham Dixit (T.E) |
| | | | | Abhiram Deshpande (T.E) |
| | | | | Somesh Burande (B.E) |
| | | | | Yogesh Burandkar (B.E) |
| | | | | Sagar Bagewadi (B.E) |
| | | | | Pritam Gaikwad (T.E) |
| | | | | Mangesh Bhosale (B.E) |

CS.M.Kale

HEAD
Dept. of Mechanical Engg
C.O.E. Pandharpur.

| Sr. No. | Event | Staff Coordinator | Heads | Coordinators |
|---------|---|---|---|-----------------------------|
| 11. | Blind Driving | Prof. S. S. Jadhav Prof. S. Y. Salunke | Sudarshan B. Shinde (TE-B) Sagar N. Gaikwad (TE-B) | Pruthvijit Gaikwad (TE-B) |
| | | | | Suhas Phalake (TE-B) |
| | | | | Mayur Naiknaware (TE-B) |
| | | | | Ajay Jadhav (TE-B) |
| | | | | Amit Pardeshi (TE-B) |
| | | | | Rohit Sakhare (TE-B) |
| | | | | Sudarshan Tate (TE-B) |
| | | | | Rohan Pore (TE-B) |
| 12. | Treasure Hunt | Prof. R. G. Sache | Vishal J. Kadam (TE-A) Laxman P. Pachakwade (TE-A) | Karan P. Warkhedkar (TE-A) |
| | | | | Sameer M. Sayyad (TE-A) |
| | | | | Shivtej C. Narule (TE-A) |
| 13. | Registration | Prof. S. D. Bhosale | Arohan A. Jadhav (TE-A) | Ruturaj Jadhav (SE-A) |
| | | | | Shubham R. Atakale (TE-A) |
| | | | | Vikram D. Vhanmane (TE-A) |
| 14. | Accommodation | Prof. S. B. Bhosale | Jadhav Vijay Prakesh (TE-A) | Ghongade Vishal B. (TE-A) |
| | | | | Karande Akashay (TE-A) |
| 15. | Food Committee | Prof. S. M. Khomane | Pravin Kachare (B.E) Samadhan U. Bandagar (BE-B) | Charansinha U. Raut (TE-A) |
| | | | | Nagesh S. Ronge (TE-A) |
| | | | | Sachin S. Ingale (TE-A) |
| | | | | Sunil Miskin (BE-A) |
| | | | | Rajendra D. Pawar (BE-C) |
| | | | | Shreyash D. Ptange (BE-C) |
| | | | | Deepak B. Choudhari (BE-C) |
| | | | | Rohan D. Gaikwad (BE-A) |
| 16. | Certificate Distribution Committee | Prof. A. B. Chounde | | Mr. Ashutosh M. Potdar (BE) |
| | | | | Akshay A. Takale (SE-B) |
| | | | | Arbaj J. Tamboli (SE-B) |
| 17. | Discipline Committee | Dr. R. R. Gidde | - | Pritam Gaikwad (TE-B) |
| | | | | Ganesh Vastre (TE-B) |
| | | | | Nitin Tele (TE-A) |
| | | | | Yashraj A. Salunkhe (BE-C) |

S.M. Kale

(Mr. S. M. Kale)

Departmental Co-ordinator
OLYMPUS 2k18

HEAD SRG
Dept. of Mechanical Engg
Head of Mechanical Engg. Dept.

Some Glimpses Of Olympus Event



Olympus 2k18 Poster Inauguration



Olympus 2k18 Inauguration Ceremony





Glimpses of Olympus 2k18 Events



Olympus 2k18 Valedictory and Prize Distribution Ceremony

स्वेरीत राष्ट्रीय तांत्रिक संशोधनपर स्पर्धा

प्रतिनिधी। पंढरपूर

राष्ट्रीय पातळीवरील 'ऑलम्पस २०१८' हा तांत्रिक संशोधनपर स्पर्धा कार्यक्रम १५ व १६ सप्टेंबर रोजी येथील स्वेरी कॉलेज मध्ये आयोजित्यात आल्याची माहिती संस्थेचे सचिव प्राचार्य डॉ. बी.पी.रोंगे यांनी दिली.

यावेळी रोंगे म्हणाले, तयारी अंतिम टप्प्यात आली आहे. स्पर्धेसाठी 'भारतभरातून स्पर्धक येत आहेत. ऑलम्पस २०१८ हा कार्यक्रम सर्व विभागासाठी असून यामध्ये रोबोरेस, लेथ वॉर, अँटोकॅड रेस, अँग्रो चॅलेंज, टेक्नो गुरु, टाऊन प्लानिंग, एम कोड मॅटलॅब, ट्रेझर हंट, कटीया रेस, टेक्नो मेक वॉर, पेपर फिस्ट, बिझनेस प्लान, कॅट मॅट ऑबिलिटी, सीआरपी, अँड झिप, फॅब्रिका, ब्रिज डिझाइन, कॅड

रेस, सर्वे हंट, सर्किट सुडोकू, रोबोवॉर, ब्लाईंड सी, वेव डिझाइन, लॅन प्लॅनेट आदी संशोधन स्पर्धा होणार आहेत. स्पर्धेला दरवर्षी प्रचंड प्रतिसाद मिळतो. त्यामुळे संपूर्ण संशोधन समितीचे यावर नियंत्रण असते.

स्पर्धेसाठी बाहेरून आलेल्या संशोधक स्पर्धकांना कोणतीही अडचण येऊ नये यासाठी विशेष समिती परिश्रम घेत आहे. सिद्धार्थ उपासे, दिपान्विता डेव, ऐश्वर्या मासाळ, नितीन कदम, ज्ञानराज तेलंग आदी विद्यार्थी देखील परिश्रम घेत आहेत. अधिक माहितीसाठी प्रा. डी.टी.काशीद (९१६८६५५३३५), प्रा. एस.एम. काळे (९१६८६५५३४४) व प्रा.एस.एम.कुंभार (मोबा. नं- ९८८६३९६५००) यांच्याशी संपर्क साधण्याचे आवाहन करण्यात आले आहे.

स्वेरीत राष्ट्रीय पातळीवरील ऑलम्पस तांत्रिक कार्यक्रम

पंढरपूर : प्रतिनिधी



राष्ट्रीय पातळीवरील ऑलम्पस २०१८ हा तांत्रिक संशोधनपर स्पर्धा कार्यक्रम येत्या १५

व १६ सप्टेंबर रोजी होणार असल्याची माहिती संस्थेचे संस्थापक सचिव व प्राचार्य डॉ. बी.पी.रोंगे यांनी दिली.

येथील श्री विठ्ठल अभियांत्रिकी महाविद्यालयाचे सचिव व प्राचार्य डॉ.रोंगे यांच्या मार्गदर्शनाखाली तसेच कार्यक्रमाचे समन्वयक प्रा. डी.टी. काशीद यांच्या सहकार्याने संपूर्ण स्पर्धेची तयारी होत आहे. यासाठी जवळपास भारतभरातून स्पर्धक येत आहेत. त्यामुळे त्यांच्या निवासापासून ते भोजनाची सोय देखील अंतिम टप्प्यात

आली आहे.

ऑलम्पस २०१८ हा कार्यक्रम सर्व विभागासाठी असून यामध्ये रोबोरेस, लेथ वॉर, अँटोकॅड रेस, अँग्रो चॅलेंज, टेक्नो गुरु, टाऊन प्लानिंग, एम कोड मॅटलॅब, ट्रेझर हंट, कटीया रेस, टेक्नो मेक वॉर, पेपर फिस्ट, बिझनेस प्लान, कॅट मॅट ऑबिलिटी, सीआरपी, अँड झिप, फॅब्रिका, ब्रिज डिझाइन, कॅड रेस, सर्वे हंट, सर्किट सुडोकू, रोबोवॉर, ब्लाईंड सी, वेव डिझाइन, लॅन प्लॅनेट असे विविध प्रकारचे संशोधन स्पर्धा होणार आहेत.

या स्पर्धात्मक कार्यक्रमाच्या अधिक माहितीसाठी प्रा. डी.टी. काशीद, प्रा. एस.एम. काळे व प्रा.एस.एम.कुंभार यांच्याशी संपर्क साधावा असे आवाहन करण्यात आले आहे.



स्वेरीत 'ऑलम्पस २०१८' राष्ट्रीय पातळीवरील तांत्रिक कार्यक्रम

प्रतिनिधी /

पंढरपूर :

राष्ट्रीय पातळीवरील

'ऑलम्पस २०१८' हा तांत्रिक संशोधनपर स्पर्धा कार्यक्रम येत्या १५ व १६ सप्टेंबर रोजी होणार असल्याची माहिती संस्थेचे संस्थापक सचिव व प्राचार्य डॉ. बी. पी. रोंगे यांनी दिली.

येथील श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिट्यूट, पंढरपूर संचलित अभियांत्रिकी महाविद्यालयात १५ व १६ सप्टेंबर या दोन दिवशी राष्ट्रीय दर्जाचे स्पर्धात्मक ऑलम्पस २०१८ ही स्पर्धा होत असून याची तयारी अंतिम टप्प्यात आली असल्याचे चित्र दिसत आहे.

ऑलम्पस २०१८ हा कार्यक्रम सर्व

विभागासाठी असून यामध्ये रोबोरेस, लेथ वॉर, अँटोकॅड रेस, अँग्रो चॅलेंज, टेक्नो गुरु, टाऊन प्लानिंग, एम कोड मॅटलॅब, ट्रेझर हंट, कटीया रेस, टेक्नो मेक वॉर, पेपर फिस्ट, बिझनेस प्लान, कॅट मॅट ऑबिलिटी, सीआरपी, अँड झिप, फॅब्रिका, ब्रिज डिझाइन, कॅड रेस, सर्वे हंट, सर्किट सुडोकू, रोबोवॉर, ब्लाईंड सी, वेव डिझाइन, लॅन प्लॅनेट

असे विविध प्रकारचे संशोधन स्पर्धा होणार आहेत. बाहेरून आलेल्या संशोधक स्पर्धकांना कोणतीही अडचण येऊ नये, यासाठी विशेष समिती परिश्रम घेत आहे. विद्यार्थ्यांच्यावतीने 'ऑलम्पस २०१८' चे विद्यार्थी अध्यक्ष सिद्धार्थ उपासे, सचिवा दीपान्विता डेव, सहसचिवा ऐश्वर्या मासाळ, खजिनदार नितीन कदम, ज्ञानराज तेलंग यांच्यासह

इतर विद्यार्थीदेखील परिश्रम घेत आहेत. या स्पर्धात्मक कार्यक्रमाच्या अधिक माहितीसाठी प्रा. डी.टी. काशीद (मोबा. नं-९१६८६५५३३५), प्रा. एस. एम. काळे (मोबा. नं-९१६८६५५३४४) व प्रा. एस. एम. कुंभार (मोबा. नं- ९८८-६३९६५००) यांच्याशी संपर्क साधावा, असे आवाहनदेखील यावेळी करण्यात आले आहे.



स्वेरीत अभियंता दिना निमित्त मार्गदर्शन करताना फ्लीटगार्ड फिल्टर्स प्रा.लि.चे सी.एफ.ओ., कंपनी सचिव आणि प्रमुख एच.आर.संजय कुलकर्णी सोबत संस्थेचे संस्थापक सचिव व अभियांत्रिकीचे प्राचार्य डॉ.बी.पी.रोंगे, हेड क्वालिटी आनंद दिवान, अमर माळी, जेष्ठ विश्वस्त दादासाहेब रोंगे, सुरज रोंगे व इतर

शिक्षणाबरोबरच व्यवहार ज्ञान माहित करून घ्यावे : संजय कुलकर्णी

स्वेरीत 'अभियंता दिन' संपन्न तर 'ऑलम्पस २०१८'चे धाटात उदघाटन

पंढरपूर(संतोष हलकुडे): 'विज्ञान आणि तंत्रज्ञान विषय अभ्यासताना मनात एक प्रकारचे कुतूहल निर्माण होते त्यामुळे अनेक प्रश्नांच्या उत्तरांचा शोध घ्यावा लागतो यातून संशोधनाची निर्मिती होते त्यामुळे विद्यार्थ्यांनी शिक्षण घेताना अथवा नवीन गोष्टी करताना त्यात कुतूहल जागृत ठेवल्यास सर्वांगीण विकास शक्य होवू शकतो. यासाठी विद्यार्थ्यांनी प्रगतीसाठी पुस्तकी ज्ञानाबरोबरच व्यवहारज्ञान देखील जाणून घ्यावे. त्यामुळे बाहेरील विश्वातील अनुभव देवून आपल्याला समाजात वावरताना आवश्यक ज्ञान मिळू शकते. यासाठी नवअभियंत्यांनी सामाजिक बांधिलकी जोपासून आपले ज्ञान वाढवावे.' असे प्रतिपादन फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सी.एफ.ओ., कंपनी सचिव आणि प्रमुख एच.आर. संजय कुलकर्णी यांनी केले.

श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिट्यूट, पंढरपूर संघलित अभियांत्रिकी महाविद्यालयात आयोजित केलेल्या 'अभियंता दिनी' व 'ऑलम्पस २०१८' या राष्ट्रीय संशोधन स्पर्धा कार्यक्रमाच्या उदघाटन प्रसंगी प्रमुख पाहुणे म्हणून फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सी.एफ.ओ., कंपनी सचिव आणि प्रमुख एच.आर. संजय कुलकर्णी

हे उपस्थितांना मार्गदर्शन करत होते. कार्यक्रमाच्या अध्यक्षस्थानी जेष्ठ विश्वस्त दादासाहेब रोंगे होते. प्रारंभी भारतरत्न डॉ. मोक्षगुंडम्प विश्वेश्वरय्या यांच्या प्रतिमेच्या पुजनानंतर संस्थेचे संस्थापक सचिव व अभियांत्रिकीचे प्राचार्य डॉ. बी.पी.रोंगे यांनी संस्थेची संपूर्ण माहिती देवून प्रास्ताविक केली. 'ऑलम्पस २०१८'चे विद्यार्थी अध्यक्ष सिद्धार्थ उपासे यांनी स्पर्धेची संपूर्ण नियमावली व सविस्तर माहिती दिली. यावेळी कांचन बागल, श्वेता कदम, सहसचिवा ऐश्वर्या मासाळ यांनी देखील अभियंता दिनाबाबत मत व्यक्त केले. स्वेरीचे माजी विद्यार्थी व कमिन्स इंडिया कंपनीचे मॅनेजर अमर माळी म्हणाले की, 'स्वेरीचे यश हे विद्यार्थ्यांच्या गुणवत्तेवर अवलंबून आहे आणि विद्यार्थ्यांना गुणवत्तापात्र बनविण्यासाठी येथील प्राध्यापक वर्ग प्रचंड परिश्रम घेत असतात. विद्यार्थ्यांच्या यशासाठी विविध प्रयोग केले जाते. त्यामुळेच या ठिकाणी शिक्षण घेणारे विद्यार्थी परिपक्व अभियंते बनत असून स्वेरीतील विद्यार्थ्यांचे भविष्य उज्वल आहे.' असे सांगून आलेला अनुभव व त्यातून झालेला विकास याबाबत माळी यांनी माहिती दिली. फ्लीटगार्डचे हेड क्वालिटी आनंद दिवान म्हणाले की, 'आपण काय आहोत ? हे आपल्या कार्यातून

दाखवून द्यावे. विद्यार्थ्यांकडे विषय, ज्ञान आणि माणूसकी जर असेल तर भविष्यात त्याचा पुरस्कार जगभर होईल. विद्यार्थ्यांनी इंग्रजी संवाद साधताना संपूर्ण व्याकरणाचा वापर करावा.' असे सांगून दिवान यांनी विद्यार्थ्यांना कंपनीत काम करताना आवश्यक ज्ञान कसे मिळवावे याबाबत मार्गदर्शन केले. अध्यक्षस्थानावरून जेष्ठ विश्वस्त दादासाहेब रोंगे म्हणाले की, 'आपण महापुरुषांचा गौरव करताना आपल्याला व समाजाला त्यांच्या माध्यमातून एक प्रकारे प्रेरणा व ऊर्जा मिळते म्हणून विद्यार्थ्यांनी आपल्याला मिळणारे कौशल्यज्ञान समाजाच्या उपयोगी आणावेत.' असे सांगितले. यावेळी 'ऑलम्पस २०१८' निमित्ताने अभियांत्रिकीचे सर्व विभाग आकर्षक पद्धतीने सजविले होते तर जागोजागी सुगंध दवरळत होता. यावेळी सुरज रोंगे, पालक संघाचे दैठणकर, डिप्लोमा इंजिनिअरिंगचे प्राचार्य डॉ. एन.डी. मिसाळ, फार्मसीच्या प्राचार्या डॉ. एस. डी. सोनवणे, अभियांत्रिकीचे उपप्राचार्य डॉ. एस.एन. कुलकर्णी, 'ऑलम्पस २०१८'चे समन्वयक प्रा. डी.टी.काशीद, सांस्कृतिक कार्यक्रम विभागप्रमुख प्रा. करण पाटील, सचिवा दिपाचिता डेब, खजिनदार नितीन कदम, ज्ञानराज तेलंग, विविध विभागाचे प्रमुख, प्राध्यापक वर्ग, शिक्षकेतर कर्मचारी, विद्यार्थी, पालक आदी उपस्थित होते. सूत्रसंचालन ऋतुराज जाधव व आकांक्षा पाटील यांनी केले तर विद्यार्थी अधिष्ठाता डॉ. अभय उताप यांनी आभार मानले.

चाळण्यासाठी खूप कांही पण..

वाचण्याजोगा दामाजी एक्सप्रेस च

विठ्ठल अभियांत्रिकीत अभियंता दिन साजरा

लोकमत न्यूज नेटवर्क

पंढरपूर : श्री विठ्ठल अभियांत्रिकी महाविद्यालयात अभियंता दिनी व ऑलम्पस २०१८ या राष्ट्रीय संशोधन स्पर्धा कार्यक्रमाच्या उदघाटन फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सचिव संजय कुलकर्णी यांच्या हस्ते करण्यात आले. अध्यक्षस्थानी ज्येष्ठ विश्वस्त दादासाहेब रोंगे होते.

प्रारंभी भारतरत्न डॉ. मोक्षगुंडम्प विश्वेश्वरय्या यांच्या प्रतिमेचे पूजन संस्थापक सचिव डॉ. बी. पी. रोंगे यांनी केले. ऑलम्पस २०१८ चे विद्यार्थी अध्यक्ष सिद्धार्थ उपासे यांनी स्पर्धेची नियमावली व सविस्तर माहिती दिली. यावेळी कांचन बागल, श्वेता कदम, सहसचिवा ऐश्वर्या मासाळ यांनी अभियंता दिनाबाबत माहिती दिली.

स्वेरीचे माजी विद्यार्थी अमर माळी, फ्लीटगार्डचे हेड क्वालिटी आनंद दिवान, सुरज रोंगे, पालक संघाचे दैठणकर, प्राचार्य डॉ. एन. डी. मिसाळ, प्राचार्या डॉ. एस. डी. सोनवणे, उपप्राचार्य डॉ. एस. एन. कुलकर्णी, ऑलम्पस २०१८ चे समन्वयक प्रा. डी. टी. काशीद, प्रा. करण पाटील, दिपाचिता डेब, नितीन कदम, ज्ञानराज तेलंग, यांच्यासह प्राध्यापक, शिक्षकेतर कर्मचारी, विद्यार्थी, पालक उपस्थित होते. सूत्रसंचालन ऋतुराज जाधव व आकांक्षा पाटील यांनी केले. तर विद्यार्थी अधिष्ठाता डॉ. अभय उताप

स्वेरीत अभियंता दिन साजरा, ऑलम्पस २०१८ चे थाटात उद्घाटन

पंढरपूर- (संतोष हलकुडे) 'विज्ञान आणि तंत्रज्ञान विषय अभ्यासताना मनात एक प्रकारचे कुतूहल निर्माण होते त्यामुळे अनेक प्रश्नांच्या उत्तरांचा शोध घ्यावा लागतो यातून संशोधनाची निर्मिती होते त्यामुळे विद्यार्थ्यांनी शिक्षण घेताना अथवा नवीन गोष्टी करताना त्यात कुतूहल जागृत ठेवल्यास सर्वांगीण विकास शक्य होवू शकते. यासाठी विद्यार्थ्यांनी प्रगतीसाठी पुस्तकी ज्ञानाबरोबरच व्यवहारज्ञान देखील जाणून घ्यावे. त्यामुळे बाहेरील विश्वातील अनुभव येवून आपल्याला समाजात वावरताना आवश्यक ज्ञान मिळू शकते. यासाठी नवअभियंत्यांनी सामाजिक बांधिलकी जोपासून आपले ज्ञान वाढवावे.' असे प्रतिपादन फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सी.एफ.ओ. कंपनी सचिव आणि प्रमुख एच.आर. संजय कुलकर्णी यांनी केले. येथील श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिट्यूट, पंढरपूर संचालित अभियांत्रिकी महाविद्यालयात आयोजित केलेल्या 'अभियंता दिनी' व 'ऑलम्पस २०१८' या राष्ट्रीय संशोधन स्पर्धा कार्यक्रमाच्या



उद्घाटन प्रसंगी प्रमुख पाहुणे म्हणून फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सी.एफ.ओ. कंपनी सचिव आणि प्रमुख एच.आर. संजय कुलकर्णी हे उपस्थितांना मार्गदर्शन करत होते. कार्यक्रमाच्या अध्यक्षस्थानी जेष्ठ विश्वस्त दादासाहेब रोंगे होते. प्रारंभी भारतरत्न डॉ. मोक्षगुंडम्प विश्वेश्वरय्या यांच्या प्रतिमेच्या पुजनानंतर संस्थेचे संस्थापक सचिव व अभियांत्रिकीचे प्राचार्य डॉ. बी.पी.रोंगे यांनी संस्थेची संपूर्ण माहिती देवून प्रास्ताविक

केले. 'ऑलम्पस २०१८' चे विद्यार्थी अध्यक्ष सिद्धार्थ उपासे यांनी स्पर्धेची संपूर्ण नियमावली व सविस्तर माहिती दिली. यावेळी कांचन बागल, श्वेता कदम, सहसचिवा ऐश्वर्या मासाळ यांनी देखील अभियंता दिनाबाबत मत व्यक्त केले. स्वेरीचे माजी विद्यार्थी व कमिन्स इंडिया कंपनीचे मॅनेजर अमर माळी म्हणाले की, 'स्वेरीचे यश हे विद्यार्थ्यांच्या गुणवत्तेवर अवलंबून आहे आणि विद्यार्थ्यांना

गुणवत्तापात्र बनविण्यासाठी येथील प्राध्यापक वर्ग प्रचंड परिश्रम घेत असतात. विद्यार्थ्यांच्या यशासाठी विविध प्रयोग केले जाते. त्यामुळेच या ठिकाणी शिक्षण घेणारे विद्यार्थी परिपक्व अभियंते बनत असून स्वेरीतील विद्यार्थ्यांचे भविष्य उज्वल आहे.' असे सांगून आलेला अनुभव व त्यातून झालेला विकास याबाबत माळी यांनी माहिती दिली. फ्लीटगार्डचे हेड ब्रान्चिटी आनंद दिवान म्हणाले की, 'आपण काय

आहोत? हे आपल्या कार्यातून दाखवून द्यावे. विद्यार्थ्यांकडे विषय, ज्ञान आणि माणुसकी जर असेल तर भविष्यात त्याचा पुस्तकर जगभर होईल. विद्यार्थ्यांनी इंग्रजी संवाद साधताना संपूर्ण व्याकरणाचा वापर करावा.' असे सांगून दिवान यांनी विद्यार्थ्यांना कंपनीत काम करताना आवश्यक ज्ञान कसे मिळवावे याबाबत मार्गदर्शन केले. अध्यक्षस्थानावरून जेष्ठ विश्वस्त दादासाहेब रोंगे म्हणाले की, आपण

महापुरुषांचा गौरव करताना आपल्याला व समाजाला त्यांच्या माध्यमातून एक प्रकारे प्रेरणा व ऊर्जा मिळते म्हणून विद्यार्थ्यांनी आपल्याला मिळणारे कौशल्यज्ञान समाजाच्या उपयोगी आणावेत. असे सांगितले. यावेळी 'ऑलम्पस २०१८' निमित्ताने अभियांत्रिकीचे सर्व विभाग आकर्षक पद्धतीने सजविले होते तर जागोजागी सुगंध दरवळत होता. यावेळी सुरज रोंगे, पालक संधाचे दैठणकर, डिप्लोमा इंजिनिअरिंगचे प्राचार्य डॉ. एन.डी. मिसाळ, फार्मसीच्या प्राचार्या डॉ. एस. डी. सोनवणे, अभियांत्रिकीचे उपप्राचार्य डॉ. एस.एन. कुलकर्णी, ऑलम्पस २०१८ चे समन्वयक प्रा. डी.टी.काशीद, सांस्कृतिक कार्यक्रम विभागप्रमुख प्रा. करण पाटील, सचिवा दिपांविता डेब, खजिनदार नितीन कदम, ज्ञानराज तेलंग, विविध विभागाचे प्रमुख, प्राध्यापक वर्ग, शिक्षकेतर कर्मचारी, विद्यार्थी, पालक आदी उपस्थित होते. सुत्रसंचालन ऋतुराज जाधव व आकांक्षा पाटील यांनी केले तर विद्यार्थी अधिष्ठाता डॉ. अभय उत्पात यांनी आभार मानले.

शिक्षणाबरोबरच व्यवहार ज्ञान माहित करून घ्यावे !

पंढरपूर : विज्ञान आणि तंत्रज्ञान विषय अभ्यासताना मनात एक प्रकारचे कुतूहल निर्माण होते त्यामुळे अनेक प्रश्नांच्या उत्तरांचा शोध घ्यावा लागतो यातून संशोधनाची निर्मिती होते त्यामुळे विद्यार्थ्यांनी शिक्षण घेताना अथवा नवीन गोष्टी करताना त्यात कुतूहल जागृत ठेवल्यास सर्वांगीण विकास शक्य होवू शकते. यासाठी विद्यार्थ्यांनी प्रगतीसाठी पुस्तकी ज्ञानाबरोबरच व्यवहारज्ञान देखील जाणून घ्यावे. त्यामुळे बाहेरील विश्वातील अनुभव येवून आपल्याला समाजात वावरताना आवश्यक ज्ञान मिळू शकते. यासाठी नवअभियंत्यांनी सामाजिक बांधिलकी जोपासून आपले ज्ञान वाढवावे. असे प्रतिपादन फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सी.एफ.ओ. कंपनी सचिव आणि प्रमुख एच.आर. संजय कुलकर्णी यांनी केले.

येथील श्री विठ्ठल एज्युकेशन अँड रिसर्च इन्स्टिट्यूट, पंढरपूर संचालित अभियांत्रिकी महाविद्यालयात आयोजित केलेल्या अभियंता दिनी व ऑलम्पस या राष्ट्रीय संशोधन स्पर्धा कार्यक्रमाच्या उद्घाटन प्रसंगी प्रमुख पाहुणे म्हणून फ्लीटगार्ड फिल्टर्स प्रा. लिमिटेडचे सी.एफ.ओ. कंपनी सचिव आणि प्रमुख एच.आर. संजय कुलकर्णी हे उपस्थितांना मार्गदर्शन करत होते. कार्यक्रमाच्या अध्यक्षस्थानी जेष्ठ



विश्वस्त दादासाहेब रोंगे होते. प्रारंभी भारतरत्न डॉ. मोक्षगुंडम्प विश्वेश्वरय्या यांच्या प्रतिमेच्या पुजनानंतर संस्थेचे संस्थापक सचिव व अभियांत्रिकीचे प्राचार्य डॉ. बी.पी.रोंगे यांनी संस्थेची संपूर्ण माहिती देवून प्रास्ताविक केले. ऑलम्पस चे विद्यार्थी अध्यक्ष सिद्धार्थ उपासे यांनी स्पर्धेची संपूर्ण नियमावली व सविस्तर माहिती दिली.

यावेळी कांचन बागल, श्वेता कदम, सहसचिवा ऐश्वर्या मासाळ यांनी देखील अभियंता दिनाबाबत मत व्यक्त केले. यावेळी जेष्ठ विश्वस्त दादासाहेब रोंगे म्हणाले की, आपण महापुरुषांचा गौरव करताना आपल्याला व समाजाला त्यांच्या माध्यमातून एक प्रकारे प्रेरणा व ऊर्जा मिळते म्हणून विद्यार्थ्यांनी आपल्याला मिळणारे कौशल्यज्ञान

समाजाच्या उपयोगी आणावेत. असे सांगितले.

यावेळी सुरज रोंगे, पालक संधाचे दैठणकर, डिप्लोमा इंजिनिअरिंगचे प्राचार्य डॉ. एन.डी. मिसाळ, फार्मसीच्या प्राचार्या डॉ. एस. डी. सोनवणे, अभियांत्रिकीचे उपप्राचार्य डॉ. एस.एन. कुलकर्णी, ऑलम्पस चे समन्वयक प्रा. डी.टी.काशीद, सांस्कृतिक कार्यक्रम विभागप्रमुख प्रा. करण पाटील, सचिवा दिपांविता डेब, खजिनदार नितीन कदम, ज्ञानराज तेलंग, विविध विभागाचे प्रमुख, प्राध्यापक वर्ग, शिक्षकेतर कर्मचारी, विद्यार्थी, पालक आदी उपस्थित होते. सुत्रसंचालन ऋतुराज जाधव व आकांक्षा पाटील यांनी केले तर विद्यार्थी अधिष्ठाता डॉ. अभय उत्पात यांनी आभार मानले.



SVERI's COLLEGE OF ENGINEERING, PANDHARPUR

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In Association with ISTE Students' Chapter along with MESA, ICON, ELITE, CESA Presents

A Series of National Level Technical Events

OLYMPUS 2K18

CERTIFICATE




Mr./Ms./Mrs. Rahul S. Kathare

of Government Polytechnic, Obad for being Winner / Runner up / Participant in the
event AUTOCAD RACE of "Olympus 2K18" organised on 15th & 16th September 2018
at SVERI's College of Engineering, Pandharpur.

" Lets not wait for the change; lets be the change "


Student Co-ordinator


(Prof. D. T. Kashid)
Institute Co-ordinator, ISTE


(Dr. B. P. Ronge)
Principal





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A Series of National Level Technical Events

OLYMPUS 2K18

CERTIFICATE OF APPRECIATION



This is to certify that Mr./~~Ms.~~/Mrs. Aniket D. Chavan

of Class T.E.(Mech) has worked as Head / Co-~~o~~rdinator for Lathe War

Event / Com~~m~~ittee in "Olympus 2K18" organised on 15th & 16th September 2018

at SVERI's College of Engineering, Pandharpur.

" Lets not wait for the change; lets be the change "

Aditi

Student Co-ordinator

[Signature]

(Prof. D. T. Kashid)

Institute Co-ordinator, ISTE

[Signature]

(Dr. B. P. Ronge)

Principal



Sample Report of Olympus

Report of “OLYMPUS 2K18”

It gives me an immense pleasure & joy to inform you that, our institute have organized “OLYMPUS 2K18”, a Series of National Level Technical Events under ISTE Students’ Chapter along with MESA, ELITE, ICON, ASCENT & CESA on 15th & 16th September 2018.

“OLYMPUS 2K18”, was organized with an agenda to discover the best ideas and innovations from across the nation that would reform and revolutionize the present day scenario in India. One single idea has the potential to become the harbinger of change and a crusader for a cause in the coming days. Every year, Shri Vithal Education and Research Institute’s, Pandharpur (SVERI) invites young engineers from all over the nation to participate in one of the most exciting events of the year “OLYMPUS 2K18”. This event aims at providing students, a national platform for exposure to various technical & competitive issues & helping them to enhance their overall skill.

The program started with inauguration ceremony in the auspicious hands of Chief Guest, Hon. Shri. Sanjay Kulkarni, CFO, Fleetgaurd Filters Pvt. Ltd. and Dr. B. P. Ronge, Principal, SVERI’s College of Engineering, Pandharpur. In the Valedictory Function, different participants put forward their views about the program and its organization, where most of the participants expressed their satisfaction about arrangement of such an event in this region. Prize distribution ceremony was done by hands of Chief Guest Hon. Shri. Amol Deshpande, Walchandnagar Industries, Walchandnagar. Certificates, Prizes & Medals were distributed to all the winners.

Our management leaves no stone unturned in supporting our students in this ordeal. This year a total budget of around 5.50 lakhs was set aside for this “OLYMPUS 2K18”. Thus letting the students concentrate on the actual planning and execution of the event rather than hunting for petty sponsorships. Of the budget the winners of the events can take home about 2 lakhs prize money. Total number of participants was 1400 approximately .We thank them in all humility for this wonderful gesture.

Technical Events conducted under OLYMPUS 2K18 are-

| | | | |
|-----------------------------------|---------------------------|----------------|-------------------------------------|
| PAPERFEST (Paper Presentation) | AutoCAD Race | CAD Race | DB-Mania |
| IDEA War | Circuit Blueprint | Bridge Design | Business Plan |
| CAT-MAT Ability (General Quiz) | Proteus War | Town Planning | ADD-ZAP |
| Robo-Race | M Code -Microcontroller | Survey Hunt | C.R.P. (Campus Recruitment Program) |
| Lathe War | M Code - MATLAB | Robo War | Treasure Hunt |
| Blind Driving | LAN Planet-NFS | Web Design | Agro-Challenge |
| CATIA Race | LAN Planet-Counter Strike | Code Debugging | Techno-Guru (CSE Quiz) |
| Techno- Mech War | FABRICA | Blind C | |

About 125 faculty coordinators and 500 student coordinators have made efforts for the success of the event.

| Sr. No. | Post | Name of Student | Class |
|---------|-----------------|---------------------|-------------|
| 1. | President | Mr. Siddharth Upase | B.E.(ENTC) |
| 2. | Secretary | Ms. Dipanwita Deb | B.E.(CSE) |
| 3. | Joint Secretary | Ms. Aishwarya Masal | T.E.(CIVIL) |
| 4. | Treasurer | Mr. Nitin Kadam | B.E.(MECH) |
| 5. | Treasurer | Mr. Dnyanraj Telang | B.E.(MECH) |


CDTK

(Prof. D.T. Kashid)
Institute Coordinator, OLYMPUS-2K18

KSHITIJ 2K19-A TECHNICAL EVENT THROUGH MESA

We have organized KSHITIJ-2K19 under MESA in collaboration with IEI, Kolkata, Solapur Local Center, Solapur on 07th March 2019. The Function was inaugurated by **Hon. Mr. Kishor Humar**, H.R. Managing, Shriram Finance Value Device. Solapur, along with Trustee Member SVERI's, COE, Pandharpur **Hon. Prof. Suraj Ronge**, Head Dept. of Mech. Engg. Prof. S. R. Gavali, Dean, Students' Dr. A. A. Utpat, Dean Admission Dr. P. S. Kachare Principal, SVERI's COE (Poly), Pandharpur, Dr. N. D. Misal, MESA President Mr. Rajendra Pawar, MESA Staff Co-ordinator Prof. A. K. Parkhe, IEI Kolkata Students' Chapter Staff Co-ordinator Prof. D. T. Kashid.

In this event we organized 8 events like Paper Fest, Poster Presentation, General Quiz, Project Exhibition, CATIA Race, CAD War, Blind Driving & PUBG. The many students have participated in these different events from different colleges. More than 400 students were participated in this Kshitij-2k19.



MESA Coordinator

Head, Mechanical Engg. Dept.

HEAD,
Dept. of Mechanical Engg
C.O.E. Pandharpur.

Some Glimpses of KSHITIJ Activity



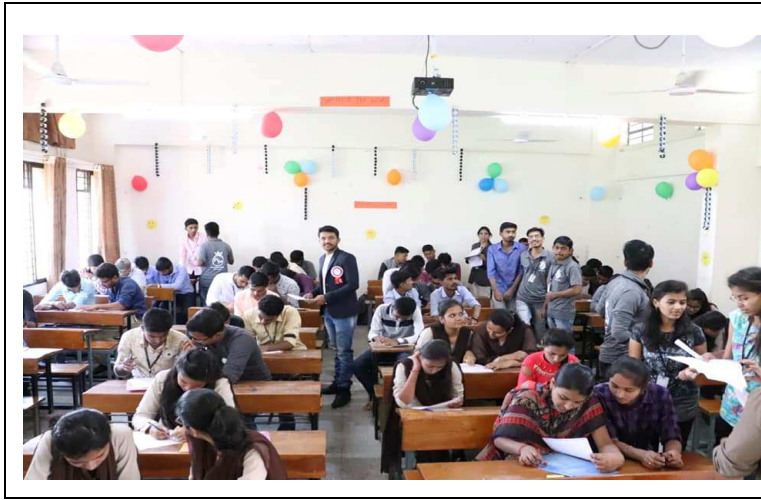
APankaj

MESA Coordinator

N. K. S.

Head, Mechanical Engg. Dept.

HEAD,
Dept. of Mechanical Engg
C.O.E. Pandharpur.



[Handwritten signature]

MESA Coordinator

[Handwritten signature]

Head, Mechanical Engg. Dept.

HEAD,
Dept. of Mechanical Engg
C.O.E. Pandharpur.



Shri Vithal Education & Research Institute's

COLLEGE OF ENGINEERING, PANDHARPUR

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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 Engineers (India), Kolkata and TCS, Pune. ISO 9001-2015 Certified Institute

Date:05/09/2018

NOTICE

Il the students of ENTC Department are here by informed to note. We are going to inaugurate the 'ELITE 2k19' on 14/09/2018. Attendance is compulsory for all the students. All the students are here by informed to act accordingly.

ELITE President: Ms.Vaishanvi Patki. BE B

ELITE Vice President: Ms. Banu Chavan. BE A

ELITE Secretary: Mr.Pandurang Misal. TE A

ELITE Joint Secretary: Mr.Rohit Ranware. TE B

ELITE Coordinator

HOD ENTC

14440
Dept. of Electronics & Telecom. Engg.
C. Q. E. Pandharpur



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 05/09/2018.

OFFICE ORDER

The Following Students Were Deputed for the smooth conduction of ELITE 2K19 on 14/09/2018.

| Sr.no. | Committee Name | Faculty Name | Student Coordinator |
|--------|-----------------------------------|-----------------------------|--|
| 1 | Overall Organization | Akshay Jadhav | IMs.Vaishanvi Patki. Mr.Pandurang Misal |
| 2 | Decoration and guest felicitation | /ASS /SRP | Ms.Sayli Gadekar |
| 3 | PA system | VSB | Mr.Vishal Gaikwad |
| 4 | Discipline | HKB SAI /JSS /MMPr | Mr.Annasaheb Satpute Ms.Banubai Chavan |
| 5 | Transportation | DPN | Mr.Rushikesh More |
| 6 | Anchoring | NPK | Ms Vaishnavi patki |
| 7 | Photography and video | /SDP /SSG | Mr.Sushant Aldar |

ELITE Coordinator

HOD ENT



Shri Vitthal 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



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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

01/01/2019

ELITE 2K19

(ELECTRONICS LEADING IN TECHNICAL ENRICHMENT)

We have inaugurated the departmental student forum ELITE (ELECTRONICS LEADING IN TECHNICAL ENRICHMENT) on 14th Sept 2018. The theme Adopted for the same was **Industrial Revolution 4.0**. Students have made a prototype of **Solar System**. The association inaugural function was initiated with invocation and traditional lighting of lamp in TPO Seminar hall. **Mr. Sarvesh Rantarparkhi** from **Suma Soft Pvt. Ltd. Pune** inaugurated the students Forum, also Guided on Requirement of industry from engineering Graduate & Advanced technology related courses. **Dr. N.D. Misal** Principal SVERI's Polytechnic (Engineering) Guided the student on the importance of Research. **Dr. Anup S Vibhute** HOD ENTC Guided Students on teamwork and innovation. On the same day, students have arranged the following Events

1. Art Gallery
2. Techno-Jam
3. Rapid Fire
4. Project Mania

Art Gallery was arranged to encourage the students' talent of art, all the students from the department contributed to the same.

The LOGO & Solgan Design Competition was held for the students in order to enhance their creative and analytical thinking. Students from all the divisions SE TE And BE ENTC have participated. In Project Mania Mini Project made by Diploma & TE students was kept for demonstration. Rapid Fire and Techno jam was the Creative events have made participant to Showcase their talent.

ELITE COORDINATOR

HOD ENTC
HEAD

Dept. of Electronics & Telecom. Engg.

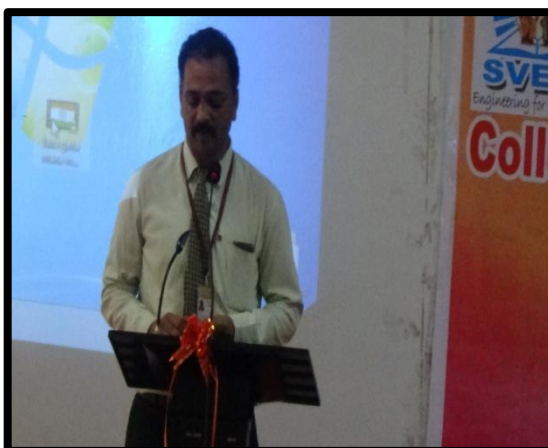
Some Glimpses of ELITE Inauguration and Events Conducted



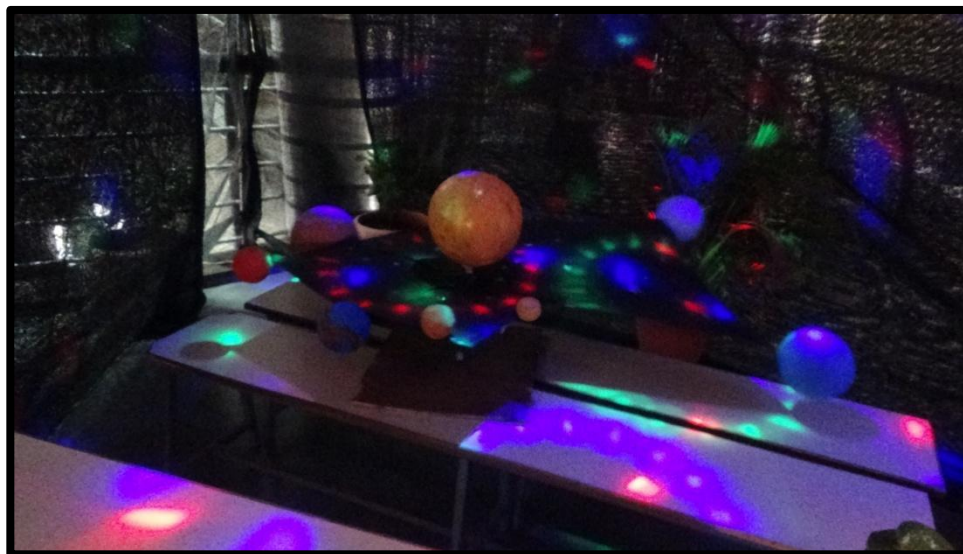
**Mr. Sarvesh Ratnparkhi from Suma Soft Pvt. Ltd. Pune and SVERI's
Proud Alumini Guiding the Students**



**Dr.N.D.Misal Principal SVERI's
Poly technic Guidning the Students**



**HOD ENT Dr.A.S.Vibhute
Guideing the Students**



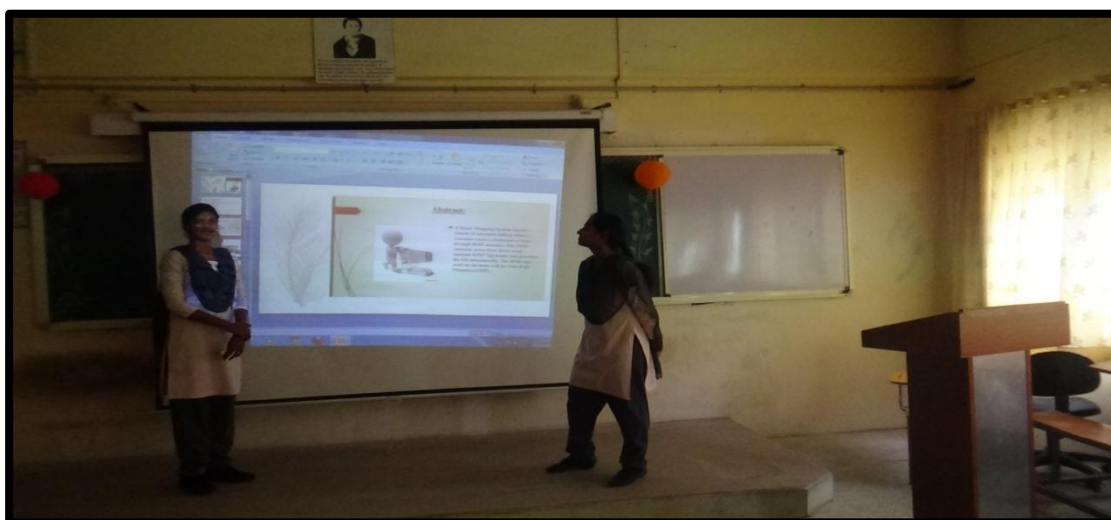
Solar System Prototype made our Students



Glimpses of Project Exhibition Event



Glimpses of Project Exhibition Event



Glimpses of Project Mania Event



Glimpses of Rapid Fire Event



Glimpses of Art Gallery



Shri Vitthal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR

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As a engineering or any other graduate it's our social resoponsibilty to contribute towards environment. SVERI always take lead in such activities and this year it was no different. We had celebrated environmental day by planting trees on 21 july 2018 and take oath of preseravtion of trees and enviroment. The initiative refered as "*Sverich Zaad*"

Pandharpur in known as "*Dakshin Kashi*" of India where every year over 8 lacs pilgrims devotedly visits during "*Ashadhi Wari*". This floating population is way beyond the population of pandharpur and hence the resource management is always a key factor every year. The use of mobile toilets and cleanlyness is always an issue during wari and hence The faculty members along with group of students participated in nirmalwariabhiyan for 24 hrs in four batches of 6hrs each. The faculty members and students voluntarily encouraged the pilgrims to use mobile toilets and create awareness about plastic ban.



GREEN TEAM



NIRMAL WARI ABHIYAN

BE Farewell

Students from TE and SE ENTC have given the Farewell to the BE ENTC Students on 20th April 2018. The Function was inaugurated by Dean Students' Dr.A.A.Utpat. Our some BE ENTC Students have shared their views about college and Department



Experiential Learning through Mock Interviews

- **Individual Participation**
- **Communication Effectively**
- **Engineering Knowledge**

Video Link: <https://youtu.be/JacejXfHP-o>

Audio- Video Recording Interview

Dr. Madhav Raul- Dean TPII <placement@sveri.ac.in>

Sun, Dec 30, 2018 at 11:26 AM

To: mmshinde@coe.sveri.ac.in, "Prof. Shubhash Jadhav" <svjadhav@coe.sveri.ac.in>, Pooja Taralgatti <pdtaralgatti@coe.sveri.ac.in>, Mohua Biswas <msbiswas@coe.sveri.ac.in>, Anup Vibhute <asvibhute@coe.sveri.ac.in>, "Mr. Sachin Gavali" <srgavali@coe.sveri.ac.in>, Prashant Pawar <pawarpm@sveri.ac.in>, Vidhyarani Kshirsagar <vskshirsagar@coe.sveri.ac.in>, Vanita Jadhav CSE <vdjadhav@coe.sveri.ac.in>, "Prof. Mukund Pawar" <mukundpaw@sveri.ac.in>, Swapnil Padwale <sgpadwale@coe.sveri.ac.in>

Cc: Babruvahan Ronge <rongebp62@gmail.com>

Training & Placement Cell

Notice

All the HODs are hereby requested to carry out **Audio- Video Recording Interview** for all the students of SE&TE with immediate effect from 01/01/2019 for Second Year, it should start from 01/01/2019 & for Third Year, it should start from 25/01/2019.

The following points should be considered.

1. Everyday minimum 10 students interview should be conducted by concerned Departmental faculty members.
2. Each student should be given 5 minutes for the interview.
3. The soft copy of video recording should be given to the students.
4. Concerned departmental faculty should prepare the schedule for TE students, every day 10 students.
5. HODs should ensure that 100 % effectiveness & involvement of students and faculty members for this activity.
6. HODs Should ensure that each subject is covered from Second Year onward.
7. Concerned departmental Coordinator should maintain the record of Video recording as well as Attendance.

Note: Swpnil Padwale sir Kindly meet all the Coordinators and brief them about the same.

Coordinator: Mr. Swpnil Padwale

Mr. S.V. Jadhav - MECH
Ms. Mohua Biswas- ENTC
Mr. M.M. Shinde -CSE
Ms. P.D. Tarlatti

Note: #Kindly find attached along with. pdf file of the Interview guide for personal Interview.

Coordinators of Concerned departments are requested to prepare plan of Technical Subjects and ensure that each respective faculty members conduct the same.

Regards

Dr. Madhav Raul

Dean-Training-Placement & Industry Interaction,

Joint Treasurer Maharashtra Association of Training and Placement Officers [MATPO]

SVERI's College of Engineering, Pandharpur,

Gopalpur-Ranjani, Road, Gopalpur,

Dist: Solapur, Pin-413304.

Cell: 09545553881

Email: placement@sveri.ac.in

madhavcoep@gmail.com

URL: www.sveri.ac.in



HR Interview Questions_for_Freshers_with_best_Answers_and_Examples(1).pdf
761K



ShriVithal Education & Research Institute's

COLLEGE OF ENGINEERING, PANDHARPUR

3. No. 54, Gopalpur -Ranjani Road, Gopalpur, Pandharpur- 413 304, District: Solapur (Maharashtra) Tel.: 02186-6063, 9503103757, Toll Free No.: 1800-3000-4131, E-mail: coe@sveri.ac.in, Web: www.sveri.ac.in (Approved 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)



ISO 9001:2015



Date: 01/01/2019

Department of Electronics & Telecommunication Engineering
NOTICE

All the second year students are informed to note that **Audio Video Recording** interview sessions will be started from 03/01/2019. The batches for the sessions are displayed on the notice board. Attendance is mandatory for the sessions. In case of absenteeism you should inform one day before to the concerned faculty coordinator.

The following points should be considered.

1. Everyday minimum 10 students' interview should be conducted.
2. Each student should be given 5 minutes for the interview.
3. The soft copy of video recording should be given to the students.

(Ms. Mohua Biswas)

ENTC Coordinator

(Prof. Dr. A.S. Vibhute)

HOD ENTC

SCHEDULE OF MOCK INTERVIEWS



Shri Vithal Education & Research Institute's

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www.sveri.ac.in
ID: 9105549198

Department of Electronics & Telecommunication Engineering AUDIO-VIDEO RECORDING SCHEDULE SECOND YEAR STUDENTS

| Roll No. | Name of Student | Batch | Date |
|----------|-------------------------------|-------|------------|
| A1 | /AVADHUT RENUKA AUDUMBAR | I | 03/01/2019 |
| A2 | /CHAVAN RUTUJA SHIVAJI | | |
| A3 | /DUCHAL SNEHAL BALASAHEB | | |
| A4 | /GUGE ASHWINI DATTATRAY | | |
| A5 | /GUJARE PUJA CHANDRAKANT | | |
| B1 | BAGAL MADHURI NAVANATH | | 19/01/2019 |
| B2 | BENNESUR LAXMI IRANNA | | 08/02/2019 |
| B3 | BHAGANAGARE AISHWARYA RAJESH | | 22/02/2019 |
| B4 | BHARMA SWATI SHIVALINGAPPA | | 14/03/2019 |
| B5 | BHOSALE UTKARSHA BHARAT | | |
| A6 | /GUNJAL SUREKHA VILAS | II | 04/01/2019 |
| A7 | /HARANE SANJIVANI RAJU | | |
| A8 | /KALE ABHILASHA AVINASH | | |
| A9 | /KALE KOMAL KIRAN | | |
| A10 | /KHADEKAR NISHA SOUDAGAR | | |
| B6 | DEVAKATE GAYATRI CHICHALAPPA | | 20/01/2019 |
| B7 | DEVKAR NAMRATA DATTATRAY | | 09/02/2019 |
| B8 | DUDHAL RUTUJA SURESH | | 23/02/2019 |
| B9 | GAIKWAD AMRUTA BALASAHEB | | 15/03/2019 |
| B10 | GAWALI RENUKA SAHADEV | | |
| A11 | /MAHAJAN ISHITA PRADEEP | III | 05/01/2019 |
| A12 | /MENDHEGIRI SHWETA SHANTINATH | | |
| A13 | /MIRGANE SHRADDHA BHARAT | | |
| A14 | /MORE KOMAL NANASAHEB | | |
| A15 | /NAMDAS DIPIKA DNYANESHWAR | | |
| B11 | GHONGADE PRAJAKTA DILIP | | 21/01/2019 |
| B12 | GODASE SHRUTI NAGESH | | 10/02/2019 |
| B13 | INDI SHIVGANGA SUBHASH | | 24/02/2019 |
| B14 | JADHAV VRUSHALI ARUN | | 16/03/2019 |
| B15 | JAGTAP SURANJALI BANDU | | |

[Signature]

HEAD

Dep. of Electronics & Telecom. Engg.

C O C Pandharpur

| Roll No. | Name of Student | Batch | Date |
|----------|----------------------------|-------|--|
| A16 | /PATIL ASHVINI MARUTI | IV | 08/01/2019 22/01/2019 11/02/2019 25/02/2019 17/03/2019 |
| A17 | /PHULARE NIKITA SHAM | | |
| A18 | /REPAL SHIRADDHA ANIL | | |
| A19 | /SHIRAME AMRUTA DHANAJI | | |
| A20 | /VHARGAR MONALI VILAS | | |
| B16 | JAMAGI YOGINI SIDDHAPPA | | |
| B17 | KHATAKE ARPITA VIJAYKUMAR | | |
| B18 | KORAPE VAISHNAVI SANJAY | | |
| B19 | KUMBHAR SEEMA RAMDAS | | |
| B20 | MANE PRIYANKA SATISH | | |
| A21 | /WAGAJ PRATIKSHA HANUMANT | V | 10/01/2018 24/01/2019 12/02/2019 26/02/2019 18/03/2019 |
| A22 | /WAGAJ SONALI SHIVAJI | | |
| A23 | /WALEKAR SMITA MAHADEV | | |
| A24 | /WARE SAROJA SHAMRAO | | |
| A25 | BACHUTE BHUSHAN SIDDESHWAR | | |
| B21 | MANEPATIL AARTI SHAHAJI | | |
| B22 | MOLAK KOMAL TANAJI | | |
| B23 | MORE MAYURI ARVIND | | |
| B24 | MORE SUHASHINI BALAJI | | |
| B25 | MORE VAISHNAVI JAYSING | | |
| A26 | CHAVARE BHUSHAN MAHAVIR | VI | 11/01/2019 25/01/2019 14/02/2019 28/02/2019 19/03/2019 |
| A27 | DANURE AMIT GANPATRAO | | |
| A28 | DHANWATE UPENDRA NARSINHA | | |
| A29 | GURUJI GAURAV DATTATRAY | | |
| A30 | HODADE RUSHIKESH SOMNATH | | |
| B26 | NIRMALE RUTUJA NARAYAN | | |
| B27 | PATIL ASHVINI BHAUSAHEB | | |
| B28 | PRATIKSHA RAJARAM DHEKALE | | |
| B29 | PUJARI SAPANA SIDDHARAM | | |
| B30 | RANDIVE ASHWINI BRAMHADEV | | |
| A31 | KADAM OMKAR SUNIL | VII | 12/01/2019 27/01/2019 15/02/2019 01/03/2019 20/03/2019 |
| A32 | KOLI SUDARSHAN SOMARAYA | | |
| A33 | MORE RISHIKESH MACHINDRA | | |
| A34 | MULANI SALMAN SHAHAJAHAN | | |
| A35 | PACHAVE NITIN SUBHASH | | |
| B31 | SHAIKH SANIYA ABDULLA | | |
| B32 | SHELAK PUJA RAMCHANDRA | | |
| B33 | SHINDE JYOTI SANJAY | | |

Handwritten signature

| Roll No. | Name of Student | Batch | Date |
|----------|---------------------------------------|-------|--|
| A36 | SARWADKAR MANJUNATH SIDRAM | VIII | 13/01/2019 28/01/2019 16/02/2019 02/03/2019 22/03/2019 |
| A37 | SHAIKH IMRAN HAJISAB | | |
| A38 | ALDAR SUSHANT TANAJI | | |
| A39 | DARSHANALE SWAPNIL PRAKASH | | |
| A40 | KULKARNI PRATHMESHI PRAKASH | | |
| B36 | THENGAL PALLAVI VISHWAS | | |
| B37 | VANAVE SUCHITA BIBHISHAN | | |
| B38 | VIDHATE DNYANESHWARI GORAKH | | |
| B39 | WADTILE VAISHNAVI JANARDAN | | |
| B40 | WALUGADE PRATIKSHA ANKUSH | | |
| A41 | MORE VIKRAM ANKUSH | IX | 14/01/2019 29/01/2019 17/02/2019 03/03/2019 23/03/2019 |
| A42 | NANDAWATE SUJIT SUDHAKAR | | |
| A43 | SALUNKHE OMKAR ARUN | | |
| A44 | PATHAN SAMEER KHAJODDIN | | |
| A45 | PAWAR SANJAY SHANKAR | | |
| B41 | YADAV PRAJAKTA DHARMARAJ | | |
| B42 | DESHMUKH ABHISHEK VILAS | | |
| B43 | DESHPANDE RUSHIKESH SUHAS | | |
| B44 | GHODAKE SHUBHAM TUKARAM | | |
| B45 | JADHAV MAHESH SHIVAJI | | |
| A46 | UBALE SANTOSH DATATRAYA | X | 16/01/2019 30/01/2019 18/02/2019 11/03/2019 24/03/2019 |
| A47 | /KORAKE SAMIKSHA KAILAS | | |
| A48 | /MAGADE ANJALI NAMDEV | | |
| A49 | /MHAMANE SONALI MAHASIDHA | | |
| A50 | /MHAMANE AISHWARYA SANJAY | | |
| B46 | KATAKAMAWAR SHREENIVAS DATTATRAY | | |
| B47 | MASKE AKSHAY RAJENDRA | | |
| B48 | MOGAL IMRAN IKBAL | | |
| B 49 | MUKHARE VAIBHAV SURYAKANT | | |
| B50 | PATHAN JAMEER SALIM | | |
| A51 | /MULE SOUJANYA SUBHASH | XI | 17/01/2019 31/01/2019 19/02/2019 12/03/2019 25/03/2019 |
| A52 | /NAMADE MAYURI RAJKUMAR | | |
| A53 | /NIKTE GEETA PRASHANT | | |
| A55 | /PAWAR RUPALI RAJARAM | | |
| A56 | /RAJMANE MANALI SUNIL | | |
| B51 | SALUNKHE TUSHAR TUKARAM | | |
| B52 | SHAIKH SHOYEB AYUB | | |
| B53 | SURYA WANSHI CHANDRASHEKHAR NANASAHEB | | |
| B54 | THORAT ASHUTOSH RAMESH | | |
| B55 | VHASALE SAGAR APPASO | | |

| | | | |
|-----|------------------------------|-----|------------|
| A57 | /SHEMBADE JANHAVI DILIP | XII | 18/01/2019 |
| A58 | /WAGHMODE ASHWINI RAMCHANDRA | | 07/02/2019 |
| A59 | JAGTAP SANKET PRAMOD | | 21/02/2019 |
| A60 | PATIL VISHAL VIJAYKUMAR | | 13/03/2019 |
| A62 | SHINDE KARAN AUDUMBAR | | 26/03/2019 |
| B57 | PANDHARE NITIN VASUDEO | | |
| B58 | GHDAGE SHIVANI GANESH | | |
| B59 | MASAL AKSHAY GOVINDA | | |

M. Biswas

(Ms. Mohua Biswas)

ENTC Coordinator

Dr. A.S. Vibhute

(Prof. Dr. A.S. Vibhute)

HOD ENTC

Dep. of Electronics & Telecom. Engg.
C. Q. E. Pandharpur

MOCK INTERVIEW-ATTENDANCE SHEET



Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
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 10 9105544195



ATTENDANCE SHEET CLASS: SE BATCH-I ACADEMIC YEAR: 2018-19 SEMESTER-II

| Sr. No. | Div. & Roll No. | Name of the Student | 03/01/2019 | 19/01/2019 | 08/02/2019 | 22/02/2019 | 14/03/2019 |
|---------|-----------------|------------------------------|------------|------------|------------|------------|------------|
| 1 | A1 | /AVADHUT RENUKA AUDUMBAR | Ref | Ref | Ref | Ref | Ref |
| 2 | A2 | /CHAVAN RUTUJA SHIVAJI | Chavan | Chavan | AB | Chavan | Chavan |
| 3 | A3 | /DUCHAL SNEHAL BALASAHEB | Duchal | Duchal | Duchal | AB | Duchal |
| 4 | A4 | /GUGE ASHWINI DATTATRAY | Ashwini | AB | Ashwini | Ashwini | Ashwini |
| 5 | A5 | /GUJARE PUJA CHANDRAKANT | | | | | |
| 6 | B1 | BAGAL MADHURI NAVANATH | Bagal | Bagal | AB | Bagal | Bagal |
| 7 | B2 | BENNESUR LAXMI IRANNA | L.I.Ba | L.I.Ba | L.I.Ba | L.I.Ba | L.I.Ba |
| 8 | B3 | BHAGANAGARE AISHWARYA RAJESH | Aishwarya | Aishwarya | AB | Aishwarya | Aishwarya |
| 9 | B4 | BHARMA SWATI SHIVALINGAPPA | Bharm | Bharm | AB | Bharm | Bharm |
| 10 | B5 | BHOSALE UTKARSHA BHARAT | Bhosale | Bhosale | AB | Bhosale | Bhosale |

HEAD
 Dept of Electronics & Telecom: Engr.
 C.O.E. Pandharpur

SAMPLE ATTENDANCE SHEET



Shri Vitthal Education & Research Institute's

COLLEGE OF ENGINEERING, PANDHARPUR

P.B. No. 54, Gopalpur -Ranjani Road, Gopalpur, Pandharpur- 413 304, District: Solapur (Maharashtra) Tel.: 02186-6063, 9503103757, Toll Free No.: 1800-3000-4131, E-mail: coe@sveri.ac.in, Web: www.sveri.ac.in (Approved by I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur NBA Accredited all eligible UG Programmes, AAC Accredited Institute, Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune. ISO 9001-2015 certified Institute)



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ATTENDANCE SHEET

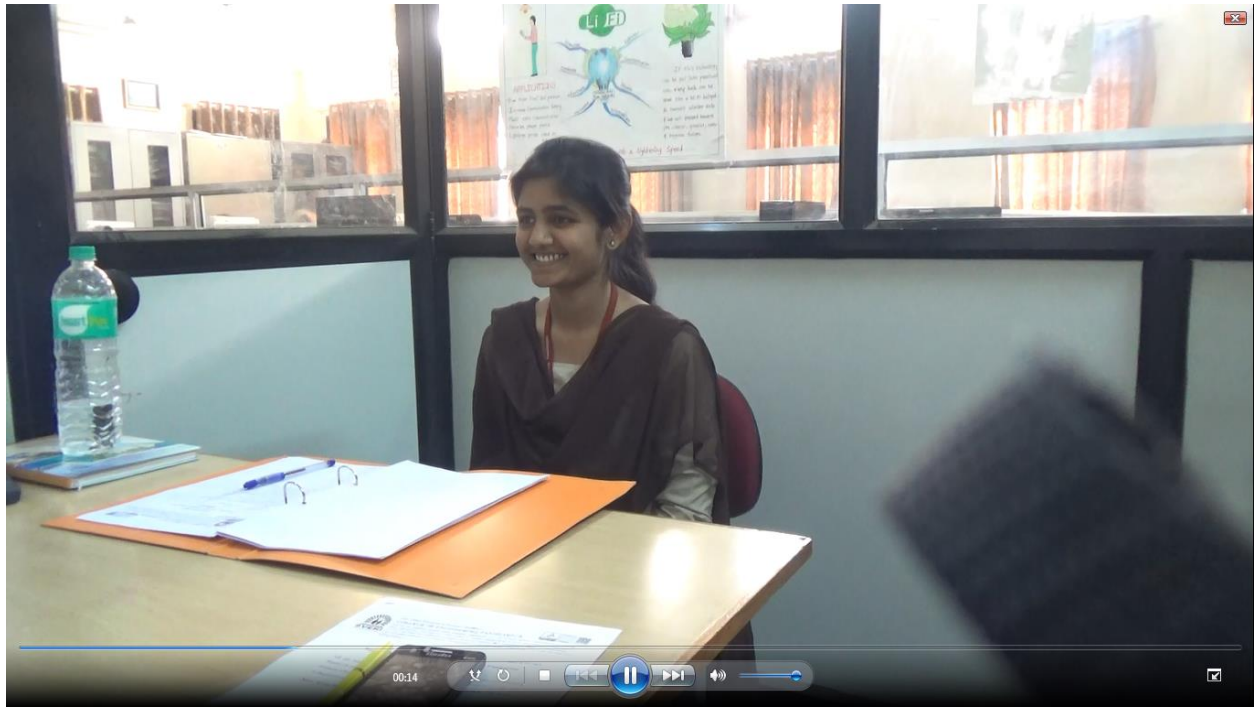
CLASS: SE BATCH-II ACADEMIC YEAR: 2018-19

SEMESTER-II

| Sr. No. | Div. & Roll No. | Name of the Student | 04/01/2019 | 20/01/2019 | 09/02/2019 | 23/02/2019 | 15/03/2019 |
|---------|-----------------|------------------------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 1 | A6 | /GUNJAL SUREKHA VILAS | <i>Sw</i> | <i>Sw</i> | <i>Sw</i> | <i>Sw</i> | <i>Sw</i> |
| 2 | A7 | /HARANE SANJIVANI RAJU | <i>AB</i> | <i>SRHear</i> | <i>AB</i> | <i>SRHear</i> | <i>SRHear</i> |
| 3 | A8 | /KALE ABHILASHA AVINASH | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> |
| 4 | A9 | /KALE KOMAL KIRAN | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> |
| 5 | A10 | /KHADEKAR NISHA SOUDAGAR | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> |
| 6 | B6 | DEVAKATE GAYATRI CHICHALAPPA | <i>devakate</i> | <i>devakate</i> | <i>devakate</i> | <i>devakate</i> | <i>AB</i> |
| 7 | B7 | DEVKAR NAMRATA DATTATRAY | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> |
| 8 | B8 | DUDHAL RUTUJA SURESH | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> | <i>AB</i> |
| 9 | B9 | GAIKWAD AMRUTA BALASAHEB | <i>GAIKWAD</i> | <i>GAIKWAD</i> | <i>AB</i> | <i>GAIKWAD</i> | <i>GAIKWAD</i> |
| 10 | B10 | GAWALI RENUKA SAHADEV | <i>AB</i> | <i>Gawali</i> | <i>Gawali</i> | <i>Gawali</i> | <i>Gawali</i> |

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HEAD
Dept of Electronics & Telecom. Engg.
C. O. E. Pandharpur



Experiential Learning through Usage of Visualization

- **Use Modern Engineering Tools**
- **Apply the basic engineering knowledge**
- **Life Long Learning**

NOTICE FOR USE OF SIMULATION SOFTWARES

| | | |
|---|--|---|
|  SVERI Engineering for Excellence | <p>SHRI VIITHAL EDUCATION & RESEARCH INSTITUTE'S COLLEGE OF ENGINEERING, PANDHARPUR 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</p> |  ISO 9001:2015  |
|---|--|---|

Date: 01/08/2017

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

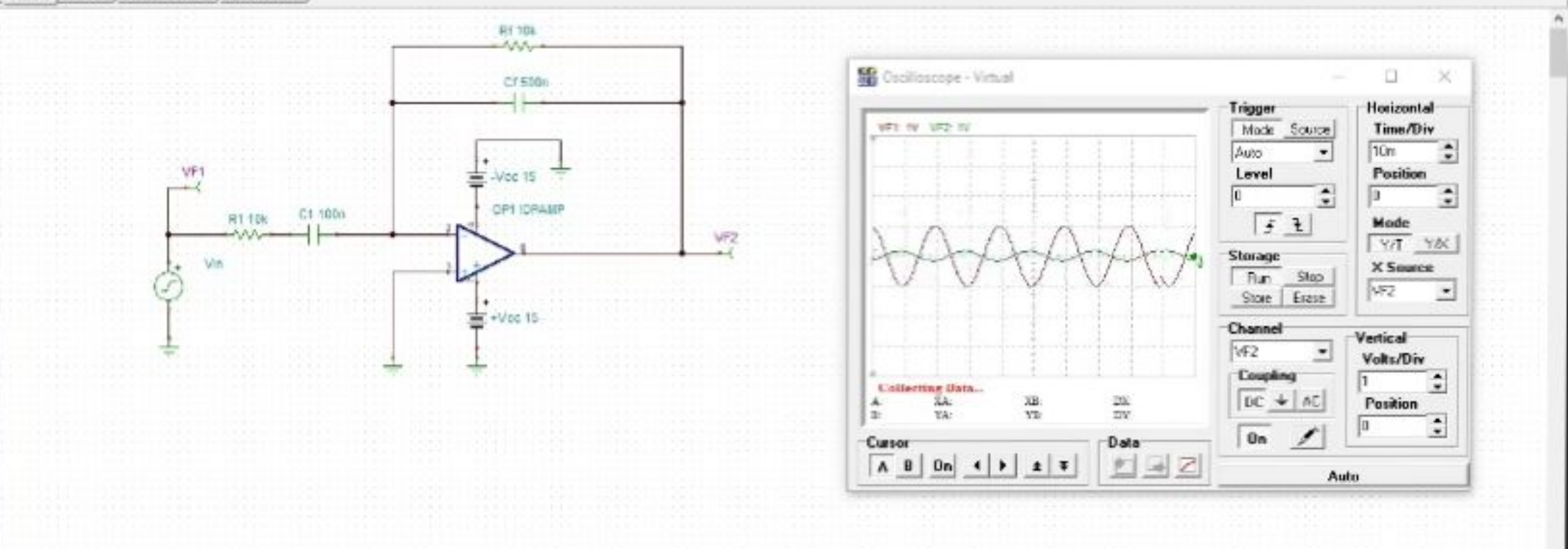
NOTICE

All faculty members are informed that following Simulation Softwares can be used for given subjects listed below:

| Sr. No. | Class | Name of the Subject | Name of the Software |
|---------|-------|---------------------|----------------------|
| 1 | SY | NTA | TINA, MULTISIM |
| 2 | SY | AIC | TINA, MULTISIM |
| 3 | SY | ECAD | TINA, MULTISIM |
| 4 | TY | DSP | MATLAB |
| 5 | TY | MIC | PROTEUS, KEIL, MPLAB |
| 6 | LY | IVP | MATLAB |
| 7 | LY | VLSI | XLINK |

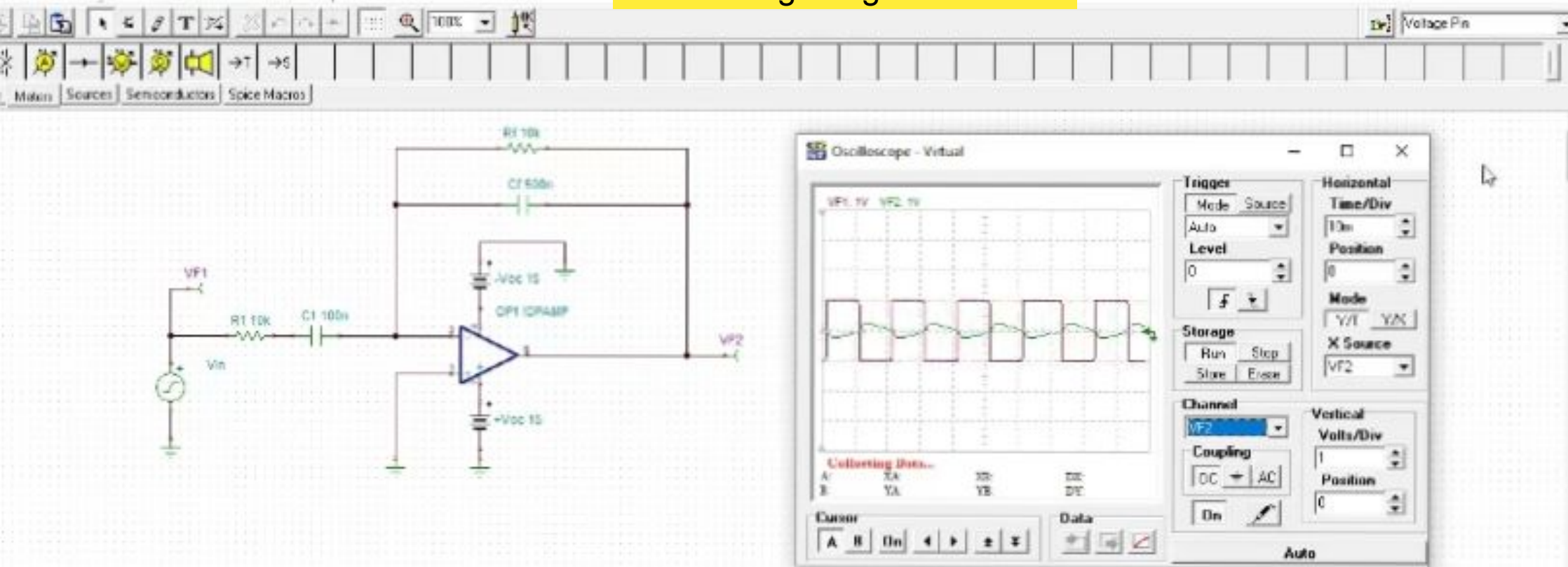

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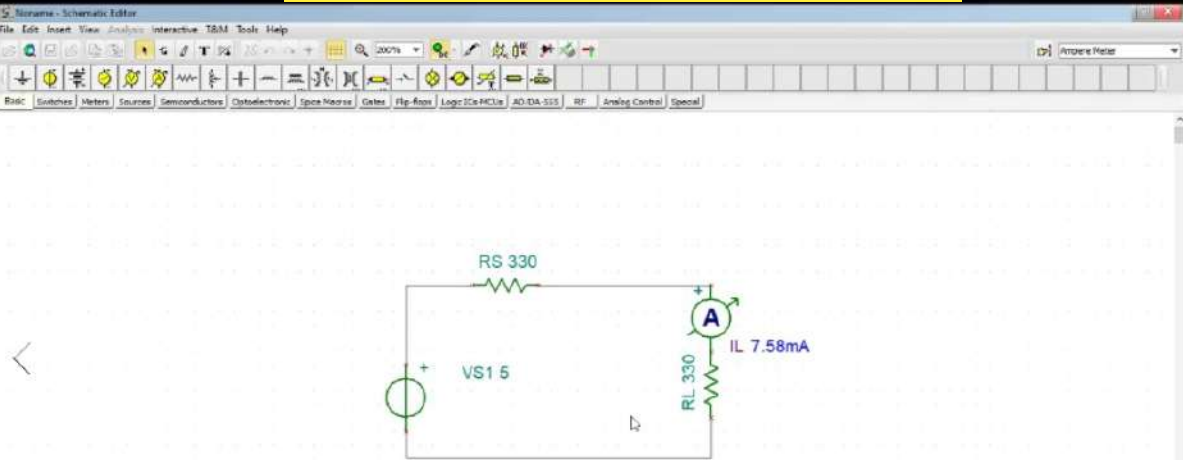
Expt: OPAMP as an Integrator using TINA Simulation Software

Sub: Analog Integrated Circuits



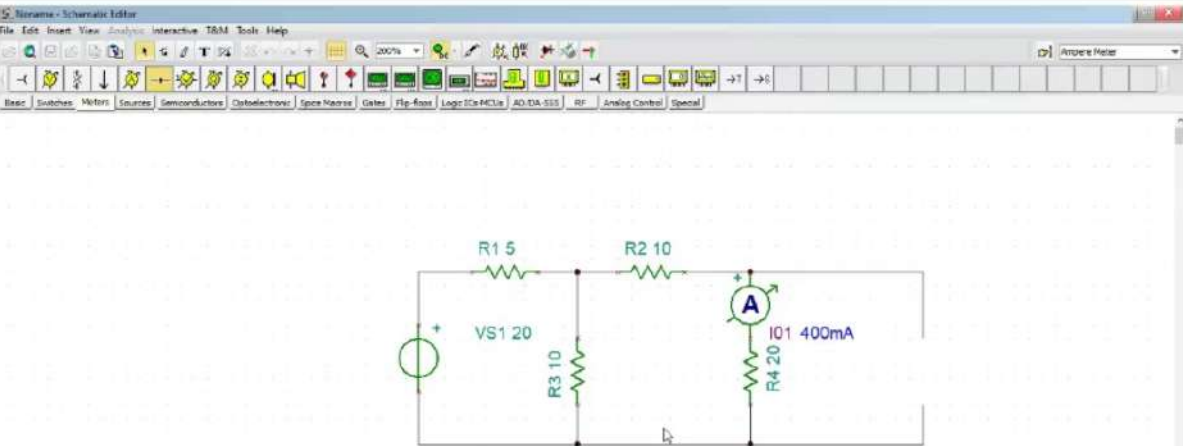
Expt: OPAMP as Integrator(Square wave as Input)

Sub: Network Theory and Analysis



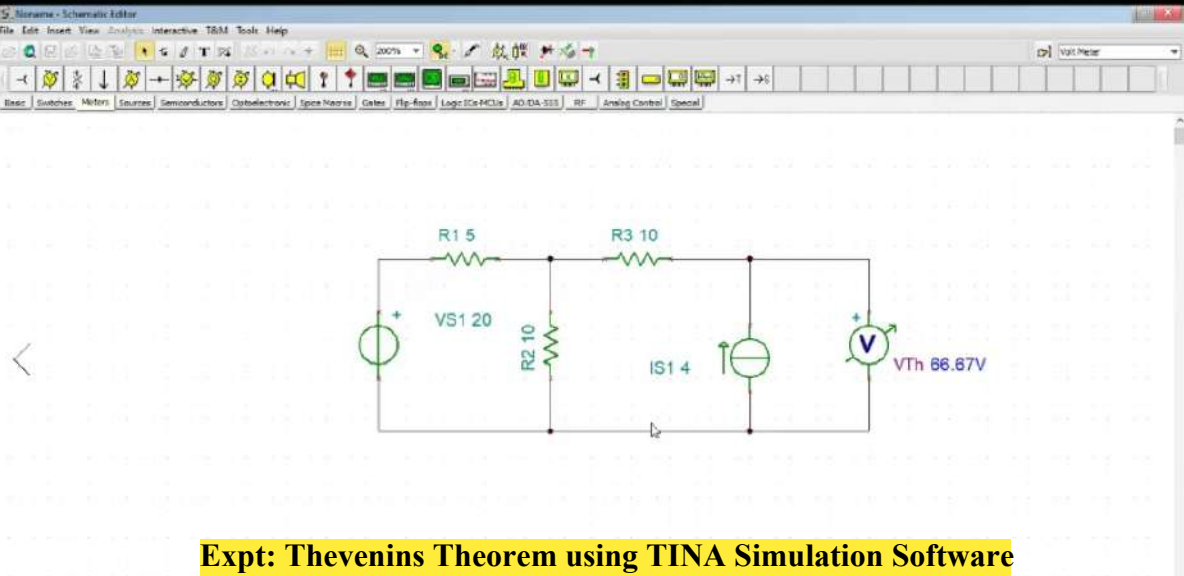
Expt: Maximum Power Transfer Theorem using TINA Simulation Software

Sub: Network Theory and Analysis



Expt: Superposition Theorem using TINA Simulation Software

Sub: Network Theory and Analysis



Experiential Learning through Research Oriented Equipment

- **Use Modern Engineering Tools**
- **Design/development of solutions**
- **Conduct investigations of complex problems**
- **Life Long Learning**



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

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Accredited by the Institute of Engineers (India), Kolkata and TCS, Pune ISO 9001-2015 Certified Institute



ISO 9001:2015



Department of Mechanical Engineering

Research Orientated Lab

| Sr. No. | Name of Lab | Lab Investment |
|---------|----------------------------|-----------------|
| 1. | Advanced Manufacturing Lab | Rs. 50,91,317/- |


(Dr. S. S. Wangikar)

H.O.D.

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Dept. of Mechanical Engg
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ISO 9001:2015





www.tuv.com
ID 3105046106

Department of Mechanical Engineering

Name of Lab: Advanced Manufacturing Lab

| Sr. No. | Lab Equipments | Qty. | Rate in Rs. | Total in Rs. |
|---------------------|---|------|-------------|--------------------|
| 1. | Both sided UV Exposure | 01 | 54,956/- | 54,956/- |
| 2. | Dynamic Mechanical Analyzer (Rheometer) | 01 | 12,51,712/- | 12,51,712/- |
| 3. | Spray Etching Machine | 01 | 1,01,250/- | 1,01,250/- |
| 4. | Vision measuring system Rapid-I V2015J LX | 01 | 6,04,149/- | 6,04,149/- |
| 5. | LED Screen | 01 | 18,250/- | 18,250/- |
| 6. | Peristaltic Pump | 01 | 30,938/- | 30,938/- |
| 7. | Twin Syringe Pump | 02 | 90,000/- | 90,000/- |
| 8. | 3D printing machine | 01 | 3,40,000/- | 3,40,000/- |
| 9. | Pressure Sensor | 03 | 28,350/- | 28,350/- |
| 10. | Pressure Data Logger (4 Channel) | 01 | 25,200/- | 25,200/- |
| 11. | LASER Engraving machine | 01 | 2,63,250/- | 2,63,250/- |
| 12. | CNC Micromachining station | 01 | 6,00,000/- | 6,00,000/- |
| 13. | Hot Plate with Magnetic Stirrier | 01 | 52,762/- | 52,762/- |
| 14. | Chemical Wet Bench | 01 | 4,30,500/- | 4,30,500/- |
| 15. | 3D Exposure & 3D Etching Machine | 01 | 12,00,000/- | 12,00,000/- |
| Total in Rs. | | | | 50,91,317/- |


(Mr. A. K. Parkhe)
Lab In-charge


(Dr. S. S. Wangikar)
HEAD,
Dept. of Mechanical Engg
C.O.E. Pandharpur.



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ISO 9001:2015



Department of Mechanical Engineering

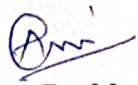
No. of Students Utilized Research Orientated Lab

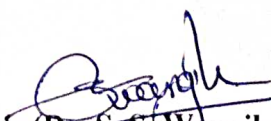
| Sr. No. | Name of Students | Class | Title of Project | Name of Guide | Academic Year |
|---------|----------------------------|--------|--|------------------|---------------|
| 1. | Mr. A. D. Sapkal | M.Tech | An Experiment Analysis and Simulation of 3D PCM Technology | Dr. A. A. Utpat | 2019-20 |
| 2. | Mr. Dattatray Waghmare | M.Tech | Process Optimization of PCM on 3D Surfaces | Dr. N. D. Misal | 2019-20 |
| 3. | Mr. Bandu A. Kambale | M.Tech | Process Optimization of 3D Photo Chemical Machining on an Internal & External Surfaces | Dr. A. A. Utpat | 2018-19 |
| 4. | Mr. Akash Pawar | M.Tech | An Experiment Analysis of Photo Chemical Marching using different Etchants | Dr. N. D. Misal | 2020-21 |
| 5. | Bile Rajkumar Prakash | B.E. | Design and development of microchannels by CO2 laser machine and their experimentation using soft lithography approach | Mr. A. K. Parkhe | 2018-19 |
| 6. | Burande Somesh Haribhau | | | | |
| 7. | Bawale Aakash Lakshmikanth | | | | |
| 8. | Jagtap Akash | | | | |
| 9. | Kumbhare Sachin V. | B.E. | Design and manufacturing of microgripper for compliant mechanism | Dr. N. D. Misal | 2018-19 |
| 10. | Bandgar Rupesh Balasaheb | | | | |
| 11. | Bagewadi Sagar Mallikarjun | | | | |
| 12. | Kachare Pravin Ramchandra | | | | |

(Mr. A. K. Parkhe)
Lab In-charge


(Dr. S. S. Wangikar)
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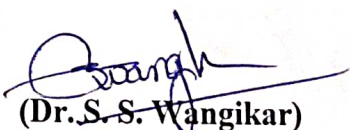
| Sr. No. | Name of Students | Class | Title of Project | Name of Guide | Academic Year |
|---------|---------------------------|-------|--|--------------------|---------------|
| 13. | Patil Pankaj Vitthal | B.E. | Design and development of miniature pump | Prof. S. V. Jadhav | 2018-19 |
| 14. | Pawar Digambar Sukhadev | | | | |
| 15. | Deshmukh Ashutosh Bhagwat | | | | |
| 16. | Mote Chetan Sukhadev | | | | |
| 17. | Mr. Nikhil V. Chavan | B.E. | Parametric Analysis for photochemical Machining of Aluminium Copper | Dr. S. S. Wangikar | 2019-20 |
| 18. | Mr. Rushikesh M. Bhagwat | | | | |
| 19. | Mr. Suraj S. Gaikwad | | | | |
| 20. | Mr. Shivam S. Shete | | | | |
| 21. | Mr. Shrinath Deshmukh | B.E. | Design and Fabrication of tree type micromixer with circular baffles | Prof. S.R.Gavali | 2019-20 |
| 22. | Mr. Kiran Dune | | | | |
| 23. | Mr. Onkar Waghmode | | | | |
| 24. | Mr. Shriram Masal | | | | |
| 25. | /Makar Supriya | B.E. | Effect of Rectangular Obstacle Size Variation on The Performance of the Microchannel | Prof. S. V. Jadhav | 2019-20 |
| 26. | /Kame Mansi | | | | |
| 27. | /Namde Pooja | | | | |
| 28. | /Sarvagod Manali | | | | |
| 29. | /Abhangrao Komal B. | B.E. | Design, Fabrication and Analysis of micro-mixer With circular baffles used in micro-fluidics application | Dr. R. R. Gidde | 2019-20 |
| 30. | /Kale Pallavi Rajkumar | | | | |
| 31. | /Lamgunde Pooja S. | | | | |
| 32. | /Pujari Aruna G. | | | | |
| 33. | Shubham Anil Raut | B.E. | Design & Development of Micro-channels using LASER Machining and its Experimental & Numerical study on mixing length | Mr. A. K. Parkhe | 2020-21 |
| 34. | Sachin Kisan Devkate | | | | |
| 35. | Saurabh Mahadev Shinde | | | | |
| 36. | Mahesh Gunvant Mane | | | | |


 (Mr. A. K. Parkhe)
 Lab In-charge


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 HEAD,
 Dept. of Mechanical Engg
 C.O.E. Pandharpur.

| Sr. No. | Name of Students | Class | Title of Project | Name of Guide | Academic Year |
|---------|-------------------------------|-------|---|--------------------|---------------|
| 37. | /Ashture Chandraprabha Balaji | B.E. | Study the Material Removal Rate for Aluminium metal by using Photochemical | Dr. A. A. Utpat | 2020-21 |
| 38. | /Kambale Pooja Dilip | | | | |
| 39. | /Ashture Chandraprabha Balaji | | | | |
| 40. | /Kambale Pooja Dilip | | | | |
| 41. | /Bhumkar Manasi Dinesh | B.E. | Manufacturing and characterization of the master moulds used to fabricate | Dr. R. R. Gidde | 2020-21 |
| 42. | /Ghogale Mansi Sanjay | | | | |
| 43. | /Muskan Muktar Attar | | | | |
| 44. | /Chavan Sonali Umesh | | | | |
| 45. | /Shivani Sanjay Kothawale | B.E. | Parametric Optimization for CO2 Laser Machining of different types of wood. | Dr. S. S. Wangikar | 2020-21 |
| 46. | /Anjali Pandurang Gavali | | | | |
| 47. | /Gauri Ramchandra Gore | | | | |
| 48. | /Bhosale Pranoti Ramchandra | | | | |


(Mr. A. K. Parkhe)
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 H.O.D.
 HEAD,
 Dept. of Mechanical Engg
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Photos of Facilities under R & D

1. Advanced Manufacturing Lab



2. LASER Cutting & Engraving Machine



3. 3D Printing Machine & Micro Milling



4. Rapid-I Vision System & Rheometer



5. 3D PCM Machine



6. Chemical Wet Bench



Experiential Learning through Learning Summary Chart

- **Engineering knowledge**
- **Effective presentations**
- **Life Long Learning**

SUCCESSIVE DIFFERENTIATION

ROLLE'S THEOREM

- 1) $F(x)$ is continuous in (a, b)
- 2) $F(x)$ is differentiable function in (a, b)
- 3) $F(a) = F(b)$ then there exist one point $x = c \in (a, b)$ such that $F'(c) = 0$

LAGRANGE'S MEAN VALUE THEOREM

$F'(x)$ exist in (a, b) there exist one point $x = c \in (a, b)$ then

$$F'(c) = \frac{F(b) - F(a)}{b - a}$$

SET-I

Results:-

- 1) $y = e^{ax} \Rightarrow y_n = a^n e^{ax}$
- 2) $y = a^{mx} \Rightarrow y_n = (\log a)^n m^n a^{mx}$
- 3) $y = \sin(ax+b) \Rightarrow y_n = a^n \sin(ax+b+n\pi/2)$
- 4) $y = \cos(ax+b) \Rightarrow y_n = a^n \cos(ax+b+n\pi/2)$
- 5) $y = k^x \sin(ax+b) \Rightarrow y_n = k^x r^n \sin(ax+b+n\phi)$

$$r = \sqrt{(\log k)^2 + a^2}$$

$$\phi = \tan^{-1}(a/\log k)$$
- 6) $y = k^x \cos(ax+b) \Rightarrow y_n = k^x r^n \cos(ax+b+n\phi)$

$$\phi = \tan^{-1}(a/\log k)$$
- 7) $y = e^{ax} \sin(bx+c) \Rightarrow y_n = e^{ax} r^n \sin(bx+c+n\phi)$ $r = \sqrt{a^2 + b^2}$

$$\phi = \tan^{-1}(b/a)$$
- 8) $y = e^{ax} \cos(bx+c) \Rightarrow y_n = e^{ax} r^n \cos(bx+c+n\phi)$ $r = \sqrt{a^2 + b^2}$

$$\phi = \tan^{-1}(b/a)$$
- 9) $y = \frac{1}{(ax+b)^m} \Rightarrow y_n = \frac{(-1)^n (m+n-1)! a^n}{(ax+b)^{m+n} (m-1)!}$
- 10) $y = \log(ax+b) \Rightarrow y_n = \frac{(-1)^{n-1} (m+n-2)! a^n}{(m-1)! (ax+b)^{m+n-1}}$

CAUCHY MV THM

- $F(x)$ & $g(x)$ be real valued function in $[a, b]$
- 1) $f(x)$ and $g(x)$ are continuous function in $[a, b]$
 - 2) $f(x)$ and $g'(x)$ exist in (a, b)
 - 3) $g'(x) \neq 0$, then there exist one point $x = c \in (a, b)$ such that

$$\frac{F'(c)}{g'(c)} = \frac{F(b) - F(a)}{g(b) - g(a)}$$

Set II

Results:-

- 1) $2 \sin A \cos B = \sin(A+B) + \sin(A-B)$
- 2) $2 \cos A \sin B = \sin(A+B) - \sin(A-B)$
- 3) $2 \cos A \cos B = \cos(A+B) + \cos(A-B)$
- 4) $2 \sin A \sin B = \cos(A-B) - \cos(A+B)$
- 5) $\sin^2 A = \frac{1 - \cos 2A}{2}$
- 6) $\cos^2 A = \frac{1 + \cos 2A}{2}$
- 7) $\cos^3 A = \frac{\cos 3A + 3 \cos A}{4}$
- 8) $\sin^3 A = \frac{3 \sin A - \sin 3A}{4}$

SET III

LEIBNITZ Theorem

If $y = u \cdot v$ - u, v differentiable function of n^{th} order derivative of y is given by,

If $y = u \cdot v$ then,

$$y_n = u_n v + n u_{n-1} v_1 + \frac{n(n-1)}{2!} u_{n-2} v_2 + \dots + u v_n$$



Successive Differentiation



n^{th} derivative of standard functions :-

- 1) IF $y = e^{ax}$ $y_n = a^n \cdot e^{ax}$
- 2) IF $y = a^{mx}$ $y_n = m^n a^{mx} (\log a)^n$
- 3) $y = (ax+b)^m$ $y_n = a^n m! (m-1)! a^n$
- 4) $y = \frac{1}{(ax+b)^m}$ $y_n = (-1)^n (m-1)! a^n$
- 5) $y = \frac{1}{(ax+b)^m}$ $y_n = (-1)^n n! a^n$
- 6) $y = \log(ax+b)$ $y_n = (-1)^{n-1} (n-1)! a^n$

Partial Fraction :-

1. $\frac{Px+Q}{(x+a)(x+b)} = \frac{A}{(x+a)} + \frac{B}{(x+b)}$
2. $\frac{Px^2+Qx+C}{(x+a)(x+b)^2} = \frac{A}{(x+a)} + \frac{B}{(x+b)} + \frac{C}{(x+b)^2}$

• IF Deg. of N^{r} > Deg. of D^{r}
Then go For actual division.

n^{th} derivative of Trigonometric Function

- 1) $y = \sin(ax+b)$ $y_n = a^n \sin(ax+b+n\pi/2)$
- 2) $y = \cos(ax+b)$ $y_n = a^n \cos(ax+b+n\pi/2)$
- 3) $y = e^{ax} \sin(bx+c)$ $y_n = r^n e^{ax} \sin(bx+c+n\phi)$
- 4) $y = e^{ax} \cos(bx+c)$ $y_n = r^n e^{ax} \cos(bx+c+n\phi)$

Formulae :-

- 1) $2 \sin A \cdot \sin B = \cos(A-B) - \cos(A+B)$
- 2) $2 \sin A \cdot \cos B = \sin(A+B) + \sin(A-B)$
- 3) $2 \cos A \cdot \cos B = \cos(A+B) + \cos(A-B)$
- 4) $2 \cos A \cdot \sin B = \sin(A+B) - \sin(A-B)$
- 5) $\cos^2 A = \frac{1+\cos 2A}{2}$ $\sin^2 A = \frac{1-\cos 2A}{2}$
- 7) $\sin 2A = 2 \sin A \cdot \cos A$
- 8) $\cos 2A = \cos^2 A - \sin^2 A$
 $= 2 \cos^2 A - 1$
 $= 1 - 2 \sin^2 A$

Leibnitz th^m :-

If $y = u \cdot v$ where u, v are the Functions of x then,

$$y_n = u_n v + n \cdot u_{n-1} v_1 + \frac{n(n-1)}{2!} u_{n-2} v_2 + \frac{n(n-1)(n-2)}{3!} u_{n-3} v_3 + \dots + u v_n$$

Second type of Leibnitz th^m :-

In this type we generally proceed according to following steps :-

- 1) First express y in terms of x
- 2) DIFF. both sides w.r.to x & simplify.
- 3) Again diff. both sides and simplify it is require.
- 4) Then apply Leibnitz th^m term by term to get required result with simplification.

Experiential Learning through Industry Expert/ Researchers

- **Engineering knowledge**
- **Effective presentations**
- **Life Long Learning**

SUMMARY SHEET



SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR
DEPARTMENT OF ELECTRONIC & TELECOMMUNICATION ENGINEERING
SUMMARY OF INDUSTRY EXPERT/RESERACHERS LECTURES

| Sr. No. | Academic Year | Class | No. of Sessions | Total |
|---------|---------------|---------|-----------------|-------|
| 1. | 2017-18 | SE | 07 | 35 |
| | | TE | 09 | |
| | | BE | 16 | |
| | | For ALL | 03 | |
| 2. | 2018-19 | SE | 08 | 24 |
| | | TE | 10 | |
| | | BE | 06 | |
| 3. | 2019-20 | SE | 10 | 28 |
| | | TE | 12 | |
| | | BE | 06 | |

A handwritten signature in blue ink, appearing to be 'D. J. Singh' or similar, written over a circular stamp.

HOD ENTC

HEAD
Dept of Electronics & Telecom. Engrg.
S V E R I Pandharpur

DETAILS OF GUEST LECTURE (2017-18)

SVERI's College of Engineering Pandharpur. Dept-Electronics & Telecommunication Engineering

Guest Lecture Data For Academic Year 2017-18

| Sr.No | Date | Name of Expert | Industry/Institute | Contact no. | E-mail | Class | No. of Student | Topic | No. of Hours |
|-------|-----------------|----------------------------|--------------------------------------|-------------|---------------------------------|---------------------|----------------|--|--------------|
| 1 | 14/15-07-2017 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE ENTC | 80 | SatCom | 5 |
| 2 | 7/26/2017 | Mr. Sagar Joshi | Schneider Electric Bangalore | 9850674675 | joshi.sagar@gmail.com | BE ENTC | 62 | Product design | 2 |
| 3 | 8/4/2017 | Dr. S N Kore | WCE, sangli | 9970175105 | snkore@yahoo.com | SE ENTC | 42 | Self Learning Approach | 2 |
| 4 | 8/5/2017 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | BE ENTC | 75 | Product development activity based learning | 4 |
| 5 | 11/12-08-2017 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE ENTC | 80 | SatCom | 5 |
| 6 | 8/21/2017 | Mr. Samudra Gupta Talukdar | Tutelminds, Mumbai | 9930560586 | samudragupta.talukdar@gmail.com | BE ENTC | 88 | Industry Employability | 2 |
| 7 | 8/27/2017 | Mr. Makarand Jogalekar | TIBCO Software Inc | | | ENTC students | | Industry Expectations | 2 |
| 8 | 8/29/2017 | Mr. Rajendrakumar Saraf | Viraj Envirozing India Pvt. Ltd Pune | | | SE A | 53 | Development of Listening ability in Engg. Students | 5 |
| 9 | 9/1/2017 | Mr. G K Satyanarayana | Electronics corp of India, HYD | 9440418545 | gks@ecil.co.in | ENTC students | | Development in Telecom Sector | 2 |
| 10 | 9/3/2017 | Mr. Jadhav Vijay Kundan | Chatrapati Academy pandharpur | 9960572133 | vijaykjadhav@gmail.com | BE ENTC | 75 | Career through competitive exams | 1 |
| 11 | 9/9/2017 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | BE ENTC | 80 | CCN | 4 |
| 12 | 18/19-09-2017 | Mr. S B Joglekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | TE | 60 | Microprocessor | 13 |
| 13 | 22/23-09-2017 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE ENTC | 80 | SatCom | 4 |
| 14 | 9/23/2017 | Dr. B G Patil | WCE, sangli | 9860918576 | babasaheb.patil@gmail.com | SE(B) | 72 | Analog Comm | 5 |
| 15 | 10/6/2017 | Mr. Milind Sohani | IIT Powai, Mumbai | | | TE ENTC | 100 | Role of Engineers in societal development | 2 |
| 16 | 10/7/2017 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | TE ENTC | 104 | Product Manufacturing | 2 |
| 17 | 7.8-10-2017 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | SE ENTC | 70 | Robotics, PA System | 4 |
| 18 | 9 to 11-10-2017 | Mr. S B Joglekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | SE(B), TE(A), BE(A) | 150 | Microprocessor, DT | 18 |
| 19 | 12/16/2017 | Mr. Manuti Yadav | Philips, Pune | 9822731155 | online_sanju@yahoo.co.in | TE ENTC | 120 | Trends in electronic industry | 2 |
| 20 | 1/1/2018 | Dr. Madhuri A Joshi | COEP, Pune | 9822013631 | punemajoshi@gmail.com | BE ENTC | 90 | Machine learning for Image Processing | 2 |
| 21 | 1/2/2018 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE ENTC | 90 | MCT | 2 |
| 22 | 1/7/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | BE ENTC | 75 | Cloud Computing | 2 |
| 23 | 2/2/2018 | Rohan Kelkar | Consultant, Mumbai | 9767107291 | rohankelkar99@gmail.com | BE ENTC | 80 | campus to corporate & beyond | 2 |
| 24 | 2/2/2018 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE ENTC | 62 | MCT | 2 |
| 25 | 2/3/2018 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | TE ENTC | 120 | How to formulate problem statement for project | 2 |
| 26 | 2/25/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | BE ENTC | 75 | Industrial Revolution 4 | 2.5 |
| 27 | 2/25/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | TE ENTC | 90 | Importance of Industrial Visit | 1 |
| 28 | 3/5/2018 | Mr. Sajeed S Mulla | SSPM, Kankawali | 8087831306 | sajeeds@gmail.com | TE ENTC | 96 | RME | 4 |
| 29 | 3/30/2018 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE B | 45 | MCT | 2 |
| 30 | 3/31/2018 | Dr. S K. Dixit | WIT Solapur | 9850077012 | dixitsk1@yahoo.com | BE A | 46 | MCT | 2 |
| 31 | 3/31/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | TE ENTC | 105 | Basics of product design, conceptualization of Idea and component analysis | 2 |
| 32 | 4/1/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | SE ENTC | 118 | Product design basics | 2 |
| 33 | 4/2/2018 | Mr. S B Joglekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | TE (B) ENTC | 52 | MCA | 4 |
| 34 | 6/15/2018 | Dr. S K. Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | SE | 80 | Communication Engineering | 2 |
| 35 | 6/23/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | SE | 80 | Artificial Intelligence | 2 |

(W)
 HOD ENTC

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Dept. of Electronics & Telecom. Engrg.
A. Q. E. Pandharpur

SAMPLE OF GUEST LECTURE RECORD E&TC

SVRI's College of Engineering Pandharpur.

Electronics & Telecommunication Engineering

Dept-

Guest Lecture Data For Academic Year 2018-19

| Sr.No. | Date | Name of Expert | Industry/Institute | Contact no. | E-mail | Class | No. of Students | Topic | No. of Hours |
|--------|---------------|--------------------------------|--|--------------|-------------------------------|----------------|-----------------|--|--------------|
| 1 | 7/8/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | BE | 110 | Problem identification & project Implementation | 4 |
| 2 | 7/15/2018 | Dr. S K Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE | 98 | SatCom | 4 |
| 3 | 8/24/2018 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | SE | 110 | Opportunities in Telecomm sector | 2 |
| 4 | 21,22-09-2018 | Dr. S K Dixit | WIT Solapur | 9850077011 | dixitsk1@yahoo.com | BE | 45 | SatCom | 4 |
| 5 | 9/21/2018 | Dr. Satishkumar S Chavan | Don Bosco Institute, Mumbai | 022-25040508 | satish@dbit.in | SE | 55 | Become expert in writing a journal paper | 1 |
| 6 | 9/22/2019 | Rakesh A Dhasade | TCS, Pune | 9766924951 | radhasade@gmail.com | TE | 45 | project Management and applications | 2 |
| 7 | 9/27/2018 | Virendra Pawar | Vodafone Mobile Services Limited, Mumbai | 9890863930 | virendrapawar@live.in | BE | 90 | Opportunities in Telecomm sector | 2 |
| 8 | 9/28/2018 | Rahul Y Jagtap | General Industrial Controller, Mumbai | 8850138300 | jagtap rahul@yahoo.co.in | TE | 111 | microcontroller & Embedded | 1 |
| 9 | 9/30/2018 | Rahul Chaudhari | Alight Solution, Mumbai | 9271874442 | rahulchaudharilife@gmail.com | TE | 105 | Software project management | 3 |
| 10 | 9/30/2018 | Mr. S B Jogalekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | BE | 98 | VLSI | 6 |
| 11 | 10/1/2018 | Mr. S B Jogalekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | SE | 115 | DT | 4 |
| 12 | 10/1/2018 | Mr. S B Jogalekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | TE | 105 | Microcontroller | 2 |
| 13 | 10/2/2018 | Mr. Sudhir Mateti | Syntel smart teleturns | 9922962162 | smateti@synteltelecom.com | SE, TE | 163 | Exposure to ENT C Engg | 2 |
| 14 | 10/6/2018 | Mr. Renukanandan Aurangabadkar | Digitas, Mumbai | 8861812727 | nandan007a@gmail.com | TE | 117 | Career opportunities in data analyst | 2 |
| 15 | 1/6/2019 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | BE | | Campus recruitment | 5 |
| 16 | 1/27/2019 | Mr. Prabhudayal Tiwari | TATA Motors, Pune | 9990446564 | prabhudayaltiware@gmail.com | SE | 112 | Emerging trends in Industry | 1 |
| 17 | 1/27/2019 | Dr. S N Talbar | SGGS, Nanded | 9850978050 | sntalbar@sggs.ac.in | TE | 80 | Opportunities in the field of IoT & Embedded sys | 4 |
| 18 | 1/31/2019 | Mr. Vinod S. Mali | Sai consultancy, Pune | | malivinod1007@gmail.com | TE | 112 | Industrial Approach for Interview | 2 |
| 19 | 2/23/2019 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | SE ENT C & CSE | 98 | 5G Incubation centre | 4 |
| 20 | 9/10-03-2019 | Mr. S B Jogalekar | Kannad Services, sangli | 9422040871 | sanjayjoglekar@rediffmail.com | SE | 117 | Operational Amplifier | 13 |
| 21 | 3/10/2019 | Sachin M. Misal | Avlon Technology, Pune | 8698382624 | sachin.misal@gmail.com | TE | 64 | application of EASD in Embedded area | 2 |
| 22 | 3/30/2019 | Sagar D. Pise | Arcelor neel tailored pvt ltd | 9096253028 | sagar.pise@jbmggroup.com | TE A | 52 | Industry expectations from freshers | 1 |
| 23 | 3/30/2019 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | SE ENT C | 51 | Design Fobia | 5 |

HOD ENT C



HEAD

Dept. of Electronics & Telecom. Engg.
P. Q. C. Pandharpur

GUEST LECTURE DETAILS (2019-20)

SVERI's College of Engineering Pandharpur.
Dept-Electronics & Telecommunication Engineering

Guest Lecture Data For Academic Year 2019-20

| Sr.No. | Date | Name of Expert | Industry/Institute | Contact no. | E-mail | Class | No. of Students | Topic | No. of Hours |
|--------|---------------|------------------------|----------------------|-------------|-------------------------------|-------------|-----------------|--|--------------|
| 1 | 7/20/2019 | Dr. Munir Sayyad | JIO, Mumbai | 7738189979 | munirsayyad@gmail.com | SE ENTC | 65 | Smart City Vision | 2 |
| 2 | 7/21/2019 | Dr. S.N. Kore | WCE, sangli | 9970175105 | snkore@yahoo.com | SE ENTC | 63 | Digital Techniques | 2 |
| 3 | 8/24/2019 | Pramod B. Sanghai | UBI | 9422587765 | praomodsanghai108@gmail.com | SE | 32 | Carrer guidance | 2 |
| 4 | 8/27/2019 | Vivek Deshpande | Director | 9880763070 | vivek_v_deshpande@yahoo.com | BE | 110 | Research based projects | 2 |
| 5 | 8/27/2019 | P.W. Kelkar | Emeritus Professor | 8308821108 | padmakar_kelkar@gmail.com | BE | 110 | Research based projects | 1 |
| 6 | 8/28/2019 | Sudarshan Natu | Emeritus Professor | 9822068430 | | BE | 105 | Research based projects | 2 |
| 7 | 9/8/2019 | Pramod B. Sanghai | UBI | 9422587765 | praomodsanghai108@gmail.com | TE | 102 | Carrer guidance | 2 |
| 8 | 9/27/2019 | Dr. P.W. Kelkar | Emeritus Professor | 8308821108 | padmakar_kelkar@gmail.com | BE | 109 | Innovative approach in projects | 4 |
| 9 | 10/5/2019 | Aniruddha Kulkarni | Industry | 9421357264 | rflabsolutions2019@gmail.com | TE | 105 | Antenna | 2 |
| 10 | 10/6/2019 | Mrs Alaknanda S. Patil | JSPM, Narhe | 9423391331 | aspatil_pvpit@gmail.com | BE | 110 | Image and video processing | 4 |
| 11 | 12/28/2019 | Dr. Narayankhedkar | MGM college, Mumbai | | | TE | 50 | effect of wireless communication on human | 3 |
| 12 | 04/05-01-2020 | Dr. Munir Sayyad | Adjunct Prof. | 7738189980 | munirsayyad@gmail.com | SE, TE | | | 3 |
| 13 | 1/5/2020 | Narayan T. Khushnure | Atos Pvt Ltd | 9028107062 | nkhushnure@gmail.com | TE(A) | 42 | Recent trends in Industry | 1 |
| 14 | 1/10/2020 | Nishant Tendulkar | Infosys Ltd | 9970891812 | nishant_tendulkar@infosys.com | TE(B) | 43 | Guidance | 3 |
| 15 | 1/12/2020 | Sharad R. Yadav | TATA Tech. Pune | 9096121379 | sharadrttyl@tatamotors.com | TE(A) | 45 | GAP between Academic & Industry | 4 |
| 16 | 1/13/2020 | Ramesh H. Adavi | Emeritus Professor | 9673010222 | ramesh.adavi@gmail.com | SE | 90 | Life skill- critical thinking | 2 |
| 17 | 1/14/2020 | Sudarshan Natu | Emeritus Professor | 9822068430 | | TE | 85 | IoT | 3 |
| 18 | 1/28/2020 | Dr. Anant V. Patki | Scientist, ISRO | | | SE, TE | 185 | career Guidance | 2 |
| 19 | 2/2/2020 | Dr. Munir Sayyad | Adjunct Prof. | 7738189979 | munirsayyad@gmail.com | SY Students | 45 | IOT architecture | 3 |
| 20 | 2/9/2020 | Dheeraj C. Muttin | Kmeen Agro Pvt. Ltd. | 9595758532 | | TE | 20 | PLC in Automation | 1 |
| 21 | 2/9/2020 | Dheeraj C. Muttin | Kmeen Agro Pvt. Ltd. | 9595758533 | | BE | 53 | IoT & applications | 1 |
| 22 | 2/17/2020 | Nisarg R. Dongare | | 8698800448 | | TE | 50 | Emerging Trends in ENTC | 2 |
| 23 | 24,25-02-2020 | Ramesh H. Adavi | Emeritus Professor | 9673010222 | ramesh.adavi@gmail.com | SY, TE | 120 | critical thinking | 6 |
| 24 | 24,25-02-2020 | Dr. P.W. Kelkar | Emeritus Professor | 8308821108 | padmakar_kelkar@gmail.com | SY | 55 | Project discussion | 2 |
| 25 | 12_28-05-2020 | Dr. P.W. Kelkar | Emeritus Professor | 8308821108 | padmakar_kelkar@gmail.com | | | IIC meeting, Project discussion, Lean Canvas | 11 |
| 26 | 29,30-05-2020 | Dr. Munir Sayyad | Adjunct Prof. | 7738189979 | munirsayyad@gmail.com | SE | 50 | Block chain | 6 |

HOD ENTC

HEAD
Dept. of Electronics & Telecom. Engg.
S. V. E. Pandharpur

SVERIS's College of Engineering, Pandharpur

Electronics and Telecommunication Department

Guest/ Expert Lecture Report

Date: 22/09/18

| | | | |
|----|------------------------|--|---------------------|
| 1 | Name of Expert Faculty | Mr. Rakesh A. Dhasade / Dhasade ; | |
| 2 | Affiliation | Adjunct Professor/ Emeritus Professor - Academics/ Industry | |
| 3 | Correspondence | Team leader - Tata Consultancy services Pune. 10+ years experience. | |
| 4 | E-mail & Contact no | 9766924951 | radhasade@gmail.com |
| 5 | Date & Time | 22/9/18 at 2.15 PM | |
| 6 | Beneficiary | Students/ Faculty students: Class- <u>TE</u> Div- <u>B</u> | |
| 7 | Content Covered | <input checked="" type="checkbox"/> Curriculum <input type="checkbox"/> Curriculum gap <input type="checkbox"/> Content beyond syllabus | |
| 8 | Topic of Lecture | Project management & Engg. Appln. | |
| 9 | Details of Lecture | <ul style="list-style-type: none"> - Need of communication. - Application of communication. - Requirement of Industry - C, C++, Java, - project management - Application of Electronics. - why to search for job. - How to start small scale industry | |
| 10 | COS (if applicable) | - | |
| 11 | POs mapped | 4, 5, 8, 10, 12 | |

(Signature)

Sign of Expert

(Signature)

Sign of CC

(Signature)

Sign of HOD

HEAD

Dept. of Electronics & Telecom. Engg.
C.O.E. Pandharpur



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE'S

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Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.

(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

E-mail :- coe@sveri.ac.in

Date: 22/9/18

Department of Electronics and Telecommunication Engineering

To,
The Principal,
SVERI's COE,
Pandharpur

Subject: Report Regarding Guest Expert Lecture

Respected Sir,

I the undersigned H. K. Bhaldar working in ENTC

Department, submitting following report of guest lecture conduction.

Name of the Guest faculty : Mr. Rakesh A. Dasade
Class : TECB)
Topic of Guest Lecture : Project management and appli. of Engg.
Total No. of Hours : 2 Hrs
Total No. of Students : 45
Date of Guest Lecture Conducted : 22/9/18

Thanking You.


Subject Teacher


HOD ENTC
HEAU

Dept. of Electronics & Telecom. Engg.
P. O. Pandharpur

Department of Electronics & Telecommunication Engineering
Academic Year 2018-19

TE B

Guest Lecture by: Mr. Pakesh Dasake

Topic: Project management & Applications of Engineering Electronic & Telecomm.

| Roll.No. | Name of the Student | Sign |
|----------|---------------------------------|--------------------------|
| 1. | Asabe Pratima Navanath | <u>Asabe Pratima</u> |
| 2. | Baba Bhagyashri Shivshankar | <u>Bababha</u> |
| 3. | Bagal Mohini Tanaji | <u>Bagal Mohini</u> |
| 4. | Bangi Alfiya A Hamid | <u>Bangi Alfiya</u> |
| 5. | Bhosale Aishwarya Gopal | <u>Bhosale Aishwarya</u> |
| 6. | Bhosale Kavita Ganpat | <u>Bhosale Kavita</u> |
| 7. | Bhosale Ruchita Vilas | <u>Bhosale Ruchita</u> |
| 8. | Bodake Sonali Baban | |
| 9. | Chavare Shubhangi Sambhaji | |
| 10. | Devkate Pooja Sham | <u>P.S.D</u> |
| 11. | Dhotre Rohini Shivaji | <u>Dhotre Rohini</u> |
| 12. | Gajakosh Monika Harishchandra | <u>Gajakosh Monika</u> |
| 13. | Ghadyalji Aishwarya Chandrakant | |
| 14. | Ghodke Pooja Ganpati | <u>Ghodke Pooja</u> |
| 15. | Gore Janabai Balasaheb | <u>Gore Janabai</u> |
| 16. | Gumaste Ketaki Sunil | <u>Gumaste Ketaki</u> |
| 17. | Jadhav Mayuri Tippanna | <u>Jadhav Mayuri</u> |
| 18. | Jagtap Janhavi Nagnath | <u>Jagtap Janhavi</u> |
| 19. | Kakade Puja Vikas | <u>Kakade Puja</u> |
| 20. | Kale Kranti Hanumant | |
| 21. | Kamble Anandi Ramhari | <u>Kamble Anandi</u> |
| 22. | Karande Jayashri Dattatraya | <u>Karande Jayashri</u> |
| 23. | Katkar Anjali Pandurang | |
| 24. | Anjali Sudhakar Mane | <u>Mane AS</u> |
| 25. | Khandare Darshana Rajesh | |
| 26. | Khankal Vrushali Ramchandra | <u>Khankal Vrushali</u> |
| 27. | Khilari Nilambika Rudrappa | <u>Khilari Nilambika</u> |
| 28. | Koli Jyoti Naganath | <u>Koli Jyoti</u> |
| 29. | Mahadik Kajal Hanumant | <u>Mahadik Kajal</u> |
| 30. | Maske Yogita Suresh | |
| 31. | More Kirti Ashok | <u>More Kirti</u> |

| Roll.No. | Name of the Student | Sign |
|----------|--------------------------------|--------|
| 32. | Myakal Samita Balaji | |
| 33. | Navalai Seema Laxman | |
| 34. | Navgire Pragati Purushottam | |
| 35. | Patil Dhanshree Sanjay | |
| 36. | Patil Nishigandha Santosh | |
| 37. | Patil Punam Laxman | |
| 38. | Potdar Gunjan Sarang | Ab |
| 39. | Salge Varsha Rajendra | |
| 40. | Shahane Manasi Mahesh | Ab |
| 41. | Survase Tejaswini Vishnu | |
| 42. | Vakase Jyoti Dattatray | |
| 43. | Vansale Rutuja Anurath | |
| 44. | Wagh Kanchan Sudhakar | |
| 45. | Yadav Anuja Dnyaneshwar | |
| 46. | Hindule Madhavi Shashikant | |
| 47. | Sawant Mayuri Balkrishna | |
| 48. | Pawar Trupti Maruti | |
| 49. | Yelasange Anjali Mahadev | |
| 50. | Gondawale Sanjay Rajaram | |
| 51. | Gurav Umesh Bateshwar | |
| 52. | Hindule Ravikant Shashikant | |
| 53. | Mane Harshadip Shailesh | |
| 54. | More Swapnil Pandharinath | |
| 55. | Naiknavare Rajkumar Chokha | |
| 56. | Parakhe Vallabh Sanjay | |
| 57. | Ranaware Rohit Suhas | |
| 58. | Sayyad Tanjim Mahammad | Ab |
| 59. | Shinde Balkrushna Shivaji | Ab |
| 60. | Sonar Abhishek Rajkumar | Ab |
| 61. | Sonawane Sharad Magan | |
| 62. | Tate Deshmukh Krishna Rajendra | |
| 63. | Vyawahare Sachin Dattatreya | |
| 64. | Omkar Anil Molak | |

Dipalje Pujari
Class Coordinator

Dr. A. S. Vibhute
HOD

HEAD

Department of Electronics & Telecom. Engg.
C. O. T. Pancharatna



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Dist. Solapur (Maharashtra) Ph.: (02186) 225083, Fax: (02186) 225082.
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)
E-mail :- coc@sveri.ac.in

Date: 15/09/2018

Department of Electronics and Telecommunication Engineering

To,

Mr. Rakesh A. Dasade

Team Leader,

TCS, Pune

Subject: Invitation for Guest session on "Project management and Applications of engineering"

Respected sir,

We are happy to invite as an expert guest for our Third Year Electronics and Telecommunication Engineering Department students of SVERI'S COE, Pandharpur for Conducting Guest/Expert session on "Project management and Applications of engineering" on 22nd Sept. 2018.

You are requested to accept our invitation and please give your consent for the same.

Thank You,

Yours faithfully,

Received

Dhondora

(Dr. A. S. Vibhute)

H. O. D ENT
HEAD

Dept. of Electronics & Telecom. Engg.
C. O. C. Pandharpur



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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)
E-mail :- coe@sveri.ac.in

Date: 22/09/2018

Department of Electronics and Telecommunication Engineering

To,

Mr. Rakesh A. Dasade

Team Leader,

TCS, Pune

Subject: Thanks Letter

Respected sir,

This is to express our heartfelt gratitude towards you for accepting invitation as Expert Guest for conducting a session on "Project management and Applications of engineering" for TE students on 22nd Sept. 2018.

Your valuable guidance will always keep the students inspiring & motivating.

I request the same kind of co-operation in future also.

Thankyou,

Yours faithfully,


(Dr. A. S. Vibhute)

HOD ENTC
HEAU

Dept of Electronics & Telecom. Engr.
P. O. C Pandharpur

Received

Dhasele

PARTICIPATIVE LEARNING

Participative learning is focused on encouraging students to become actively involved in their learning process through following activities:





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COLLEGE OF ENGINEERING, PANDHARPUR

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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



ISO 9001:2015



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ID: 300045196

| Sr. No. | Name of the Activity | Purpose of Activity |
|---------|--|--|
| 1 | Technical Competitions like Smart India Hackathon (SIH), Project Competitions and IIC Projects | The purpose for conducting such a competition for sharing their projects ideas with the world. |
| 2 | Participation in Paper Presentation Competition / Publications / Conferences | Participation in Conferences helps to exchange knowledge also helps students to gain deeper insights after meeting people and make meaningful connections, and bring back valuable ideas and strategies. |
| 3 | Extra and Co-curricular Activities | Co-curricular activities improve the learning experiences of students, help them identify and develop their inner talents like creative & public-speaking skills, leadership qualities, etc. |
| 4 | Quiz Solving and Group discussion | It encourages active participation, exchange of ideas and boosts confidence of students when they are able to provide the solutions by themselves. It improves their analytical thinking and problem solving skills to a great extent. |

Participative learning through IIC Projects

- **Solve Complex Engineering Problems**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**
- **Team work**

Link:

https://drive.google.com/file/d/1hGQ4L_FzLh4Bpmi6cw5IYB2MAGkPzVMG/view?usp=sharing

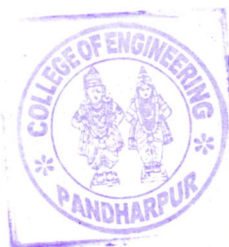
Ref.: COEPR/2020-2021/0.0./03

Date:- 30/06/2020

OFFICE ORDER

As per resolution made in Board of Governors Meeting dated 29/06/2020, Institution's Innovation Cell is constituted in our college as per the details given below:

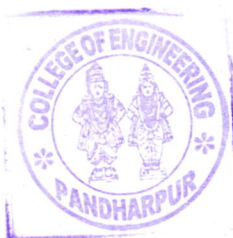
| Sr. No. | Name of Faculty | Designation | Nature | Experience/Positions |
|---------|-----------------------|-------------|----------|---|
| 1. | Dr. N. B. Pasalkar | Chairman | External | Ex- Director of Directorate Technical Education, Government of Maharashtra, India; MPSC member and Prof. in Electronics Engineering. |
| 2. | Dr. B. P. Ronge | Co-Chairman | Internal | Founder Secretary, SVERI and Principal, SVERI's COE, Pandharpur |
| 3. | Mr. Ashok Ranade | Member | External | B.Tech. from IIT with 45+ years of industry experience and faculty of Toronto University, Canada. |
| 4. | Mr. Ashok Saraf | Member | External | B.Tech. from IIT with 45+ years of industry experience; Founder of Syslab Pune; Trustee Science & Technology Park Pune University. |
| 5. | Prof. Suhas Deshpande | Member | External | M.Tech. from IIT with 40+ years of experience in HVAC & R, Renewable & Conventional Energy, Cold Storages, Training and Teaching; ASHRAE Fellow [USA] ; Ex-President of ISHRAE Pune and Western India Chapter. |
| 6. | Mr. Sudarshan Natu | Member | External | M.Tech. from IIT with 35+ years of industry experience; Ex Vice President of Harman Connected Services; Cofounder and Managing Director of NitAI Computers, Pune and product development experience in cutting edge technologies, IOT, Embedded Products for various domains, etc. |
| 7. | Dr. Padmakar Kelkar | Member | External | Founder & CEO of Bright Stars Electronics; Former consultant to World Bank; Consultant to WAPCOS for Ghana and Indonesia projects; 45+ Years industrial experience in various domain and embedded products; Two Granted Patents and Four Published Patents and Award winner of National Award for commercializable Patents by DST, Delhi. |



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| Sr. No. | Name of Faculty | Designation | Nature | Experience/Positions |
|---------|-------------------------------|-------------|----------|---|
| 8. | Mr. Atul Marathe | Member | External | B.Tech from IIT with 30+ years of industry experience, Ex Vice President at Persistent, worked with IBM and expert in software product development, ERP, Consulting, Training, etc. |
| 9. | Mr. Vishal Chandrakant Khatal | Member | External | Co-Founder; CMO; DBM Infotech Pvt Ltd. Pune |
| 10. | Mr. Balmukund Hirwe | Member | External | Bachelor of Engineering from COEP; Ex CTO Honeywell HK; 45+ years of experience in Electronic product Design, Lean innovative Product Design & Stage gate product Development, Refrigeration and Air Conditioning Systems Design, Customer Support Management, APQP, Quality Systems design, Product Reliability design and Management, Safety Certifications, Outsourcing Management OEM/ODM, Vendor Development PPAP, Commercial Ovens , Coffee Machines ,Deep Freezers, Visi Coolers, Reverse Engineering and Value Engineering. |
| 11. | Mr. Ramesh Adavi | Member | External | B.Tech from IIT; PGDM from IIM, Bangalore with 35+ years of Industry Experience with Multinational group, startup company and Expert in Data Science, Machine learning, AI, etc. |
| 12. | Mr. Kamlesh Pande | Member | External | M Tech from IIT with 40+ years of experience; Currently, Founder MAITRI (Making Academia Innovative and Technically Relevant to Industry); Adjunct Professor, School of Management (SOM), IIT Bombay; Member, CII Committees on Higher Technical Education and Industry-Institute Interaction. |
| 13. | Mr. Vivek Deshpande | Member | External | M.Tech. from IIT with 30+ years of experience in multinational companies and Extensive product development experience in IOT, Embedded, Software, etc. |
| 14. | Dr. Ms. V. S. Khirsagar | Coordinator | Internal | Associate Professor, SVERI's College of Engineering, Pandharpur |

The Institution's Innovation Cell is formed to create and inculcate 'Innovative culture' among the students and faculty members of the Institute. The external members will be available in the campus or through email/phone/conference and interact with the faculty and students of the college. The external members of Institution's Innovation Cell will extend the guidance to our faculty members and students for making innovative products and research projects. They will further extend the help in the consultancy project work undertaken by the college. Based on the analysis and needs, these members will help to conduct FDPs for the development of faculty in upcoming trends and technologies and guidance sessions for our students. The external members



B. Sange

of the Institution's Innovation Cell shall be entitled for a sitting allowance of Rs. 5000/-per meeting in addition to travelling, lodging and boarding expenses, at actual.
If the external members of Institution's Innovation Cell conduct separate FDP/STTP/Workshop, Guiding Sessions, etc., they will be entitled for separate honorarium for the same as per the mutual agreement between them and the institute, in addition to travelling, lodging and boarding expenses, at actual.



B. P. Ronge
(Dr. B. P. Ronge)
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6. Campus In-Charge
7. Vice Principal

IIC Establishment Certificate (2020-21)



Ministry of
Education
Government of India



MoE's
INNOVATION CELL
(GOVERNMENT OF INDIA)



INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of Education Initiative)



CERTIFICATE

Institution's Innovation Council (IIC) established at

COLLEGE OF ENGINEERING , Pandharpur

had undertaken various activities prescribed by Innovation Cell, Ministry of Education, Govt. of India to promote Innovation and Start-up in campus during the IIC calendar year 2020-21.

Prof. Anil D. Sahasrabudhe
Chairman
AICTE

Dr. Abhay Jere
Chief Innovation Officer
MOE, Innovation Cell

Mr. Dipan Sahu
Assistant Innovation Director
MOE, Innovation Cell

Certificate No :
1762

Issued On : 2022-01-03

Sample Report of IIC Product-Automatic Sanitizer Dispenser

SVERI's College of Engineering, Pandharpur

Department of Electronics & Telecommunication Engineering

Academic Year 2019-20 (Sem-II)

Product Development

Name of The Product:- Automatic Sanitizer Dispenser

Name of The Guide: Dr. A. S. Vibhute

Name of Students:

1. Mr. Gopal Govind Kamble
2. Mr. Onkar Vilas Nagashetti
3. Mr. Onkar Mahadev Yalesage
4. Mr. Jayesh Satish Ingle

Objective:

To dispense sanitizer without touching dispenser.

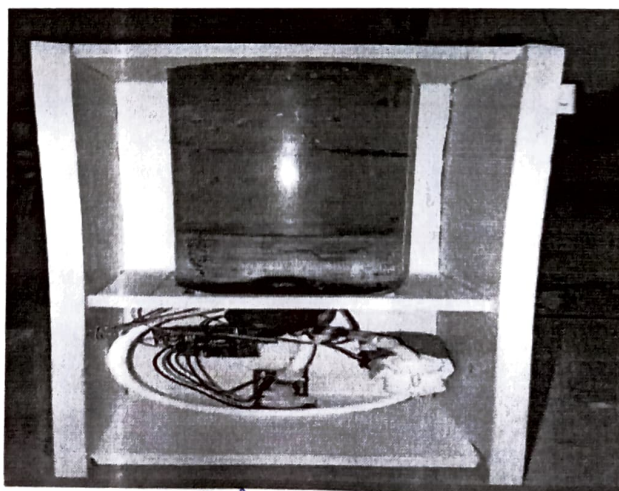
Working:


This project is based on ultrasonic sensor, which detects the presence of hands and consequently activates the motor pump to dispense sanitizer.

The concept is that when the Sensor, which is attached to the holder, gets activated, by simply putting your hand a few centimeters below it, the presser goes down a set distance, (pressing the dispenser) and dispenses sanitizer.

Outcome:

It is contactless sanitizer dispenser so spreading of infectious virus.




Sign of guide


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Dept. of Electronics & Telecom. Engg.
C. Q. E. Pandharpur

Sample Report of IIC Product-Smart Dustbin

SVERI's College of Engineering, Pandharpur
Department of Electronics & Telecommunication Engineering
Academic Year 2019-20 (Sem-II)

Product Development

Name of The Product:- Smart Dustbin

Name of The Guide: Mr. A. M. Kasture

Name of Students:

1. Mr. Gridhar Shettigar
2. Mr. Jayesh Khadde
3. Mr. Mayur Jadhavar

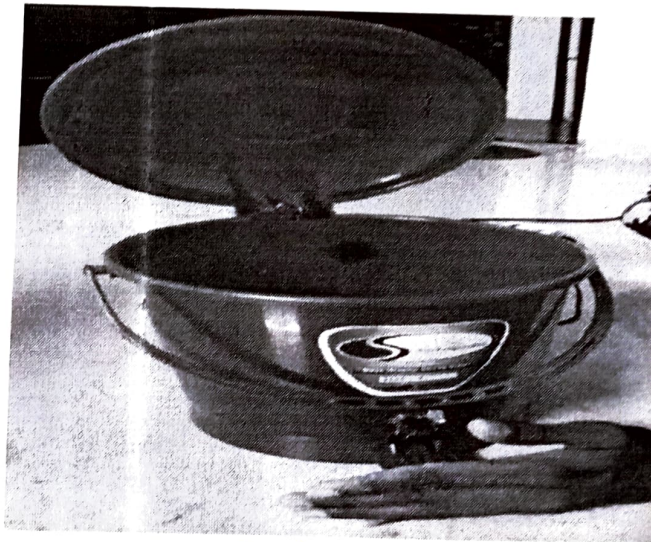
Objective: Automatically open the lid when it detects the people who want to throw out their trash.


Working:

When person comes in front of smart dustbin it will open automatically with the help of a servo motor. Sensor is used to sense if someone comes closer to dustbin.

Outcome:

The lid of the dustbin stays closed, so that waste is not exposed (to avoid flies and mosquitos) and when person wants dispose any waste, it will automatically open the lid.




Sign of guide


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C. Q. E. Pandharpur

Participative learning through ROBOT Making Competition

- **Solve Complex Engineering Problems**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**
- **Team work**

**ROBOT MAKING COMPETITION CONDUCTED BY DEPARTMENT OF
MECHANICAL ENGINEERING**



**ROBOT MAKING COMPETITION CONDUCTED BY DEPARTMENT OF
MECHANICAL ENGINEERING**



Participative Learning through Student Publication

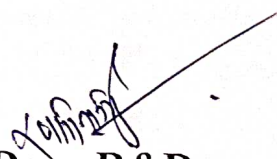
- **Complex Engineering Problems Solving**
- **Professional Ethics and Responsibilities**
- **Life Long Learning**

Summary of Student Publications/Conferences for the Academic Year 2018-19



SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR SUMMARY OF PAPER PUBLICATIONS/ CONFERENCES

| Academic Year | Class | No. of Papers |
|---------------|-------|---------------|
| 2018-19 | BE | 71 |


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List of Student Publications/Conferences (2018-19)



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 Tel.: 02186-216063, 9503103757, E-mail: coe@sveri.ac.in, Website: www.sveri.ac.in
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SVERI'S COLLEGE OF ENGINEERING, PANDHARPUR

STUDENT PAPER PUBLICATIONS DETAILS

ACADEMIC YEAR: 2018-19

| Sr. no. | Student Name | Title of Paper | Journal / Conference |
|---------|---------------------------|--|---|
| 1 | Thite Ankita Arjun | Utilization Of Waste Plastic As Partial Replacement Of Fine Aggregate In Concrete | International Conference on Mechanical, Manufacturing, Industrial and Civil Engineering (ICMMIC), Bengaluru |
| | Itkapalle Pooja Ramesh | | |
| | Jadhavar N R | | |
| | Chandanshive K. S. | | |
| | Jadhav Sarita Narayan | | |
| 2 | Katkar Namrata Ramkrishna | Infiltration Studies Of Black Cotton Soils Under Different Soil Condition And Comparison Of Infiltration Model With Field Data | International Conference on Mechanical, Manufacturing, Industrial and Civil Engineering (ICMMIC), Bengaluru |
| | Korake Swapnali Kailas | | |
| | Thite Trupti Somnath | | |
| | Waghmode Tejasvi Dhondiba | | |
| 3 | Mangire Adesh Sunil | Best Input Variable Combinations For Reservoir Capacity Analysis | International Conference on Mechanical, Manufacturing, Industrial and Civil Engineering (ICMMIC), Bengaluru |
| | Pawar Balu Sidram | | |
| | Gade Dipak Shivaji | | |
| | Puri Anil Arjun | | |
| | Ajure Shubham Dilip | | |
| 4 | Honmote Kundan Ganpat | Experimental Behavior Of Neutralized Red Mud In Concrete By Replacing Cement Percentage | International Conference on Mechanical, Manufacturing, Industrial and Civil Engineering (ICMMIC), Bengaluru |
| | Nirmal Sandip Bhausaheb | | |
| | Kadam Yogeshwar Prabhakar | | |
| | Ghadage Ganesh Sahebrao | | |
| 5 | Kambale Akshada Avinash | Development Of Smart Traffic System For Pandharpur City | International Conference on Mechanical, Manufacturing, Industrial and Civil Engineering (ICMMIC), Bengaluru |
| | Madke Bhakti Sambhaji | | |
| | Godase Yashashri Sadhu | | |
| | Lengare Amruta Laxman | | |
| 6 | Lokhande Anil Laxman | Optimization Techniques For A Cantilever Beam | International Conference on Mechanical, Manufacturing, Industrial and Civil Engineering (ICMMIC), Kolkata |
| | Pore Nilesh Raghunath | | |
| | Velapurkar Pravin Shyam | | |
| | Shinde Devidas Tanaji | | |
| | More Kiran Nana | | |
| | Shinde Nitin Bharat | | |
| 7 | Saumya Nashikkar, | Road Pit Notifier | International Journal of Management, Technology And Engineering, Volume 8, Issue XI, NOVEMBER/2018 |
| | Nikita Unholi, | | |
| | Preeti Karki, | | |
| | Sonali Chavan | | |
| 8 | Sharyu U. Kamble, | Heart Disease Prediction using Machine Learning Techniques | International Journal on Emerging Trends in Technology, Volume 6, Issue 1, April 2019 |
| | Vaishnavi S. Jawanjal, | | |
| | Pooja P. Velapure, | | |
| | Priya K. Jadhav | | |


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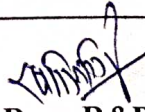


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| Sr. no. | Student Name | Title of Paper | Journal / Conference |
|---------|---|---|--|
| 9 | Kanchan I. Chouhan, Vidya B. Maskar | Smart Voting through UID Verification by using Face Recognition | International Journal on Emerging Trends in Technology, Volume 6, Issue 1, April 2019 |
| 10 | S. C. Tendulkar, A. P. Raut, S. B. Varape, R. P. Bansode | Website Development for E-commerce Platform | International Journal on Emerging Trends in Technology, Volume 6, Issue 1, April 2019 |
| 11 | Dipanjita Deb, Parvati Dagade, Varsha Deokar, Manasi Waghmare | Stock Market Prediction using Twitter Sentimental Analysis | International Journal on Emerging Trends in Technology, Volume 6, Issue 1, April 2019 |
| 12 | Chandraprabha P. Kale, Ashwini S. Jadhav, Yashoda S. Pingale, Priyanka L. Telgaon, | Design, Feature Extraction and Prediction of Food Grains | International Journal on Emerging Trends in Technology, Volume 6, Issue 1, April 2019 |
| 13 | Sukeshani Jagannath Kokare, Kiran Ramchandra Gudd, Shaheen Anwar Patel, Poonam Balaso Sawant, | RFID Based Attendance System | International Journal for Scientific Research & Development (IJSRD), Volume : 7, Issue : 2, May 2019 |
| 14 | Mane Shubham S. Abhangrao Chaitanya R. Kothawale Rajdeep R. Mete Akash R. | Enhancement of Damping Force of Classical Hydraulic Damper into Semi Active Damper using MR Approach | International Journal of New Technology and Research |
| 15 | Ankita A. Kashid Pallavi M. Patil Monika R. Olekar Priyadarshani V. Deshmane Sonali S. Jadkar | Analysis of Weld Joint for SS 316 Material Using Taguchi Technique | International Journal of New Technology and Research |
| 16 | Vishal M. Dhumal Shivam R. Kanade Samadhan U. Bandagar Kiran S. Ghule | Improving Accuracy of Manual Crimping Operation through the Automation of Crimping Machine | International Journal of New Technology and Research |
| 17 | Ashish Shahane Lakhan Ghodake | Enhancement of Heat Transfer Coefficient through Forced Convection Apparatus by Using Circular and Elliptical Pipe | International Journal of New Technology and Research |
| 18 | Laxmikant D. Joshi Amar A. Rajgole Rahul Hiremath | Experimental Investigation of Natural Fiber with Epoxy Resin | International Journal of New Technology and Research |
| 19 | A.M. Khandekar G.R. Mote N.S. Vastre S.A. Mosalgi | Study, Manufacturing and Analysis of Conveyor Chain Pin by using Composite Material | International Journal of New Technology and Research |


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| Sr. no. | Student Name | Title of Paper | Journal / Conference |
|---------|--------------------------|--|--|
| 20 | Rohit D. Bankar | Computational Analysis of a Piezoelectrically Actuated Valve-less Micropump for Micro-fluidic Applications | International Journal of New Technology and Research |
| | Ajay L. Godase | | |
| | Ashok B. Mule | | |
| | Nikhil N. Gaikwad | | |
| 21 | Siddharam S. Warad | Design and Development of a Pneumatic Car | International Journal of New Technology and Research |
| | Sonal R. Swami | | |
| | Akash V. Reshame | | |
| | Rahul A. Hadapad | | |
| | Virendra V. Mahajan | | |
| 22 | Hrushikesh N. Paricharak | Analysis of Crack on Aeroplane Wing at Different Positions using ANSYS Software | International Journal of New Technology and Research |
| | Aditya A. Lotake | | |
| | Sudhakar V. Mane | | |
| | Darshan R. Gaikwad | | |
| | Rushikesh H. Vastre | | |
| 23 | Priyadarshani Gaikwad | Deformation Analysis of Wood Cutting Setup using ANSYS | International Journal of New Technology and Research |
| | Komal Gund | | |
| | Kulsum Kazi | | |
| | Bhairavi Fund | | |
| 24 | Sumit S. Khajepawar | Study of depth of etching in Photo Chemical Machining by colored Phototool | International Journal of New Technology and Research |
| | Guruprasad V. Badave | | |
| | Shubham S. Bhosale | | |
| | Dnyanraj S. Telang | | |
| 25 | Mayuri A. Raut | Fabrication of Micro Channel Heat Sink by using Photo Chemical Machining | International Journal of New Technology and Research |
| | Snehal S. Kale | | |
| | Prajakta V. Pangavkar | | |
| 26 | Mayur M. Jokare | Fabrication of Micro Channel Mold by using CO2 Laser Machining | International Journal of New Technology and Research |
| | Abhishek H. Vedpathak | | |
| | Rajendra D. Pawar | | |
| 27 | Aditya A. Lotake | Comparative Stress Analysis of Connecting rod using ANSYS for Different Materials | International Journal of New Technology and Research |
| | Shakir M. Mulani | | |
| | Sohel M. Mulani | | |
| | Rajratna D. Meshram | | |
| 28 | Sunil S. Miskin | Review on Solar Air Conditioning with Desiccant Wheel | International Journal of New Technology and Research |
| | Onkar P. Dhudhane | | |
| | Abhishek H. Vedpathak | | |
| | Yogesh R. Barkul | | |
| 29 | Kshitij Moholkar | Experimental Analysis of Solar Dryer for Agricultural and Food Products | International Journal of New Technology and Research |
| | Akshay Jadhao | | |
| | Rohit Chavan | | |
| | Ravindra Bhosale | | |
| 30 | Pankaj V. Patil | Design, Fabrication, and Analysis of Miniature Centrifugal Pump | International Journal of New Technology and Research |
| | Digambar S. Pawar | | |
| | Chetan S. Mote | | |
| | Ashutosh B. Deshmukh | | |

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|---------|-------------------------------|---|--|
| 31 | JadhavSaurabh M | Etching Depth variation of Brass Material for Different Operating Conditions | International Journal of New Technology and Research |
| | KaratkarOnkar V. | | |
| | BangaleKamesh N. | | |
| | Choudhari Deepak B. | | |
| 32 | SachinWaghamare | Design and Fabrication of Bench Top Injection Moulding Machine | Global Journal of Engineering Science and Researchers |
| | Dadasaheb Maske | | |
| | Pratik Waghamare | | |
| | Vishal Bhosale | | |
| 33 | Nikhil V. Chavan | Fabrication& Characterization of Micro features on PMMA Using CO2 Laser Machining | International Conference on Budding Trends in Engineering and Technology |
| | Rushikesh M. Bhagwat | | |
| | Suraj S. Gaikwad | | |
| | Shivam S. Shete | | |
| 34 | Rahul C Kambale | Design Development of Parabolic Trough Solar Concentrator for Water Heating | International Conference on Budding Trends in Engineering and Technology |
| | Shubham Shahane | | |
| | Shriyash Patange | | |
| | Makarand Burud | | |
| 35 | Hrushikesh Dhananjay Kulkarni | Fabrication of Micro-Textures on Conical Shape Hydrodynamic Journal Bearing | International Conference on Budding Trends in Engineering and Technology |
| | Ashish Bhaskar Rasal | | |
| | Onkar Hemant Bidkar | | |
| 36 | Rupesh Bandgar | Fabrication of Compliant Mechanism for Micro Gripper using Photo Chemical Machining | International Conference on Budding Trends in Engineering and Technology |
| | Sagar Bagewadi | | |
| | SachinKumbhare | | |
| | PravinKachare | | |
| 37 | Rakash Bawale | Fabrication and Characterization of Micro Channel Mold using CO2 LASER Machining | International Conference on Budding Trends in Engineering and Technology |
| | AkashJagtap | | |
| | Somesh Burande | | |
| | Rajkumar Bile | | |
| 38 | Rohan D. Gaikwad | Fabrication of Gear Lever Locker for Side Stand | International Conference on Budding Trends in Engineering and Technology |
| | Prashant N. Pawar | | |
| | Kiran G. Gaikwad | | |
| 39 | Upase Sidharth Ravindra | Cost effective E-rickshaw using Battery and Paddle | ISETE International Conference, Bengaluru |
| | Panpude Ajay Balak | | |
| | Kandi Nikhil Mallikarjun | | |
| 40 | Anantpure Mokshada Ramling | Gas leakage detection and accident prevention system using IoT | ISETE International Conference, Bengaluru |
| | Kambale Prajakta Narayan | | |
| | Kore Bhagawati Prakash | | |
| 41 | Waghamare Varsha Ashok | Water Purifier using Peltier Module | International Research Journal of Engineering and Technology (IRJET) |
| | Walujkar Shubhangi Sunil | | |
| | Patil Komal Kamalakar | | |
| 42 | Atar Shahista Iqbal | Voice controlled Machineries in Agricultural Field using Raspberry Pi | International Research Journal of Engineering and Technology (IRJET) |
| | Jadhav Diksha Vitthal | | |
| | Chavan Banubai Dattatray | | |
| 43 | Bhosale Swapnali Sudhakar | Design of Smart Blind Stick using Arduino | International Journal for Scientific Research & Development (IJSRD) |
| | Ghongade Sneha Raja | | |
| | Shinde Seema Sadashiv | | |

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| Sr. no. | Student Name | Title of Paper | Journal / Conference |
|---------|-------------------------------|--|---|
| 44 | Kamble Bhagwati Krushna | Heart Rate Monitoring By using Pulse Sensor | International Research Journal of Engineering and Technology (IRJET) |
| | Khune Rupali Satish | | |
| | Raut Priyanka Bhimrao | | |
| | Shinde Sunita Prakash | | |
| 45 | Awatade Vaishnavi Vitthal | GPS based vehicle tracking and monitoring system - A solution for transportation | International Research Journal of Engineering and Technology (IRJET) |
| | Gaikwad Pratiksha Arun | | |
| | Javanjal Gayatri Sanjay | | |
| 46 | Yelale Priti Sitaram | Design and implementation of Wheelchair controlled using Eye movement | International Research Journal of Engineering and Technology (IRJET) |
| | Paparkar Sonali Pandurang | | |
| | Waghmare Diksha | | |
| 47 | Waghmare Ashanta Laxman | Raspberry Pi based Reader for Blind People | International Research Journal of Engineering and Technology (IRJET) |
| | Pangare Mohini Madhukar | | |
| | Sawale Bhagyashri Chandrakant | | |
| | Shinde Urmila Deepak | | |
| 48 | Bhosale Punam Shrirang | Automatic Seed Sowing Robot | International Research Journal of Engineering and Technology (IRJET) |
| | Yedave Vidya Dattatraya | | |
| | Shinde Jyoti Bhairavnath | | |
| 49 | More Mayuri Mahadeo | Design of Micro-Strip Patch Array Antenna at 2.45 GHz Frequency for wireless application | International Journal for Scientific Research & Development (IJSRD) |
| | Shinde Shilpa Ravindra | | |
| | Rangar Swagata Jaivant | | |
| 50 | Yelme Mitali Devidas | Solar Powered Arduino based Wireless Grass Cutter System | International Journal for Scientific Research & Development (IJSRD) |
| | Biradar Abhishakta | | |
| | Salunkhe Shital Dhanaji | | |
| 51 | Dingare Krishna | Voice controlled Water Control System using Arduino | International Research Journal of Engineering and Technology (IRJET) |
| | Raj shivaji Palase | | |
| | Shahane Ajinkya Abhaykumar | | |
| | Prakash Chittapure | | |
| 52 | Rajput Amruta Narayansing | Virtual Eye for Visually Blind People | International Research Journal of Engineering and Technology (IRJET) |
| | Masal Usha Arjun | | |
| | Tate gita baliram | | |
| 53 | Jadhav Nilesh Dnyaneshwar | Design of Small Scale Electronic Trolley with 500 KG Load carrying capacity | ISETE International Conference, Bengaluru |
| | Patil Gaurav Dnyandev | | |
| | Adhatrav Madhav Prakash | | |
| 54 | Shaikh Navid Mahamad | Counting of RBC's and WBC's using Image Processing Technique | International Research Journal of Engineering and Technology (IRJET) |
| | Rajput Karansingh babusing | | |
| | Rahul dattatray Pawar | | |
| 55 | Dhanwate Dipali Bandu | Features Based Fruit Gradation using Image Processing | International Journal of Recent Technology and Engineering (IJRTE) |
| | Jadhav Rohini Ramchandra | | |
| | Patil Nishigandha Amar | | |
| | Bhosale Payal Dnyaneshwar | | |
| 56 | Joshi Sayali Nandkumar | Design & Development of Human Following Trolley | International Journal of Innovative Science and Research Technology (IJSRT) |
| | Dixit Priyanka Sunil | | |
| | Patki Vaishnavi Kiran | | |

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ICMN-2K19

Comparative CFD Analysis of Mini Impeller Using Different Materials

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Subhash.V.Jadhav^a, Digambar.T.Kashid^a, Sandeep.S.Wangikar^a

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Abstract

In this present era there is continuously increasing the use of centrifugal pump which is required to pump the various fluids like water, fuel, etc. from lower level to higher level. And in the field of research and development there is use of miniature centrifugal pump for different applications. So, there is need to design the miniature pump impeller by standard design procedure. The model is developed with the help of CATIA v5 R21 software. Then an analysis is carried out in the ANSYS Fluent for different materials and various parameters like wall shear stress and static pressure are analyzed.

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Keywords: centrifugal pump; mini impeller design; ANSYS Fluent; CFD; CATIA v5 R21

1. Introduction

The centrifugal pump is the device which lifts the water from lower level to higher level by utilizing centrifugal force. In this centrifugal pump the impeller is used to increase pressure and flow of fluid. It converts the mechanical energy into kinetic and pressure energy. An impeller is rotating component of pump which transfer energy from motor which pumps the fluid to outwards from the centre of rotation. An impeller is nothing but a small cylinder with an open inlet called as eye which accepts the incoming fluid. At the centre of impeller it produces the negative pressure at the inlet vanes to pushes the fluid radically. The prediction of performance of impeller with conventional

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trial and error method is very difficult and time consuming as well as costly. Using CFD approach one can easily predict the complex flow inside the pump. Hence CFD analysis is efficient method for analysis of impeller. As very few researchers have made attempt in this area so the study is made for the analysis of mini impeller. Pierret and Braembussche [1] studied for satisfying the aerodynamic and mechanical requirements and shows the Navier - stokes computations is important. By using optimized algorithms depend upon simulating annealing will not trap in local minimum. Miguel Asuaje et al. [2] studied that design of centrifugal pump and optimization depends mainly on the 3D quasi-unsteady flow simulation using two methods which is CFX-TAS flow and CFX 5.5 codes. It causes the unsymmetrical flow distribution and cavitations appear on blades. Shang-liangchen and wen-Tsai Wang [3] studied the various computerized manufacturing processes for impeller. From this it states that the rough milling using cavity mill with three axis milling machine gives or improves the manufacturing efficiencies. Kim et al. [4] studied the CFD analysis of the volute of the impeller of centrifugal pump. And suggested that stepanoff theory is better for design of impeller and efficiency is decreases as there is increase of head. Gurupranesh et al. [5] studied the various parameters of impeller as static pressure and wall stress and it states that CFD analysis is so much important for analysis. Zhang et al. [6] studied the fatigue -failure analysis of impeller and founds that mistuning is the main causes of the fracture of the open impeller. The Vibration Stress of semi open impeller at the working speed is only 15.8 Mpa. Gamal et al. [7] studied the effect of number of impeller blades on pump performance. They took three different impellers with 5,7,9 blades and did numerical analysis and found that the optimum blade number at 2800 rpm and also found that the losses decreases by increasing blade number by numerical investigation were carried out to making reduction of secondary flow. Ragotth et al. [8] analyze the flow field in a pump impeller and got efficiency 58.53% for circular method and 57.31% for the point method and circular method is much efficient for higher efficiency. Anagnostopouls [9] studied flow in a centrifugal pump impeller by using Cartesian Grid. In this the numerical model is developed with the help of RANS Equation for finding the solution for impeller. Hazeri [10] studied the design of impeller for increasing the performance of pump and also optimized the design to give reduced energy consumption and prolonged component life. Zhou et al. [11] studied the wall shear stress and pressure distribution on the impeller of various models and he got uniform BVF distribution on the blade surface. Very less work has been reported on the analysis of mini centrifugal pump open impeller. Hence, an attempt is made to analyze the performance of a mini centrifugal pump by studying the different parameters like wall shear stress and static pressure for different materials like ABS, Steel and Aluminum. By comparing the results obtained after the analysis, the most suitable material for impeller is predicted.

2. Methodology

The methodology includes the design procedure of impeller which give the parameters and dimensions of the of impeller. The second part is the computational analysis. In computational analysis, the model is created in CATIA V5 software and then imported to ANSYS FLUENT software. Further, the mesh independence test is carried out and then the required simulations are performed in order to analyze the effect of speed and fluid flow direction on the wall shear stress, static pressure.

2.1 Design Procedure of Impeller:

In this impeller design, the discharge of 30 ml per sec and rpm of impeller is 5500 rpm with head of 30 cm is considered.

Specific speed :

$$Ns = N * \frac{\sqrt{Q}}{H^{\frac{3}{4}}}$$

Selection of vane number and discharge angle Assuming number of vanes is 6 and angle of discharge is 20°

Calculation of impeller dimension:

Head constant= $ku=1.18$

$$D_2 = \frac{1840 \cdot k_u \cdot \sqrt{H}}{(N_s)}$$

Calculation of impeller width:

$$B_2 = 0.78 (N_s/100)^{(1/2)} * (Q/N)^{(1/3)}$$

Eye Diameter of Impeller:

$$D_0 = K_0 * \sqrt[3]{Q/N}$$

Inlet Blade angle of the inlet:

$$\tan \beta = \frac{u_1}{V_{m1}}$$

Tangential velocity at inlet of impeller:

$$U_2 = \frac{\pi D_2 N}{60}$$

Inlet area of impeller:

$$A = [(\pi/4) * D_2^2]$$

Table 1. Parameters used for analysis

| | |
|----------------------------|---------------------|
| Specific speed | 3700 rpm |
| Outer diameter of impeller | 2cm |
| Width of impeller | 0.6cm |
| Inlet angle | 12° |
| Outlet angle | 20° |
| Discharge | 30ml/sec |
| Inlet velocity | 3.87cm/sec |
| Area of impeller | 3.14cm ² |
| Number of vanes | 6 |

Table 2. Density of materials

| Material | Steel | Aluminium | ABS |
|-----------------------------|-------|-----------|------|
| Density(kg/m ³) | 7700 | 2700 | 1060 |

The parameters of impeller used for analysis and the densities of materials are presented in Table 1 and Table 2, respectively.

After design, the next stage is modelling using a suitable software. CATIA is widely used for modelling different kinds of 3D models. Therefore, for modelling of the mini impeller, the CATIA v5 R21 software is preferred and the prepared model is presented in Fig. 1.

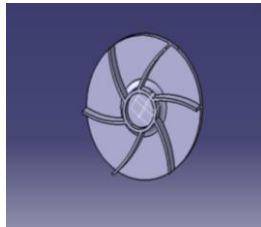


Fig.1. CATIA Model of impeller

There are softwares COMSOL Multiphysics, ANSYS Fluent, NASTRAN, etc. used by various researchers for analysing the performance of different devices like wind turbine, microchannels, micropumps, hydrodynamic bearings, etc. [12-14]. The computational analysis of mini impeller is carried out with the problems help of ANSYS

Fluent. This works on the CFD theory. The ANSYS Fluent has ability to solve flow by providing complete mesh flexibility. The interactive interface of ANSYS Fluent displays the results which are easily accessible. This impeller design CATIA file is converted in to .igs file. This file is imported into the ANSYS (fluent) software. After this, the mesh with coarse, medium and fine sizing and 100 relevance is generated. The volume of fluid is divided into three numbers of volumes such as rotating fluid volume, inlet fluid volume and inlet and outlet duct volume. The impeller wheel has given a constant rotating speed and setup referred as frozen rotor. Navier-Stokes equations is used for incompressible fluid. The details of input conditions and boundary condition are given below:

Input Material: ABS, Steel, Aluminium

Hydraulic Region: Water

Boundary Conditions: Specific speed =3700 rpm and Inlet velocity of 1.89 m/s

2.3 Mesh Independence Analysis:

In order to avoid the effect of enhanced meshing condition on the performance of mini impeller, the mesh or grid independence test is required to be performed. For Analysis of mini impeller, the unstructured mesh is used. The simulation is carried out for different mesh to improve computational the results. The different meshing conditions like coarse, medium, fine, and extra fine are applied to mini impeller and are depicted in Fig. 2. The result of the different meshing on the wall shear stress of the steel material is given below table 3. It has been observed that the results obtained for fine and extra fine be numbered with Arabic numerals. Every table should have a caption. Headings should be placed above tables, left justified. Only horizontal lines should be used within a table, to distinguish the column headings from the body of the table, and immediately above and below the table. Tables must be embedded into the text and not supplied separately. Below is an example which the authors may find useful. meshing for the wall shear stress pressure distribution are observed to be independent of the mesh (Fig. 3) beyond the fine meshing, therefore the extra fine meshing with meshing element 265706 has been found suitable to use for further computational analysis.

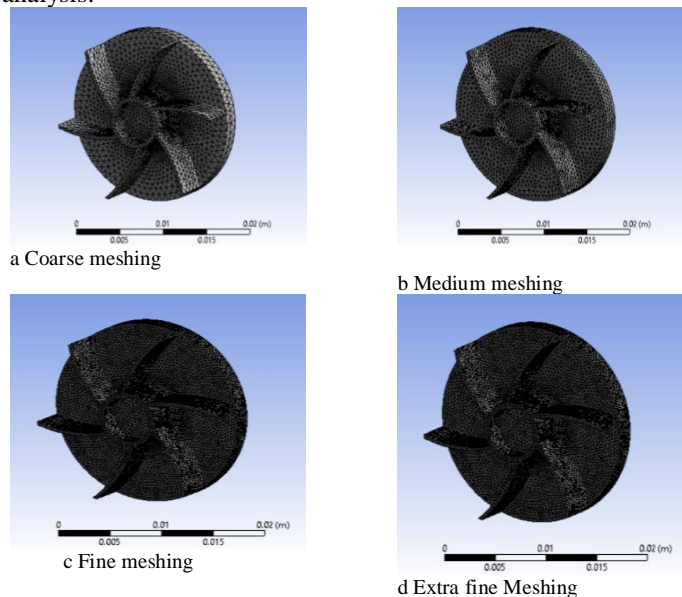


Fig.2. Different meshing conditions for mini impeller

Table 3. Mesh Independence Analysis

| | Coarse | Medium | Fine | Extra fine |
|------------------------|--------|--------|--------|------------|
| Nodes | 25114 | 20771 | 51925 | 51945 |
| Elements | 130285 | 146249 | 264706 | 265706 |
| Wall shear stress(Mpa) | 4.31 | 3.34 | 2.97 | 2.97 |

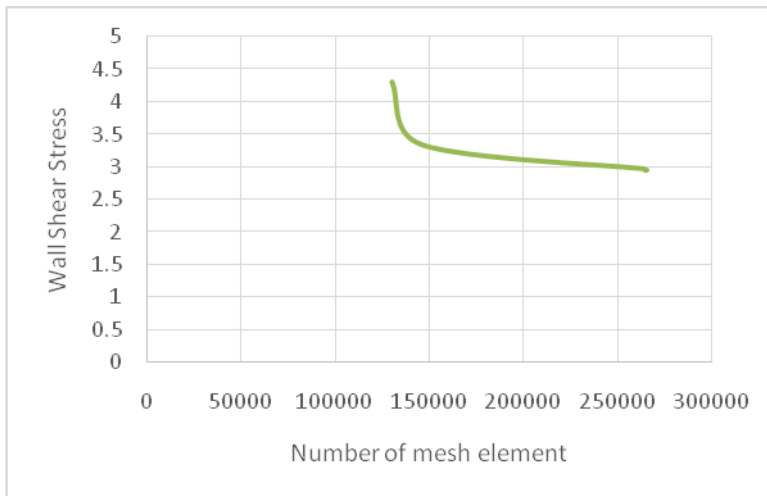


Fig. 3. Mesh independence test for wall shear stress

3. Results and Discussion:

The analysis has been carried out for studying the performance of mini impeller. The results are recorded for wall shear stress and static pressure. The results are taken when the convergence is obtained for solution where the numbers of iteration are 200.

3.1 Wall Shear Stress:

Wall shear stress is the shear stress in the layer of fluid next to the wall. Wall shear stress develops from the vector component parallel to the cross section of the material. Generally, the wall shear stress should be less for better performance. The Wall shear stresses developed in various materials is presented in below Fig. 4.

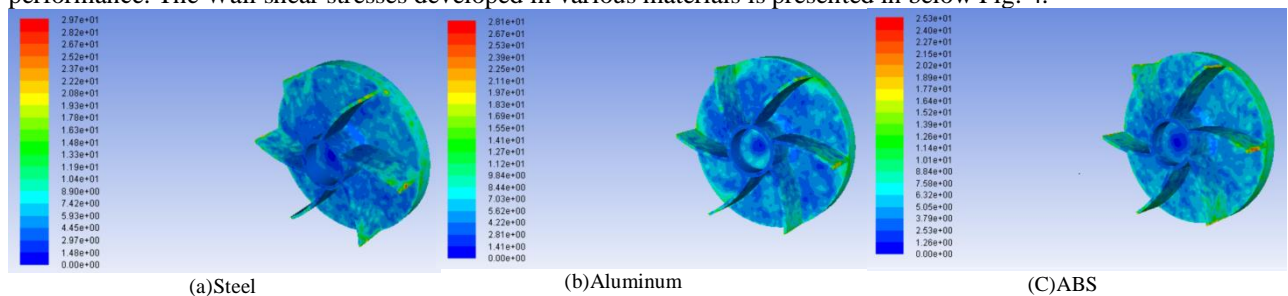


Fig. 4. Wall shear stresses for different materials

By performing numerical analysis on each material, the observed results are displayed in Table 4.

Table 4. Result of wall shear stress

| Material | Wall shear stress (Mpa) |
|-----------|-------------------------|
| Steel | 0.297 |
| aluminium | 0.281 |
| ABS | 0.253 |

From the results, it can be concluded that ABS material is good because it gives less wall shear stress which is of 0.253 MPa and maximum wall shear stress developed in steel material is 0.297 Mpa which is higher. The results states that the wall shear stress is increases gradually from all directions from leading edge of blade toward the trailing edge of blade. And the pressure gradient in axial direction is lesser than the radial direction and this is due to the centrifugal force acts on the trailing edges of the impeller blades. At the hub or centre low pressure is developed due negative suction pressure. So, the wall shear stress developed in ABS is less so it is preferable material for mini impeller. Due to this the low-pressure zone created at the hub side and gas blockage may be caused.

3.2 Static Pressure:

Static pressure is the pressure of fluid on a body when the latter is at rest relative to it. Static pressure developed on the impeller blades is negative at middle and increases toward the outside. Higher Static pressure will cause failure to the impeller. Static pressure contour of different material are shown Fig 5.

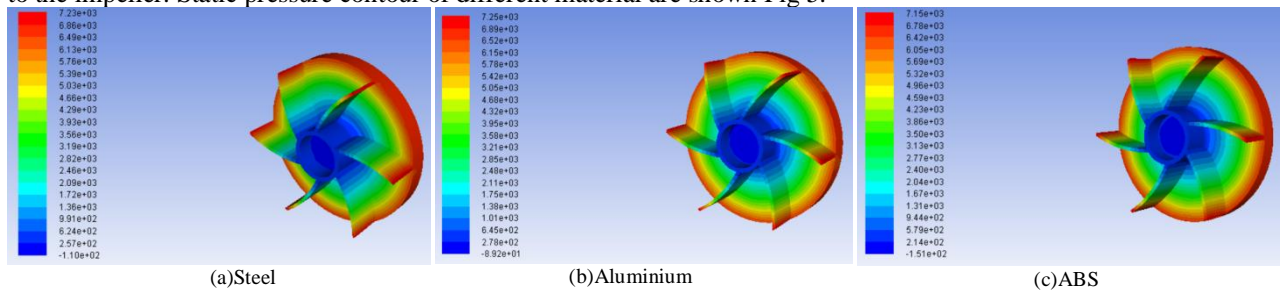


Fig. 5. Static pressure distribution for different materials

By performing the numerical analysis we have got the following results

Table 5. Result of static pressure

| Material | Static Pressure(Mpa) |
|-----------|----------------------|
| Steel | 7.25 |
| Aluminium | 7.23 |
| ABS | 7.15 |

From the above the static pressure developed in various material like Steel, Aluminum and ABS in fig 5 (a), (b), and (c). In these materials the lowest static pressure is developed in ABS Material which is 7.15Mpa and highest pressure developed in steel which is 7.25 Mpa. The result says that the static pressure is increases gradually from all directions from leading edge of blade toward the trailing edge of blade. The pressure gradient in axial direction are

lesser than the radial direction. and this is due to the centrifugal force acts on the trailing edges of the impeller blades. At the hub or centre the low pressure is developed due negative suction pressure. The static pressure should be less as increase in static pressure velocity flow decreases So Static pressure developed is less in ABS material.

3.3) Validation:

Zhou et al. [5] studied the static pressure developed on various position of blades of impeller. The graph of pressure distribution vs. position on the blades is plotted and it shows similar trend as compared to the results of Xin Zhou et al. as demonstrated in Fig. 6.

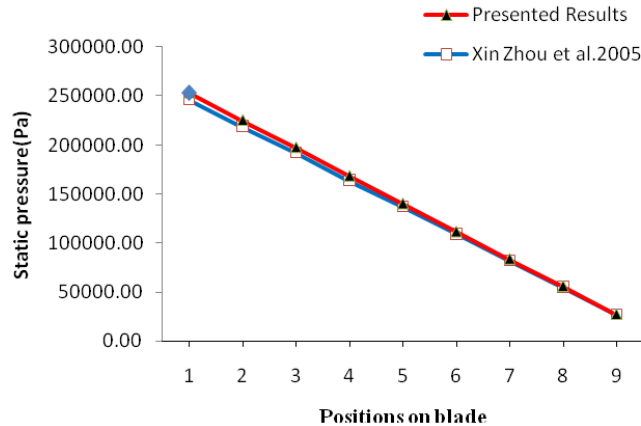


Fig. 6. Validation of Computational Results

4. Conclusion:

The computational analysis of mini impeller is performed using ANSYS Fluent Software in order to study the effect of speed and fluid flow condition on the wall shear stress and static pressure. The study has been carried out computationally on three different materials as steel, Aluminium and ABS. From the analysis of computational results, the static pressure and wall shear stress produced on impeller for ABS material are less as compared to steel and aluminum. So, it can be concluded that ABS material is most suitable for this type of impeller within the considered materials.

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Materials on a Diet: Study and Investigation of Aluminium – Fly Ash Metal Matrix Composite

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Abstract

Metal Matrix Composite (MMC) have wide applications in industry as they have lightweight and various properties. Composite materials are widely used in industry as they have less weight with high strength. In this study, we have used the Aluminium which is the most common material used in engineering applications. One of the cheapest industrial waste materials is Fly Ash, which can be successfully turned as industrial wealth by adding in the Aluminium to form Al-Fly Ash as Metal Matrix Composite with lesser weight and higher strength. Aluminium with varying percentage of fly ash (5%, 10% and 15%) were successfully added by using the Stir Casting method to form Metal Matrix Composite. In this investigation, we have studied the different properties of the Aluminium - Fly Ash as Metal Matrix Composite. From our study, we found that this Metal Matrix Composite which contains Fly Ash can be used in Automobile, Aerospace and other applications in Engineering where lesser weight with higher strength is expected.

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Keywords: Aluminium; Fly Ash; Industrial waste as wealth; Stir Casting;

1. Introduction

Metal Matrix Composite (MMC) is grabbing engineers' attention as it is having various properties like durability and high strength to weight ratio. In MMCs the metal matrix is used with the reinforcement to achieve the desired property with the lesser weight and cost. Aluminium is one of the common metals which are used in various

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engineering applications. As Aluminium is having less weight, it comes with lesser strength. Fly Ash is the industrial waste with low density produced by the thermal power plants as well as many industries. In India 1100 lacks ton Fly Ash per year is produced by the burning of 2500 lacks tons of coal per year for power generation. [1] It is one of the cheapest reinforcements we can use. Also, this can convert industrial waste into industrial wealth. Aluminium and Fly Ash Metal Matrix Composite is a composite material with higher strength as soft and ductile Aluminium is mixed with brittle and hard particles of Fly Ash. Use of Fly Ash in various materials can reduce pollution as well as increase strength and reduce the weight of the material. To form the Al-Fly Ash as MMC, the Stir Casting method is used. For investigation of the performance of MMCs we have added Fly Ash in different proportion (5%, 10%, 15%). This composite has many applications in Automotive and Aerospace sector.

2. Previous Studies

As Metal Matrix Composite (MMC) is having a high scope for research and innovations, many researchers have done work in the development and use of Aluminium – Fly Ash Metal Matrix Composite. We have listed below some of the studies done by the researchers in the field of Aluminium and Fly Ash MMC. Aluminium - Fly Ash Metal Matrix Composite is strengthened composite with good wear resistance used in various applications such as aerospace, automotive and other fields [2]. Aluminium is widely used in industry as it is common material with various useful properties. Using Aluminium fly ash MMC decreases the demand for intensive energy by Aluminium, it results in energy savings [3]. Fly Ash is having low density and available in major quantities as it is a waste product of thermal power plant when coal combustion. It has been successfully added into aluminium to make alloys and composites [4]. Previously Metal Matrix Composite was concentrated along the preparation of only FRC. As the cost of production is high, the use of such useful composite material is less. In current days the MMCs with lighter reinforcement grabbing importance because of less cost and higher strength properties. The strengthen aluminium alloy can have better stiffness as it has high strength and low density [5]. The Aluminium with Fly Ash Metal Matrix Composites are prepared by Stir Casting. Wettability of the particles can increase by the addition of active elements such as Mg into liquid Aluminium. The conventional method of production of composites by casting route is the vortex method, in which the Aluminium with 2% to 4% Mg is added and stirred. Mg helps to reduce the surface tension and avoid the dispersion of particles from casting [6,7]. Machinability is also increased with addition of Fly Ash in Aluminium with effect of lesser weight [8].

3. Materials and Experimental Study

3.1. Materials

In this experiment, we have used pure Aluminium as it is one of the common metals used in the aerospace and automotive industry as well as many other industries. Aluminium is soft in nature and have wide applications in every sector of engineering. Pure Aluminium is used to form the Metal Matrix Composite. For the reinforcement, we have used Fly Ash which is collected from the thermal power plant. As Fly Ash is waste for many industries and thermal power plants, it is beneficial for society and nature to use it in such engineering applications.

3.2. Aluminium

Aluminium is one of the most common materials used in engineering applications. It is highly useful in the automobile and aerospace sector. Aluminium is known as the lighter material which is having wide applications in day to day life which needs to be strengthen and reduction in cost. So we have selected Aluminium for making the metal matrix which can replace the existing Aluminium material for having better results.

In this experiment, we have used the Aluminium A1100 blocks to make Metal Matrix Composite. The composition and properties of A1100 are listed below in table 1 and 2 respectively.

Table 1. Composition of Aluminium

| Elements | Weight (%) |
|----------|------------|
| Al | 99 |
| Si | 0.45 |
| Cu | 0.15 |
| Mg | 0.05 |
| Fe | 0.30 |
| Zn | 0.05 |

Table 2. Properties of Aluminium

| Properties | Values | Units | Conditions (°C) |
|----------------------|--------|-------------------|-----------------|
| Density | 2.72 | g/cm ³ | 25 |
| Poisson's Ratio | 0.32 | - | 25 |
| Melting Point | 648 | °C | 25 |
| Tensile Strength | 108 | MPa | 25 |
| Elastic Modulus | 75 | GPa | 25 |
| Yield Strength | 106 | MPa | 25 |
| Elongation | 11 | % | 25 |
| Hardness | 30 | HB500 | 25 |
| Fatigue Strength | 40 | MPa | 25 |
| Shear Strength | 70 | MPa | 25 |
| Thermal Conductivity | 210 | W/m-K | 25 |

3.3. Fly Ash

It is one of the cheapest industrial waste which is produced by thermal power plants and other manufacturing industries. Fly ash is easily available at any power plant or in our daily use. Fly ash is the cheapest industrial waste produced by the industry which can be used as reinforcement in our experiment. Fly Ash has two classes as Class F and Class C.

We have used Fly Ash of F class as a reinforcement for the MMC. The particle size of Fly Ash is less than 100 μm . Composition and properties of Fly Ash are given below in table 3 and 4 respectively.

Table 3. Composition of Fly Ash

| Compounds | Weight (%) |
|---|------------|
| SiO ₂ | 60.32 |
| Al ₂ O ₃ | 20.41 |
| Fe ₂ O ₃ + Fe ₃ O ₄ | 8.14 |
| MgO + CaO + SO ₄ | 4.11 |
| Other | 7.02 |

Table 4. Properties of Fly Ash

| Properties | Values | Units | Conditions (°C) |
|----------------------|--------|-------------------|-----------------|
| Density | 0.61 | g/cm ² | 25 |
| Poisson's Ratio | 0.17 | - | 25 |
| Melting Point | >1000 | °C | 25 |
| Tensile Strength | 140 | MPa | 25 |
| Elastic Limit | 145 | MPa | 25 |
| Young's Modulus | 71 | GPa | 25 |
| Bulk Modulus | 34.2 | GPa | 25 |
| Hardness | 6700 | MPa | 25 |
| Compressive Strength | 1300 | MPa | 25 |
| Shear Modulus | 30.2 | GPa | 25 |

3.4. Experimental Setup

Stir Casting method was used to form this composite of Aluminium and Fly Ash. Aluminium is in the chips where the Fly Ash is in powder form with size 0.1 to 100 μm . Stir Casting Setup includes the furnace with mild steel turbine stirrer. The furnace can achieve a maximum temperature of 1000°C which is sufficient for melting of Aluminium. Different percentage of Fly Ash is reinforced into the Metal Matrix to form a composite. We have taken Fly Ash at 0%, 5%, 10%, and 15%. Accordingly, we have made each sample with a different percentage of Fly Ash and Aluminium.

4. Methodology

- Form the different materials distribution for different percentage of Fly Ash.
- Heat the furnace up to 720°C i.e. more than melting temperature of Aluminium.
- To remove moisture, preheat the Fly Ash powder at 350°C for two hours.
- Insert chips of Aluminium setup of Stir Casting furnace for melting.
- At 720°C add the particles of Fly Ash in the furnace and start stirring process.
- Stir the melt with mild Steel turbine stirrer at an impeller speed of 250 rpm for 10 to 15 minutes.
- Pour the melt at a maintained temperature of 700°C into the mould.
- Allow melt to solidify in the mould in natural solidification.

5. Results and Discussion

The prepared Aluminium-Fly ash composite specimens were tested for different mechanical properties like hardness and tensile strength. Also it is tested for weight reduction. Hardness test is carried by using Rockwell cum Brinell Hardness Tester (Model-TRB250) and tensile strength is measured using (make-UTK 100E) of 100-ton capacity. Table 5 shows the measured hardness, tensile strength and weight reduction with variation in fly ash percentage.

Table 5. Test results of Aluminium Fly Ash Metal Matrix Composite

| Variation of Fly Ash | Hardness (BHN) | Tensile Strength (MPa) | Weight (gm) |
|----------------------|----------------|------------------------|-------------|
| Al | 55 | 108.20 | 810.04 |
| Al + 5 % Fly Ash | 62 | 119.85 | 791.5 |
| Al + 10 % Fly Ash | 68 | 131.23 | 773.04 |
| Al + 15 % Fly Ash | 66 | 127.25 | 754.56 |

5.1. Hardness Test

Hardness test is carried by using Rockwell cum Brinell Hardness Tester (Model-TRB250) for all the composites. The result of Brinell Hardness Test of each specimen respect to the various amount of Fly Ash is shown in Fig 1.

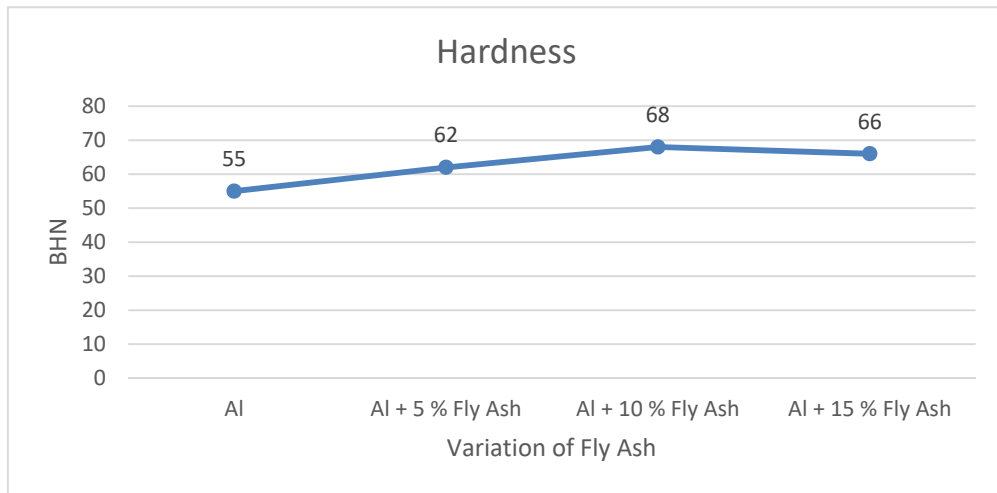


Figure 1. Hardness Test Results

The hardness of Al-Fly ash composite has been found to increase with increased fly ash percentage up to 10%. But further at 15% fly ash, the hardness found to reduce due to less wetting of fly ash particles and improper mixing.

5.2. Tensile Test

The tensile test is carried by using (make-UTK 100E) of 1000 KN capacity for all the composites. Following (Fig.2) is the result of tensile test of each specimen respect to the various percentage of Fly Ash.

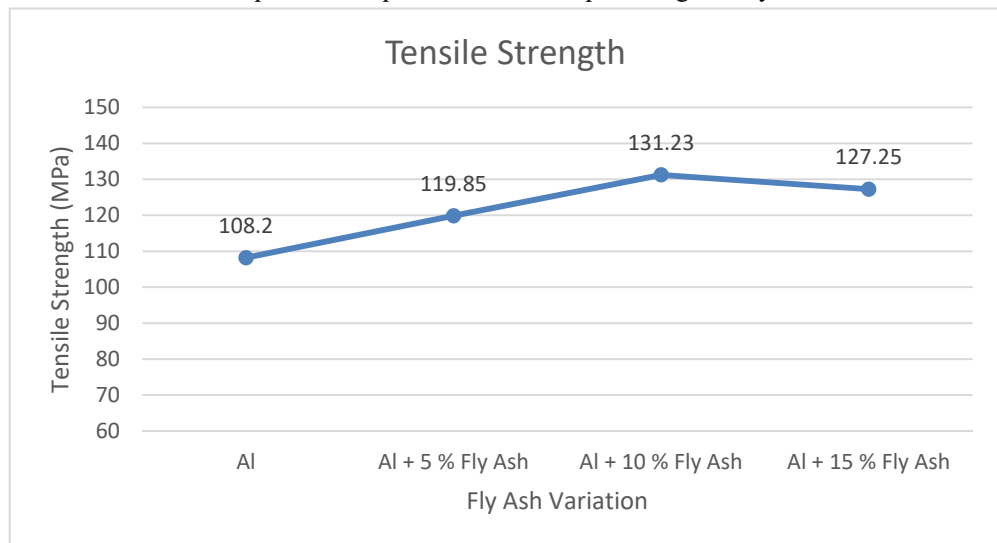


Figure 2. Tensile Test Results

The tensile strength of Aluminium-Fly ash composite has been found to increase with increased fly ash percentage up to 10%. But further at 15% fly ash, the hardness found to reduce due to less wetting of fly ash particles and improper mixing. The maximum tensile strength has been noted as 131.23 MPa at 10% fly ash percentage.

5.3. Weight Reduction Test

Fly Ash is lighter than commercially pure Aluminium hence the prepared composite is lighter than conventional material. For this testing, we have considered blocks of material with dimensions of length, width and thickness of 100 mm, 100 mm, 30 mm respectively.

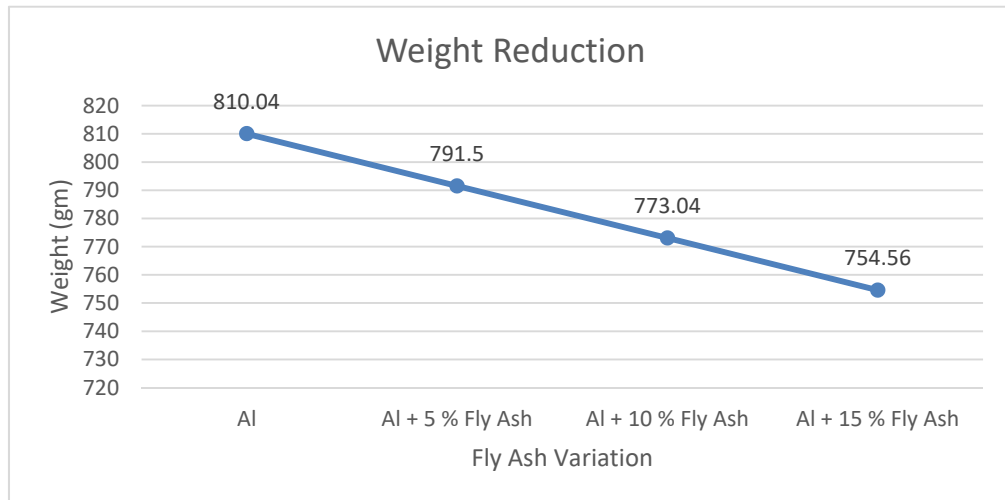


Figure 3. Weight Reduction Test Results

The weight of material gets decreased as the fly ash is added in it. As fly ash is lighter material, weight will be gradually decreased with addition of fly ash. The result is shown in fig 3.

6. Conclusion

- We have successfully added up to 15 % Fly Ash in commercially pure Aluminium to form Metal Matrix Composite which helps to turn industrial waste as industrial wealth.
- We have observed that Hardness and Tensile Strength of Aluminium Fly Ash MMC are more than commercially pure Aluminium.
- Fly Ash can be used in metals to improve strength to weight ratio of materials.
- This prepared composite may be used in Aerospace and Automotive applications instead of conventional materials.

Acknowledgements

The authors of this paper would like to thank Dr. S. G. Kulkarni, SKN COE Korti, for providing the setup of Stir Casting and necessary arrangements. We also thank Dr. N. D. Misal, COE Poly. Engineering, Pandharpur for providing necessary equipment for testing and analysis. Also, authors thanks to readers and investigators of this paper and would happy to receive any comments.

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Participative learning through Cultural Activities

- **Professional Ethics and Responsibilities**
- **Team work**
- **Activity Planning and Management Skills**

Beats 2018



Traditional Day






Engineer's day celebration on 15.09.2018



Participative learning through NSS Activities

- **Professional Ethics and Responsibilities**
- **Team work**
- **Leadership Skills**
- **Solve Societal Issues**

Sample Report of NSS Camp

| | | |
|---|--|---|
|  | <p>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</p> |  <p>ISO 9001:2015 www.tuv.com ID: 9105048196</p>  |
|---|--|---|

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 SVERI's College of Engineering Pandharpur and Gram Panchayat Ranjani near Pandharpur. For this event total 170 students were participated from different departments. Students have performed 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.

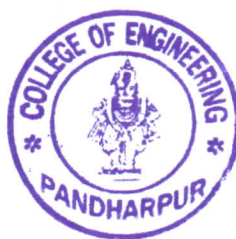
Snap during swachhata abhiyan activity at Gram Panchayat Ranjani




Group Snap at NSS Camp







NSS Programme Officer




Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

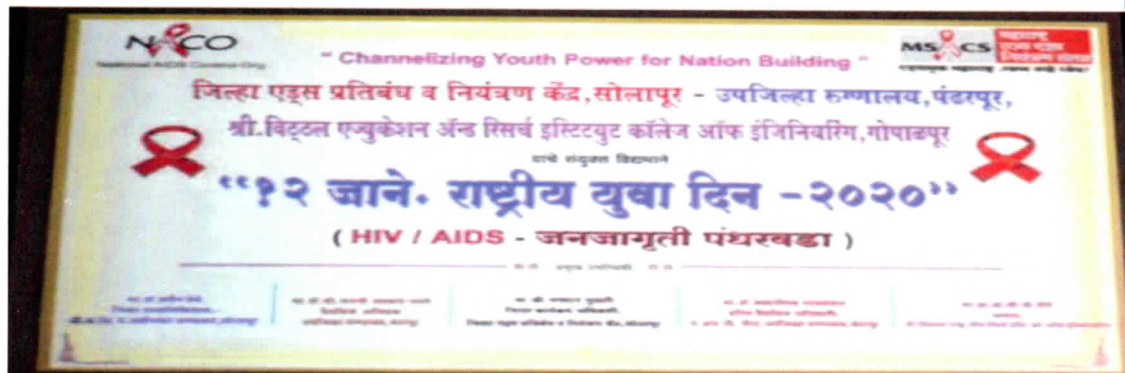
HIV AIDS Awareness Session Under NSS Activity

| | |
|---|--|
|  | <p>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</p> <div data-bbox="1204 302 1508 436"><p>ISO 9001:2015 www.tuv.com ID 9105048196</p></div> |
|---|--|

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.

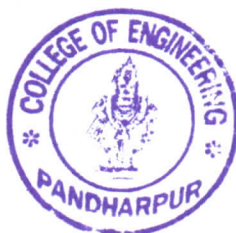
HIVAIDS Awareness session




Inauguration of HIVAIDS Awareness session







NSS Programme Officer




Principal
PRINCIPAL,
College of Engineering,
PANDHARPUR

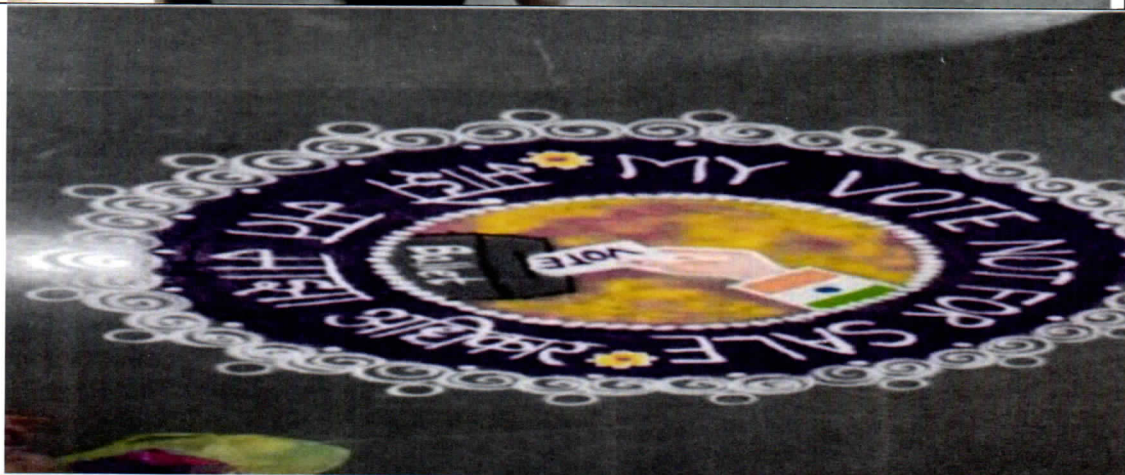
Rangoli Competition on Importance of Voting Under NSS


| | | |
|---|--|--|
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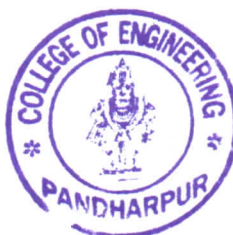
NSS Activity Report

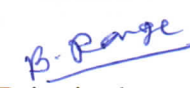
- **Name of the Activity:** Rangoli Competition on importance of voting
- **Date:** 22.1.2020
- **No. of Participants:** 25
- **Brief report:** Our College has organized a Rangoli completion on the subject importance of voting. A student has shown their creativity through the excellent rangoli art and also gives message 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




Principal
College of Engineering,
PANDHARPUR


Mini Marathon Jointly Organized by Pandharpur Tehsil Under NSS

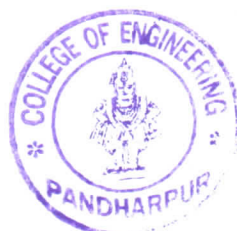
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|---|--|--|


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,
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PANDHARPUR

Voter Day Celebration Under NSS

| | | |
|---|--|--|
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|---|--|--|

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 SVERI's 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.

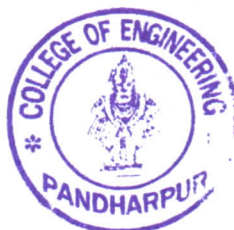
Snap Before Rally at Pandharpur Tahsil Office Pandharpur

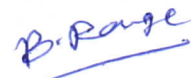


Snap during Rally at Pandharpur




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Blood Donation Camp Under NSS



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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 SVERI's 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)



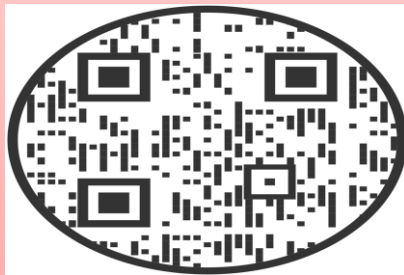
B. R. S. D.
NSS Programme Officer



B. R. S. D.
Principal
PRINCIPAL,
College of Engineering
PANDHARPUR

Participative Learning through Mock Parliament and United Nations Security Council (UNSC)

- **Communication Effectively**
- **Team work**



Video Link: <https://youtu.be/SWUtd1vxkkw>



SHRI VITHAL EDUCATION & RESEARCH INSTITUTE's

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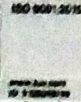
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NOTICE

Date: 22/09/2018

All the students of ENTC Department are here by informed to note. We are going to conduct the 'Mock Parliament 2k19' on 01/10/2018 under ELITE. Attendance is compulsory for all the students. In the view of this please submit the theme (Topic) and interested student names to the undersigned on or before 28/09/2018.

ELITE President: Ms.Vaishanvi Patki. BE B

ELITE Vice President: Ms. Banu Chavan. BE A

ELITE Secretary: Mr.Pandurang Misal. TE A

ELITE Joint Secretary: Mr.Rohit Ranware. TE B




ELITE Coordinator

HOD ENTC

HEAD

Dept. of Electronics & Telecom. Engg.

C. O. C. Pandharpur

| | | |
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Date 22/09/2018

OFFICE ORDER

The following students were deputed for the smooth conduction of MOCK PARLIAMENT 2K19 on 01/10/2018.

| Sr.no. | Committee Name | Faculty Name | Student Coordinator |
|--------|-----------------------------------|-----------------------------|---|
| 1 | Overall Organization | Akshay Jadhav | IMs.Vaishanvi Patki. Mr.Pandurang Misal |
| 2 | Decoration and guest felicitation | /ASS /SRP | Ms.Sayli Gadekar |
| 3 | PA system | VSB | Mr.Vishal Gaikwad |
| 4 | Discipline | HKB SAI /JSS /MMPr | Mr.Annasaheb Satpute Ms.Banubai Chavan |
| 5 | Transportation | DPN | Mr.Rushikesh More |
| 6 | Anchoring | NPK | Ms Vaishnavi patki |
| 7 | Photography and video | /SDP /SSG | Mr.Sushant Aldar |


ELITE Coordinator


HOD ENTC

HEAD

Dept. of Electronics & Telecom. Engg.
 C. O. F. Pandharpur



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ISO 9001:2015



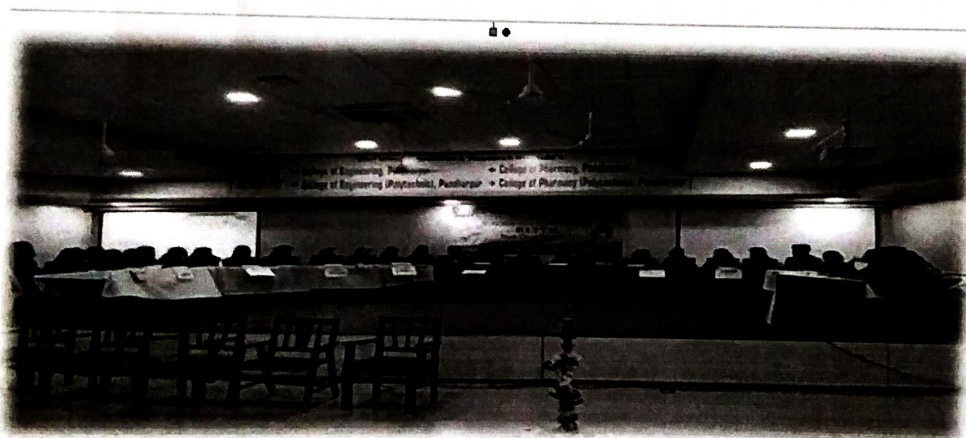
Date: 01/10/2018

Mock Parliament (Digital India Initiative)

In order to give the Societal and governance exposure to students we have conducted the Mock Parliament. The Theme for the Mock Parliament is **Digital India Initiative**. **Digital India** is an Initiative by the Government of India to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing Internet connectivity. It was launched on 1 July 2015 by Prime Minister Narendra Modi. The initiative includes plans to connect rural areas with high speed internet networks. Digital India has three core components. These include:

- The creation of digital infrastructure
- Delivering services digitally
- Digital Literacy

The Inauguration was initiated by Enlighten the lamp by the Dean Students Dr.A.A.Utpat, HOD ENTC Dr.A.S.Vibhute. The anchoring role was played during this activity by Ms Vaishnavi patki. Overall coordination of the Mock Parliament was done By Mr Pandurang Misal and Ms Vaishnavi patki. All the Students from SE TE & BE have participated in this Activity. Some Glimpses of the Mock parliament areas below



ELITE Coordinator

HOD ENTC

HEAD

Dept. of Electronics & Telecom. Engg.

^ O U Pandharpur

Participative Learning through Moodle

- **Individual Participation**
- **Subject Based Knowledge on Engineering Fundamentals**

Signed in as ce16eca31gate: Test 1

ofs.sveri.edu/moodle/mod/quiz/view.php?id=1384

Search

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PRIYANKA SHINDE

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Participants

Badges

Competencies

Grades

General

1.Digital Techniques

2.Network Theory

3.Engineering Mathematics

4.COMMUNICATIONS

5. CONTROL SYSTEMS

Dashboard

Grading method: Highest grade

Summary of your previous attempts

| Attempt | State | Marks / 9.00 | Grade / 10.00 | Review |
|---------|---|--------------|---------------|------------------------|
| 1 | Finished Submitted Sunday, 15 July 2018, 1:27 PM | 3.00 | 3.33 | Review |
| 2 | Finished Submitted Sunday, 19 August 2018, 1:30 PM | 5.00 | 5.56 | Review |
| 3 | Finished Submitted Sunday, 19 August 2018, 1:32 PM | 8.00 | 8.89 | Review |

Highest grade: 8.89 / 10.00.

Re-attempt quiz

1:15 PM

8/19/2018

GATE

[Dashboard](#) / [My courses](#) / [gate](#) / [1.Digital Techniques](#) / [Test 2](#)

Test 2

Grading method: Highest grade

Summary of your previous attempts

| Attempt | State | Marks / 11.00 | Grade / 10.00 | Review |
|---------|---|---------------|---------------|------------------------|
| 1 | Finished Submitted Thursday, 19 July 2018, 4:50 PM | 6.00 | 5.45 | Review |

Highest grade: 5.45 / 10.00.

Re-attempt quiz

GATE

[Dashboard](#) / [My courses](#) / [gate](#) / [1.Digital Techniques](#) / [Test 1](#)

Test 1

[Test 1](#)

Grading method: Highest grade

Summary of your previous attempts

| Attempt | State | Grade / 10.00 | Review |
|---------|---|---------------|------------------------|
| 1 | Finished Submitted Thursday, 19 July 2018, 4:45 PM | 10.00 | Review |

Highest grade: 10.00 / 10.00.

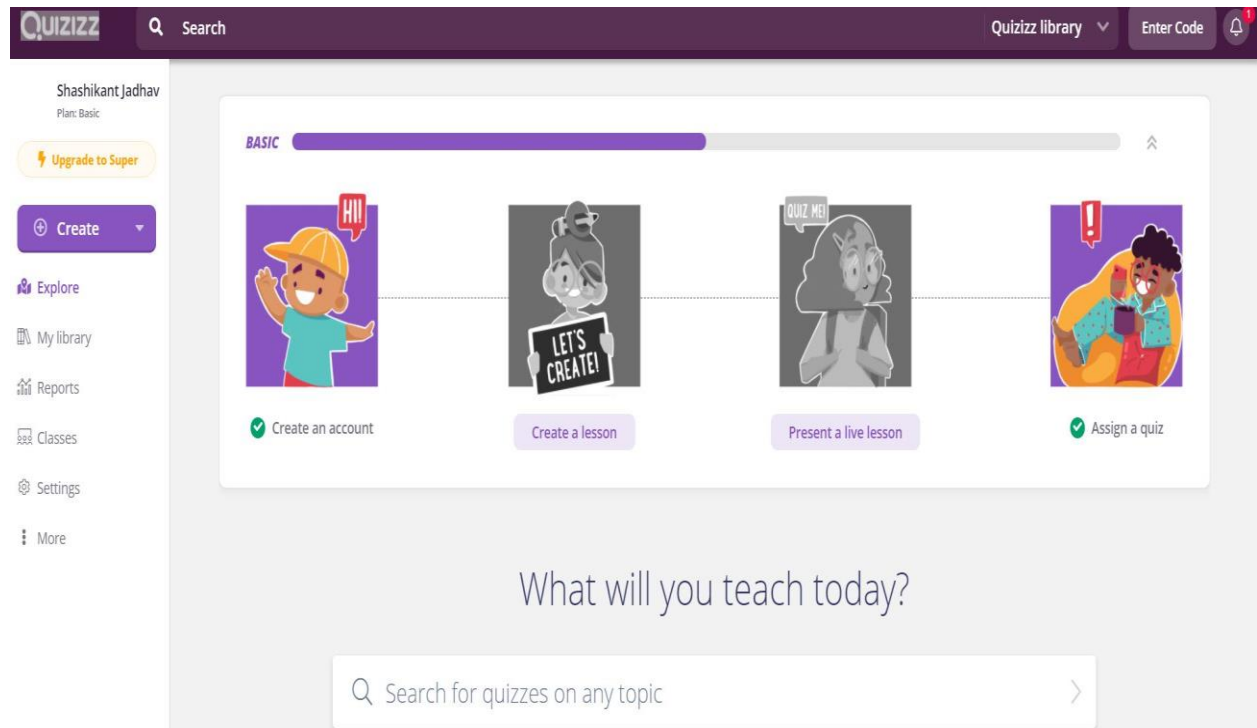
Re-attempt quiz

Participative learning through Quiz

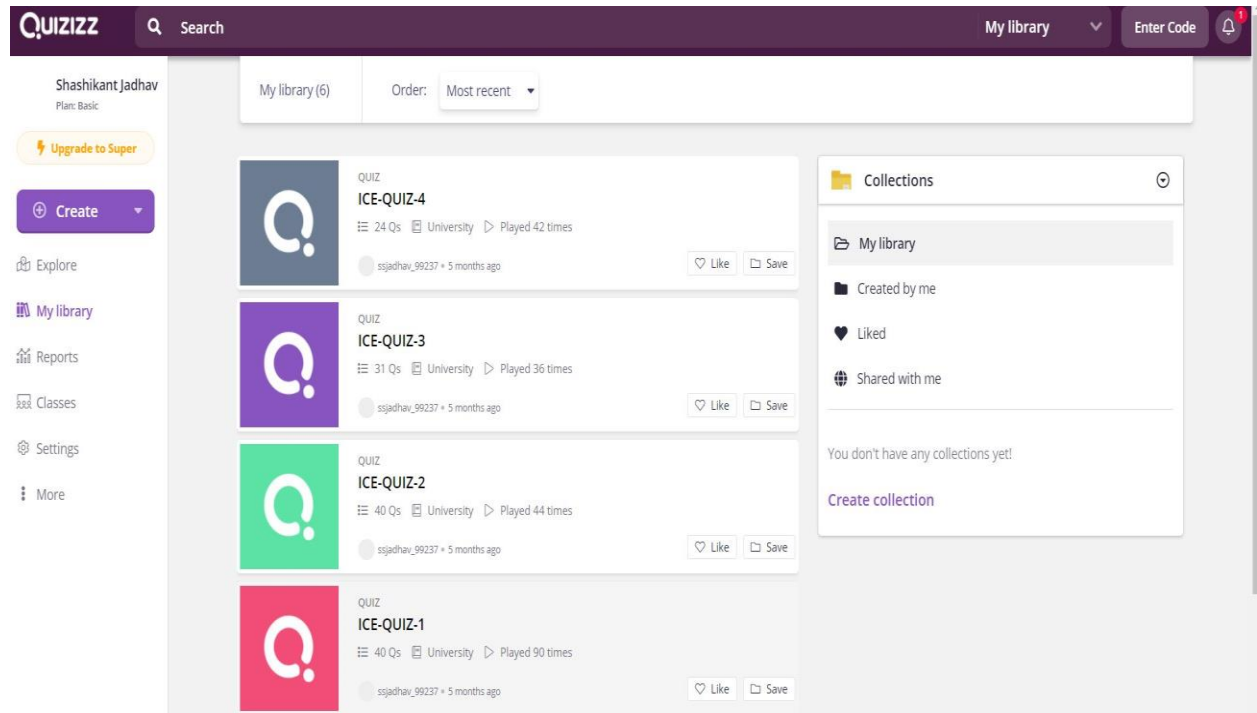
- **Subject Based Knowledge on Engineering Fundamentals**

Sample Quiz Conected on Join My Quiz Platform

1. Creating QUIZ on platform.



2. Saved MCQ tests on Platform.



3. Reports of MCQ Tests.

Shashikant Jadhav
Plan: Basic

Upgrade to Super

Create

Explore

My library

Reports

Classes

Settings

More

Quizizz

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Enter Code

All reports

Filter by class

Filter by date

| Type | Quiz name | Total participants | Accuracy | Code |
|----------|--------------------------------------|--------------------|----------|--------|
| Assigned | ICE-QUIZ-3 Completed 4 months ago | 36 | 55% | Reopen |
| Assigned | ICE-QUIZ-4 Completed 4 months ago | 41 | 52% | Reopen |
| Assigned | ICE-QUIZ-2 Completed 5 months ago | 9 | 30% | Reopen |
| Assigned | ICE-QUIZ-2 Completed 5 months ago | 34 | 51% | Reopen |
| Assigned | ICE-QUIZ-1 Completed 5 months ago | 15 | 26% | Reopen |
| Assigned | ICE-QUIZ-1 Completed 5 months ago | 44 | 59% | Reopen |

<< < 1 > >>

4. Result of MCQ test.

Shashikant Jadhav
Plan: Basic

Upgrade to Super

Create

Explore

My library

Reports

Classes

Settings

Memes

Collections

Profile

Log out

Less

Help

Quizizz

Search

Reports

Enter Code

Assigned quiz

ICE-QUIZ-3

November 7th 2020, 10:34 AM (4 months ago)

View quiz

Flashcards

55%

31

36

Accuracy

Questions

Participant Attempts

Participants

Questions

Overview

Topics

Print

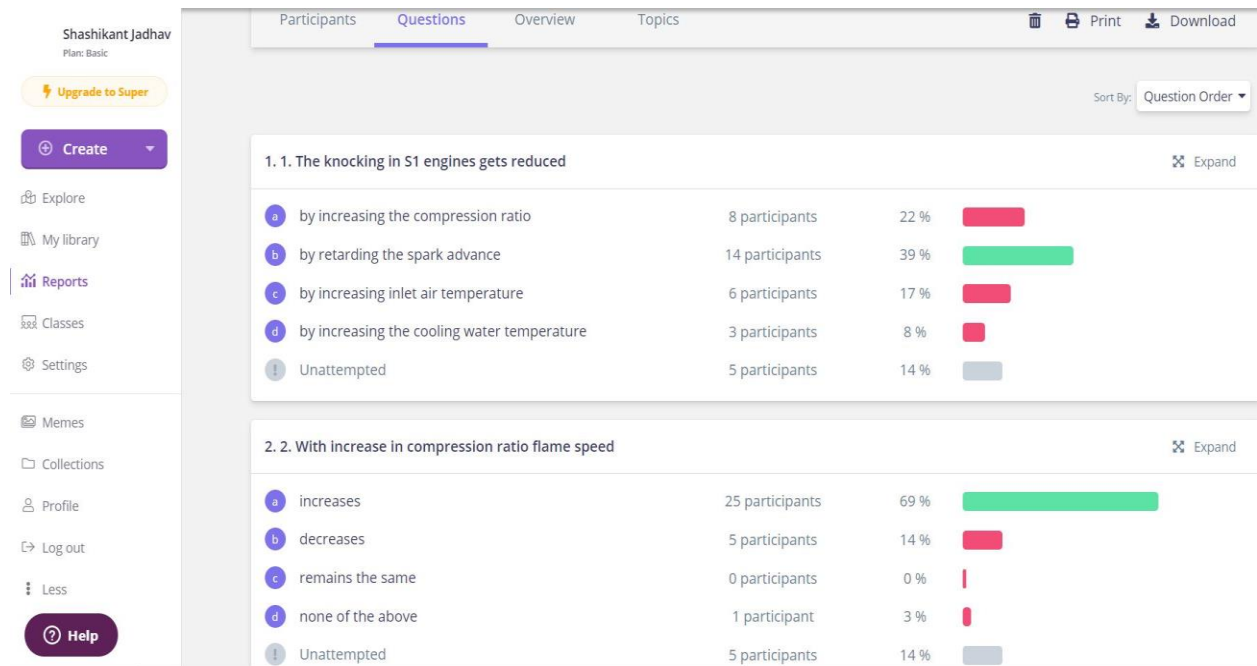
Download

Sort By: Score

Email all parents

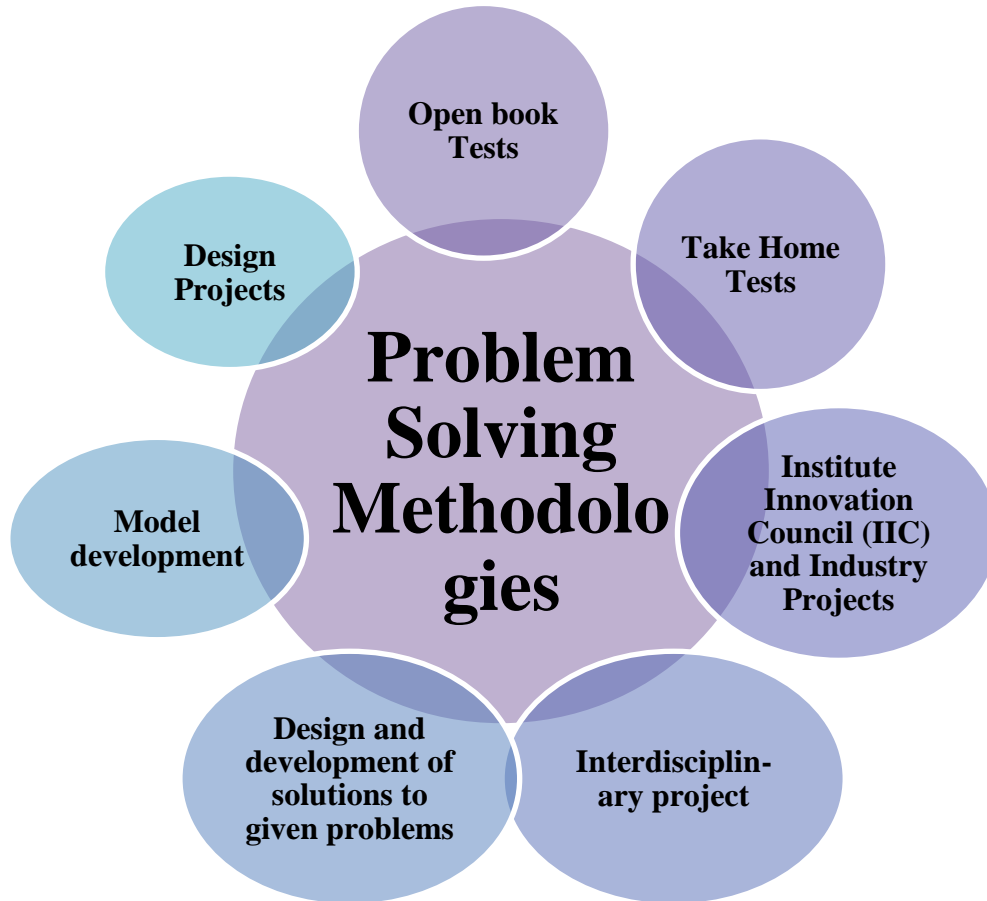
| | | | | |
|----------------------------|------|---------------|-------------|-----------------|
| SY_18_SACHIN SUTAR (S... | ✓ 30 | 97% Accuracy | 25970 Score | Email to Parent |
| DIKSHA ADMILE (Sy-45 ... | ✓ 31 | 100% Accuracy | 25280 Score | Email to Parent |
| GAURAV GHAYTIDAK (G... | ✓ 28 | 90% Accuracy | 24640 Score | Email to Parent |
| Prashant Avalekar (SY 5... | ✓ 27 | 87% Accuracy | 23790 Score | Email to Parent |
| ROHAN BHANDARE (RO... | ✓ 27 | 87% Accuracy | 23560 Score | Email to Parent |

5. Question wise analysis of student.



PROBLEM SOLVING METHODOLOGIES

Following techniques are employed to inculcate problem solving approach among students:





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COLLEGE OF ENGINEERING, PANDHARPUR
 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



ISO 9001:2015



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 ID: 310004194

| Sr. No. | Name of the Activity | Purpose of Activity |
|---------|---|---|
| 1 | Open Book Tests and Take Home Tests | To test students' ability to quickly find relevant information and then to understand, analyze and apply knowledge. |
| 2 | Real Time Projects through IIC and Industries | Real-time projects give knowledge acquisition based on immediate needs. |
| 3 | Interdisciplinary Project Activities | Purpose of interdisciplinary activities is to enable students to improve their analysis abilities by using approaches from different disciplines. |
| 4 | Programming Contests | programming contest helps students to build problem-solving skills |
| 5 | Model Development | Purpose of model development is to help students to visualize a system and make predictions about how systems will behave under given conditions |
| 6 | Design Projects | Purpose of design project is to problem solving skills and incorporate creativity into learning |

Problem Solving Methodologies through Open Book Test (OBT) & Take Home Test (THT)

- **Solve Complex Engineering Problems**
- **Life Long Learning**
- **Function effectively as an Individual Life Long Learning**

OBT & THT NOTICE



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



ISO 9001:2015




Date: 20/06/2019

Notice

All the subject teachers of all the Departments are hereby informed to note the following guidelines regarding the setting of the Question Papers of Open Book Tests (OBTs) and Take-Home Tests (THTs) for the students of their respective departments:

- 1) The subject teacher should ensure that OBT questions should be from competitive exam papers such as GATE/UPSC/MPSC/SSC etc. Also, for subjects related to software, subject teachers can also include questions from placement examinations like TCS/Wipro/Infosys etc.
- 2) THT papers should involve questions related to real world problems solving, design or development of technical solutions, and open-ended solution-based questions, research paper /patent searching by referring journal papers or patents, etc.
- 3) OBT and THT examination should be of 20 marks, and the marks obtained by each student should be converted into 5 marks, using the percentile system of marking.
- 4) HoDs are informed to ensure the effective implementation of the above policies in their departments.

All the concerned should take note and act accordingly.


(Dr. P. M. Pawar)
Dean Academics

Sample OBT Question Paper

SVERI'S College of Engineering, Pandharpur
Department of Electronics and Telecommunication Engineering
Class: BE(A&B) OBT-I A.Y.: 2019-20 SEM-II
Internet of Things

Day and Date: 13/02/2020

Time-9:30 to 10:30am

Marks - 20

Duration-1 hr

| CO | CO STATEMENT |
|---------|--|
| ET421.1 | Student can explain different components of an IoT System. |

Instructions - 1) ALL Questions are compulsory.

2) Assume Suitable Data If Required.

Q) Solve the following

| | Marks | (CO) | BL | PI |
|---|-------|---------|----|-------|
| 1. List the components available in Intel based in intelligent gateway for smart home | 4 | ET421.1 | 1 | 2.1.1 |
| 2. Show the comparison between OSI layer and ITU-T reference model layers | 8 | ET421.1 | 3 | 3.1.5 |
| 3. With a neat diagram illustrate the IoT reference architecture suggested by Oracle. | 8 | ET421.1 | 3 | 9.2.1 |

Sample OBT Answersheet



Shri Vitthal Education & Research Institute's COLLEGE OF ENGINEERING, PANDHARPUR

ISE / Unit Test No. OBT-1 Date 17/2/2020

Name of Student Rokade Soniya Sanjay

Class BE (ENTC)

Division A

Roll No. 31

Subject IOT

Sign of Supervisor [Signature]

Marks 18/20

| CO: | BL | PI Code | Q.No. | a | b | c | d | e | f | Total |
|-------------|----|---------|-------|---|---|---|---|---|---|-------|
| 1 | 1 | 2.1.1 | 1 | | | | | | | 4 |
| 1 | 3 | 3.1.5 | 2 | | | | | | | 8 |
| 1 | 3 | 2.2.1 | 3 | | | | | | | 6 |
| | | | 4 | | | | | | | |
| | | | 5 | | | | | | | |
| | | | 6 | | | | | | | |
| | | | 7 | | | | | | | |
| | | | 8 | | | | | | | |
| Grand Total | | | | | | | | | | 18 |

1) List the components available in intel based in intelligent gateway for smart Home.

⇒ Smart Home technologies:-

Today there are various different smart Home technologies available from different IOT vendors. Most operates using Wi-Fi, Bluetooth or Zigbee operates using Comm and can be connected to most wireless personal area networks (WPANS).

These smart meters, cameras, sensors, & devices are capable of performing virtually any function around the Home from security & surveillance to automation of everyday chores such as vacuuming.

- Smart Home Gateway :-

one of the goals of a smart home is convenience and managing a number of smart devices through multiple apps for your home can become completely the opposite if not for the smart home gateway.

smart home gateway sim are an essential part of smart home automation providing centralized management for the user.

- Smart meter :-

smart meters are an important part of a smart home as energy efficiency is pretty much at the heart of building smarter societies using latest technologies. smart meters are built for near real time two way comm betⁿ energy supplier & the consumer over a wireless network.

smart meters are connected to the neighborhood area network using RF commⁿ protocols.

- ZigBee :-

In order to be able to work efficiently, smart home appliances such as smart thermostats, motion plethora of gadgets & devices available from IoT vendors needs to be able to send & Rx data so as to allow them to analyse & process it in order to fⁿ optimally.

- camera based Access Control :-

one of the most exciting applications is camera based access control, whereby networked cameras are located outside a property, just above a front door, for example & work together with motion sensors in order to send notifications via apps to the app user when the sensors area of operation is entered.

2) show the comparison betⁿ OSI layer & ITU-T reference model layers.

OSI layer

ITU-T layer

1) OSI modified six layers 1) ITU-T Reference model four-layers capabilities.

2) Data communicate at source end from Applⁿ.

2) Data communicate from device end (layer-1) to Applⁿ end (layer-4)

3) Stack means data part + protocol header bit/words which transfer at one go.

3) stack means data part + protocol header bit/words which interchange betⁿ two layer.

4) data stack create by the process in betⁿ layers from top layer 6 to bottom funⁿ layer 1 for commⁿ.

4) data stack creates by the process in betⁿ layers, betⁿ the top layer 4 & bottom funⁿ layer 1.

5) Data transmits from the device end (layer 1) from an applⁿ service or process end (layer 4).

5) Data also receive at the device layer (layer 1) from an Applⁿ service or process end (layer 4).

6) Data stack process during the commⁿ betⁿ the physical & applⁿ layers.

6) data stack process bottom device layer to top functional layer.

Q3) With a neat diagram illustrate the IOT ref. arch. suggested by Oracle.

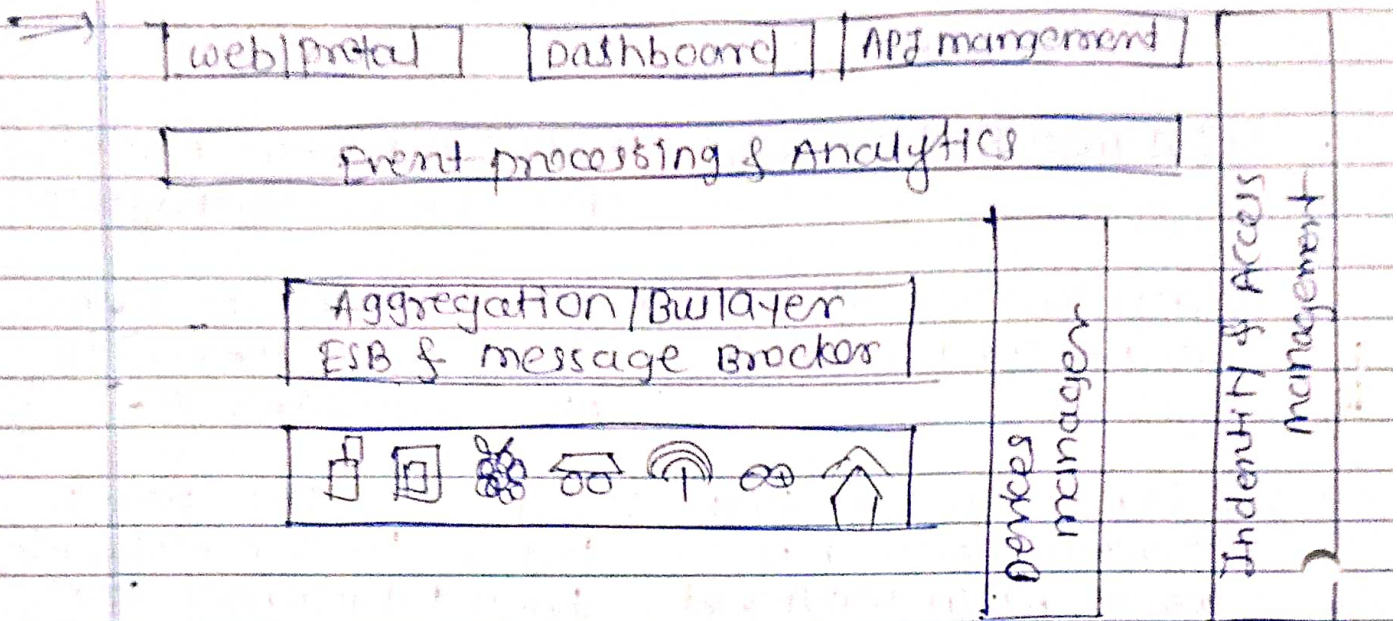


Fig. Ref. arch. for IOT.

The ref. arch. consists of a set of components layers can be realized by means of specific technologies, & we will discuss options for realizing each component.

These are also some cross-cutting/vertical layers such as access/identity management.

The bottom layer of the arch. is the device layer. Devices can be considered as IoT devices, they must have some common that either indirectly or directly attaches to the Internet.

The commⁿ layer supports the connectivity of the devices.

Sample OBT Result



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Dist. Solapur (Maharashtra) Ph. (02186) 225083, Fax (02186) 225082
(Approved by AICTE, New Delhi and affiliated to Solapur University, Solapur)

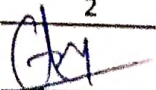
Electronics and Telecommunication Engineering Dept.

OBT-I Marklist 2019-20 Sem-II

Class : BE-A

| Roll.No. | Name | IoT |
|----------|---------------------------------|-----|
| 1 | ASABE VAISHNAVI TANAJI | 18 |
| 2 | AWAD ASHA RAJABHAU | 19 |
| 3 | BAAD POOJA ARJUN | 19 |
| 4 | BAGAL ANURADHA HARIDAS | 16 |
| 5 | BANSODE USHA SUNIL | 12 |
| 6 | CHAVAN SAYALI DILIP | 13 |
| 7 | DARGUDE PRATIKSHA NAGNATH | 19 |
| 8 | DESHMUKH ASHWINI MADHUKAR | 16 |
| 9 | DEVKAR ARTI CHANDRAKANT | 17 |
| 10 | DUBAL SAMIKSHA NANASO | 19 |
| 11 | GHADAGE POOJA ANIL | 18 |
| 12 | HAKRE PRERANA PRAKASH | 18 |
| 13 | JADHAV PRANITA SUNIL | 18 |
| 14 | JAGTAP ANIKETA ASHOK | 19 |
| 15 | KALDHONE AMRUTA SANJAY | 19 |
| 16 | KAMBLE RESHMA HANUMANT | 16 |
| 17 | KAMBALE SNEHAL BHASKAR | 19 |
| 18 | KHARADE PRAGATI DINESH | 17 |
| 19 | KOLI SAYALI SHAMRAO | 19 |
| 20 | KOLI VRUSHALI RAJENDRA | 19 |
| 21 | DHANSHREE LOKHANDE | 18 |
| 22 | MANE PRACHI AVADHUT | 18 |
| 23 | MARADKAR DNYANESHWARI SURYAKANT | 14 |
| 24 | MOHOLKAR MANASI MAHESH | 19 |
| 25 | MORE TANUJA ASHOK | 17 |
| 26 | MUJAWAR SIMRAN HAJISAHEB | 16 |
| 27 | NAGANE PRIYANKA VITTHAL | 16 |
| 28 | PARBAT SUPRIYA SAYAJI | 15 |
| 29 | PATIL SAYALI SURYAKANT | 16 |
| 30 | PATIL SONALI SATISH | 20 |
| 31 | ROKADE SONIYA SANJAY | 18 |
| 32 | RONGE SWAPNJA YUVRAJ | 20 |
| 33 | SALUNKHE ASHWINI KERAPPA | 15 |
| 34 | SANJEKAR PRATIKSHA VIJAY | 14 |
| 35 | SHINDE PRIYANKA SUBHASH | 15 |
| 36 | SHINGADE VARSHA BALVANT | 15 |
| 37 | TAMBOLI ANISA KADAR | 15 |
| 38 | TARANGE RESHMA SHAM | 15 |
| 39 | VHANMANE SONALI KANHAIYALAL | 16 |
| 40 | WAGHMODE YAMINI VILAS | 19 |

| | | |
|----|-------------------------------|----|
| 41 | WAKADE PRAJAKTA KASHINATH | 16 |
| 42 | WAYKULE PALLAVI DATTATRAY | 10 |
| 43 | YADAV CHHAYA APPA | 17 |
| 44 | YADAV KAJAL ANIL | 15 |
| 45 | YELMAR SUCHETA BHARAT | 17 |
| 46 | KATKAR POOJA APPASAHEB | 17 |
| 47 | PATHAK PRAJAKTA PARMOD | 18 |
| 48 | KEWATE SNEHAL DILIP | 16 |
| 49 | BHUSE AJINKYA CHANDRAKANT | 5 |
| 50 | DANURE SIDHARAM GANPATRAO | 11 |
| 51 | GAIKWAD VISHAL ASHOK | 8 |
| 52 | GHAYAL MANOJ BALIRAM | 6 |
| 53 | KALUBARME PRASHANT DATTATRAYA | 16 |
| 54 | KAMBLE MAHESH BIBHISHAN | 11 |
| 55 | KATTE VIJAY DHANAPPA | 11 |
| 56 | MISAL PANDURANG DHONDIRAM | 15 |
| 57 | MORE SANKET HANUMANT | 0 |
| 58 | NAVADKAR GANESH MACHINDRA | 19 |
| 59 | SATPUTE ANNASAHEB SAHEBRAO | 0 |
| 60 | SHIRAM AMOL VITTHAL | 18 |
| 61 | UPASE SANGMESH VIKAS | 9 |
| 62 | PATIL MUKUL MADHUSUDAN | 11 |
| 63 | TAWARE DADASAHEB | 16 |

| Result Analysis | |
|--|--|
| | M-III |
| Total no of students | 63 |
| No. of Students appeared for the TEST | 61 |
| No. of absent Students | 2 |
| No. of Passed Students | 59 |
| No. of Students failed | 4 |
| No. of students scored marks between 40% to 50% | 2 |
| No. of students scored marks between 50% to 60% | 5 |
| No. of students scored marks between 60% to 70% | 2 |
| No. of students scored marks between 70% to 80% | 10 |
| No. of students scored marks between 80% to 100% | 38 |
| No. of students scored marks= 100% | 2 |
| Sign of Subject Teacher |  |


HEAD
 Dept. of Electronics & Telecom. Engg.
 Pandharpur

Sample THT Question Paper

SVERIP'S College of Engineering, Pandharpur

Department of Electronics and Telecommunication Engineering

B.E.-A&B (ENTC) THT-I Academic Year -2019-20
Internet of Things

Day and Date-13/02/2020
Time-

Marks - 20 M
Duration-1 hr

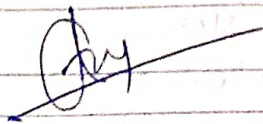
| CO | CO STATEMENT |
|---------|--|
| ET421.1 | Student can explain different component of an IoT system |

Instructions - 1) All Questions are compulsory.
2) Assume Suitable Data If Required.

| Q. No. | Question | Marks | CO | BL | PI |
|--------|---|-------|---------|----|-------|
| 1. | Design and draw IoT based smart irrigation system | 10 | ET421.1 | 3 | 9.2.1 |
| 2. | Write in detail different component of IoT | 10 | ET421.1 | 1 | 2.1.1 |

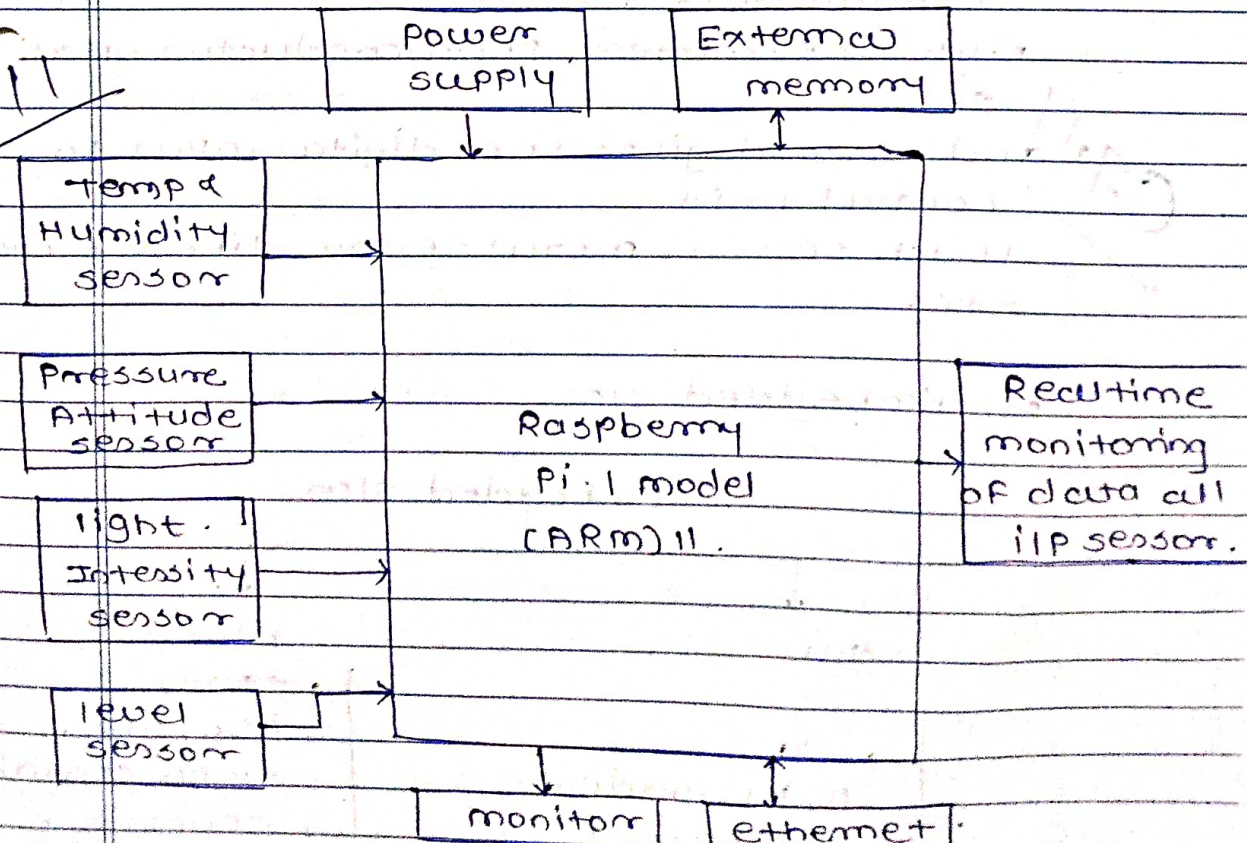


Shri Vitthal

Sample THE Answersheet**COLLEGE OF ENGINEERING, PANDHARPUR**ISE / Unit Test No.: Take Home Test Date: Name of Student: Pranjana Pramod PatilClass: BEDivision: ARoll No.: A-47Subject: IOTSign of Supervisor: Marks: 18
20

| CO: | BL | PI Code | Q.No. | a | b | c | d | e | f | Total |
|-------------|----|---------|-------|----|---|---|---|---|---|----------|
| 1 | 3 | 9.2.1 | 1 | 11 | | | | | | 11 |
| 1 | 1 | 2.1.1 | 2 | 8 | | | | | | 8 |
| | | | 3 | | | | | | | |
| | | | 4 | | | | | | | |
| | | | 5 | | | | | | | |
| | | | 6 | | | | | | | |
| | | | 7 | | | | | | | |
| | | | 8 | | | | | | | |
| Grand Total | | | | | | | | | | 18 20 |

que.] To design and draw IOT based Humidity and temp. monitoring.



2)
→

diff. component of IOT.

- 1) sensor.
- 2) Embedded sim.
- 3) communication sim.
- 4) cloud.

1) sensor :-

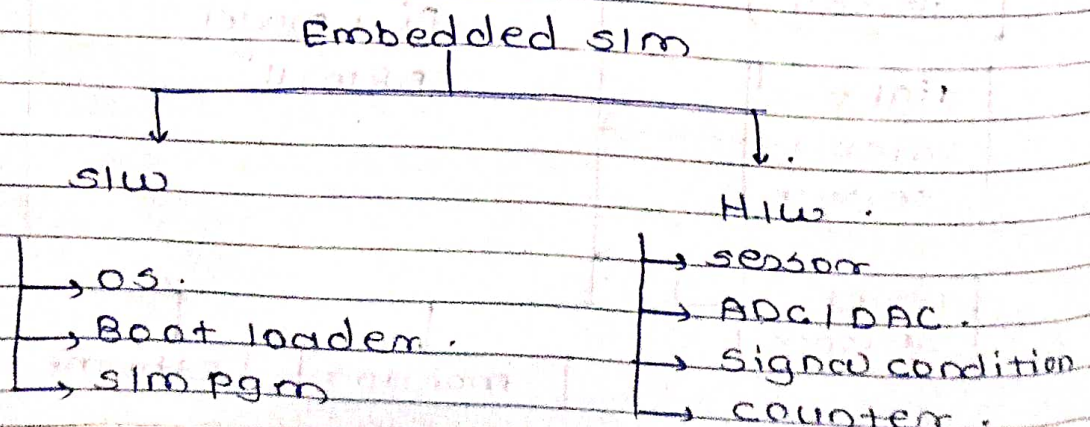
- Sensors are the electronics devices that sense physical environment and industrial automation sim.
- A smart sensor includes computing and communication facility.
- In Internet of the street light, each light has sensors for measuring surrounding light intensity and surrounding traffic.
- There are two types of the sensor. It gives the analog input to control unit.

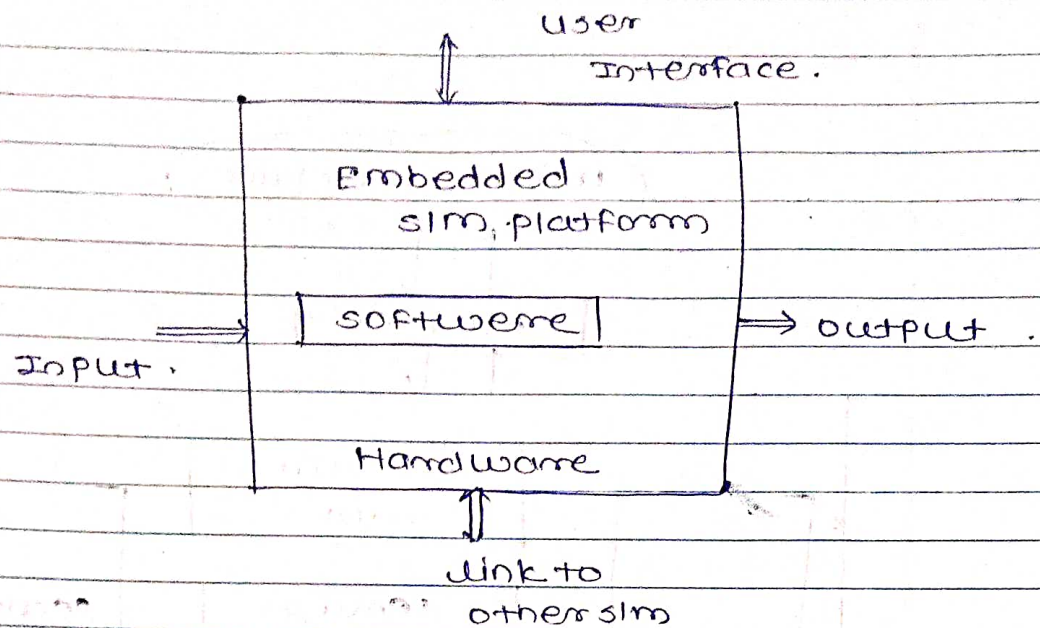
e.g.:- Thermistor, photoconductor, Hall sensor.

07/1 and second gives the digital input to control unit.

Touch sensor, metal sensor, linear encoder etc.

2) Embedded sim





3) communication sim:-

commⁿ means reliable exchange of info. between the source & destination

- The commⁿ link used in IoT may be wire or wireless.
- The commⁿ are the two types
 - 1) serial commⁿ
 - 2) parallel commⁿ
- A device message queue. Insert message in queue and delete message from queue FIFO manner.

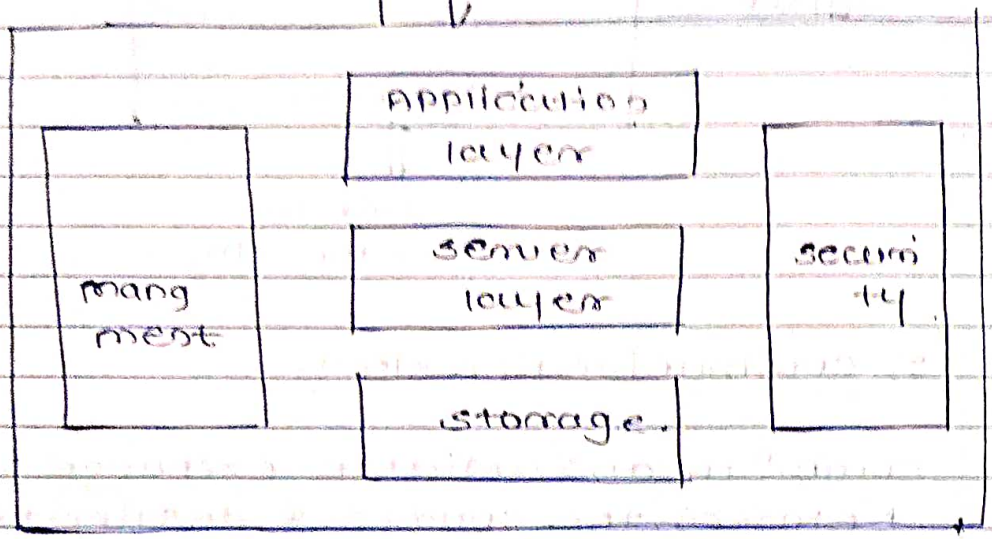
4) cloud

- It is the model computer data storage in which data is stored in local pools.
- The physical storage spans multiple server and physical environment is managed by Hosting component.
- The cloud storage service may be accessed through web services, API or by application that uses API such as cloud desktop.

Fig. cloud architecture.

user interface

internet



Sample THT Result



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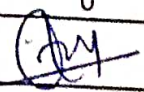
Electronics and Telecommunication Engineering Dept.

THT-I Marklist 2019-20 Sem-II

Class : BE-A

| Roll.No. | Name | IoT |
|----------|---------------------------------|-----|
| 1 | ASABE VAISHNAVI TANAJI | 18 |
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| 9 | DEVKAR ARTI CHANDRAKANT | 14 |
| 10 | DUBAL SAMIKSHA NANASO | 18 |
| 11 | GHADAGE POOJA ANIL | 16 |
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| 48 | KEWATE SNEHAL DILIP | 0 |
| 49 | BHUSE AJINKYA CHANDRAKANT | 15 |
| 50 | DANURE SIDHARAM GANPATRAO | 17 |
| 51 | GAIKWAD VISHAL ASHOK | 15 |
| 52 | GHAYAL MANOJ BALIRAM | 0 |
| 53 | KALUBARME PRASHANT DATTATRAYA | 15 |
| 54 | KAMBLE MAHESH BIBHISHAN | 17 |
| 55 | KATTE VIJAY DHANAPPA | 18 |
| 56 | MISAL PANDURANG DHONDIRAM | 16 |
| 57 | MORE SANKET HANUMANT | 16 |
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| 59 | SATPUTE ANNASAHEB SAHEBRAO | 0 |
| 60 | SHIRAM AMOL VITTHAL | 19 |
| 61 | UPASE SANGMESH VIKAS | 0 |
| 62 | PATIL MUKUL MADHUSUDAN | 0 |
| 63 | TAWARE DADASAHEB | 18 |

| Result Analysis | |
|--|--|
| | IoT |
| Total no of students | 63 |
| No. of Students appeared for the TEST | 54 |
| No. of absent Students | 9 |
| No. of Passed Students | 54 |
| No. of Students failed | 9 |
| No. of students scored marks between 40% to 50% | 2 |
| No. of students scored marks between 50% to 60% | 3 |
| No. of students scored marks between 60% to 70% | 1 |
| No. of students scored marks between 70% to 80% | 11 |
| No. of students scored marks between 80% to 100% | 37 |
| No. of students scored marks= 100% | 0 |
| Sign of Subject Teacher |  |

HEAD

Dept. of Electronics & Telecom. Engg.
- 01 Pandharpur

Problem Solving Methodologies through Industry Collaborative Projects


- **Solving Complex Engineering Problems**
- **Team Work**
- **Use of Modern Tools**
- **Professional Ethics and Responsibilities**
- **Communication**

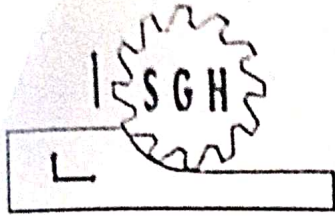
LIST OF INDUSTRY COLLABORATIVE PROJECTS

SVERI's College of Engineering, Pandharpur
Department of E& TC Engineering

Sponsored Project List 2018-19

| Sr. No. | Class & Div | Name of Students | Title of Project | Name of Guide | Sponsored by |
|---------|-------------|--------------------------------|---|------------------|---|
| 1 | BE B | Kamble Ananda Nagnath | Thumb Impression operated locking system for multiple user | Dr. A S Vibhute | Shri Samarth Industries, Aurangabad |
| | | Dhaware Ganesh Bhimarao | | | |
| | | Kadam Shrikant Uttamrao | | | |
| | | Khadbade Akash | | | |
| 2 | BE A | Upase Sidharth Ravindra | Cost effective E-rickshaw using Battery and Paddle | Mr. D A Kumbhar | S.G.Hightech, Aurangabad |
| | | Panpude Ajay Balak | | | |
| | | Kandi Nikhil Mallikarjun | | | |
| 3 | BE B | Adhvalkar Mayureshwar Hanmant | Electronic system to reduce setup time of Tube Mill Machine | Mr. J N Mohite | Shree Tube Mfg. Co. Pvt. Ltd., Aurangabad |
| | | Kumthe Kutuboddin H | | | |
| | | Patil Mahesh Jivan | | | |
| | | Naiknavare Tushar A | | | |
| 4 | BE A | Jadhav Nilesh Dnyaneshwar | Electronic Trolley for 50 KG | Mr. H K Bhaladar | S.G.Hightech, Aurangabad |
| | | Patil Gaurav Dnyandeve | | | |
| | | Adhatrav Madhav Prakash | | | |
| 5 | TE A&B | Ranaware Rohit Suhas | Universal test rig for multiple harnesses using Arduino. | Mr. D A Kumbhar | Coretech Aurangabad Pvt.Ltd. |
| | | Misal Pandurang Dhondiram | | | |
| | | Tate-Deshmukh Krishna Rajendra | | | |
| 6 | TE B | Yelsange Anjali Mahadeo | LDR based light ON/OFF with accuracy | Mr. D A Kumbhar | Coretech Aurangabad Pvt.Ltd. |
| | | Myakal Samita Balaji | | | |
| | | Katkar Anjali Pandurang | | | |


HEAD
Dept. of Electronics & Telecom. Engg.
S V E T Pandharpur



S. G. Hightech

(TOOL ROOM WORK & SS. MS. FABRICATION.)

Off. : 0240-2551121
Mob. : 9373710967
9822010967

Add. : Plot No. 23-A, Gut No.23, Near Cosmo Flim, MIDC, Waluj Aurangabad. 431 136. India
E-mail : sghitech@rediffmail.com / sghitech@yahoo.co.in / sghitech1096@gmail.com

Ref .

Date :

Date: 11.04.2019

The Principal,

SVERI's COE,

Pandharpur

Subject: Sponsored Project completion Certificate

Respected Sir,

With reference industry visit of Mr. Kumbhar D A and team on 08.08.2018, a sponsored project "Electronic trolley for 50 KG (Prototype)" was offered under Students Innovation Projects by MSME and MASSIA.

Following students have worked on the project and successfully completed the project as per our requirements.

1. Mr. MadhavAdhatrao (BE ENTC)
2. Mr. Gaurav Patil (BE ENTC)
3. Mr. NileshJadhav (BE ENTC)

The student's performance during project completion found satisfactory and we wish them all the best for their future.

Thanking you.

Regards,

Mr. Nikesh

Director



S. G. Hightech

Off. : 0240-2551121

Mob. : 9373710967

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(TOOL ROOM WORK & SS. MS. FABRICATION.)

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E-mail : sghitech@rediffmail.com / sghitech@yahoo.co.in / sghitech1096@gmail.com

Ref. :

Date :

Date: 11.04.2019

The Principal,

SVERI's COE,

Pandharpur

Subject: Sponsored Project completion Certificate

Respected Sir,

With reference industry visit of Mr. Kumbhar D A and team on 08.08.2018, a sponsored project "Cost Effective E-Rickshaw Using Battery & Paddle" was offered under Students Innovation Projects by MSME and MASSIA.

Following students have worked on the project and **successfully completed** the project as per our requirements.

1. Mr. Nikhil Kandi (BE ENTC)
2. Mr. Ajay Panpude (BE ENTC)
3. Mr. SidharthUpase (BE ENTC)

The student's performance during project completion found satisfactory and we wish them all the best for their future.

Thanking you.

Regards,

Mr. Nikesh M. Gajbhiye

Director



Sample 3 Project Completion Certificate from Industry

Core Tech Aurangabad Pvt. Ltd.

Gut No. 23, Plot No. 16
Kamlapur, Jogeshwari, Behind Cosmo Films
Tal. Gangapur, Dist. Aurangabad.
Email : coretechaurangabad@gmail.com

Date: 19.11.2018

The Principal,

SVERI's COE,

Pandharpur

Subject: Sponsored Project completion status

Respected Sir,

With reference industry visit of Mr. Kumbhar D A and team on 08.08.2018, three sponsored projects were offered under Students Innovation Projects by MSME and MASSIA. Out of 3 projects following two projects reviewed today i.e. 19.11.2018.

1. Universal test rig for multiple harness using Arduino
2. LDR based light ON/OFF with accuracy

Both the projects are found working satisfactorily as per our requirement. We request you to submit the codes and design of the project up to 15.12.2018.

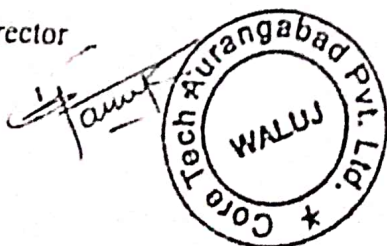
We extend a warm thank you towards your organization for quick response and completion of our requirements. I expect such endeavor in future from your end.

Thanking you.

Regards,

Mr. Manoj Shewale

Director



Core Tech Aurangabad Pvt. Ltd.

Gut No. 23, Plot No. 16
Kamlapur, Jogeshwari, Behind Cosmo Films
Tal. Gangapur, Dist. Aurangabad.
Email. : coretechaurangabad@gmail.com

Date: 19.11.2018

The Principal,
SVERI's COE,
Pandharpur

Subject: Sponsored Project completion Certificate

Respected Sir,

With reference industry visit of Mr. Kumbhar D A and team on 08.08.2018, a sponsored project "LDR based light ON/OFF with accuracy" was offered under Students Innovation Projects by MSME and MASSIA.

Following students have worked on the project and successfully completed the project as per our requirements.

1. Ms. Anjali Pandurang Katkar (TE ENTC)
2. Ms. Samita Balaji Myakal (TE ENTC)
3. Ms. Anjali Mahadeo Yelsange (TE ENTC)

The student's performance during project completion found satisfactory and we wish them all the best for their future.

Thanking you.

Regards,

Mr. Manoj Shewale

Director



Core Tech Aurangabad Pvt. Ltd.

Gut No. 23, Plot No. 16

Kamlapur, Jogeshwari, Behind Cosmo Films

Tal. Gangapur, Dist. Aurangabad.

Email. : coretechaurangabad@gmail.com

Date: 19.11.2018

The Principal,

SVERI's COE,

Pandharpur

Subject: Sponsored Project completion Certificate

Respected Sir,

With reference industry visit of Mr. Kumbhar D A and team on 08.08.2018, a sponsored project "Universal test rig for multiple harnesses using Arduino" was offered under Students Innovation Projects by MSME and MASSIA.

Following students have worked on the project and successfully completed the project as per our requirements.

1. Mr. Rohit Suhas Ranaware (TE ENTC)
2. Mr. Pandurang Dhondiram Misal (TE ENTC)
3. Mr. Krisha Rajendra Tate-Deshmukh (TE ENTC)

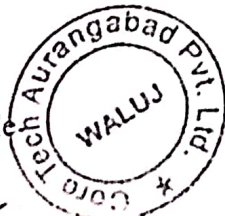
The student's performance during project completion found satisfactory and we wish them all the best for their future.

Thanking you.

Regards,

Mr. Manoj Shewale

Director



A handwritten signature in black ink, appearing to read 'Manoj Shewale'.

Amount Received by Student

| Sl. No. | Name | | Email-Id | Amount | Signature (I have received this amount for working on MSME Project) |
|---------|-------------------------|------------|-----------------------------------|--------|--|
| 1 | Mayureshwar Adhvalkar | 8208109248 | mayuradhvalkar@gmail.com | 5000 | |
| 2 | Jokare MayurManik | 8999846623 | Jokaremi@gmail.com | 5000 | |
| 3 | Ms. Shraddha P. Danave | 8485022994 | shraddhadanave3010@gmail.com | 5000 | |
| 4 | Tupe Shashikant Tanaji | 9156835247 | ShashikantHtupe@gmail.com | 5000 | |
| 5 | Pise Jagdish Milind | 9130379209 | jagdishmpise@coep.sveri.ac.in | 5000 | |
| 6 | Kadam Nitin Kisan | 7387419153 | nitinkradam@coepsveri.ac.in | 5000 | |
| 7 | Moholkar Kshitij | 8855080750 | Kshitijdmoholkar@coep.sveri.ac.in | 5000 | |
| 8 | Siddharth R. Upase | 9730974956 | SiddharthRUpase@coep.sveri.ac.in | 5000 | |
| 9 | Adhtrao Madhav P. | 9804788786 | madhavpachhtrao@coep.sveri.ac.in | 5000 | |
| 10 | Dubewar Ganesh Vinodrao | 8600372623 | ganeshvubewar@coep.sveri.ac.in | 5000 | |
| 11 | Akash Khadbade | 9698252922 | akashkhadbade@coep.sveri.ac.in | 5000 | |
| 12 | Krishna Tate-Deshmukh | 8308200832 | Krishnatate@coep.sveri.ac.in | 5000 | |
| 13 | Samita Myakal | 7020262761 | Samitammyakal@coep.sveri.ac.in | 5000 | |
| 14 | Bhosale Vishal Shahaji | 7057740477 | Vishalsbhosale@coep.sveri.ac.in | 5000 | |

Coordinator Sign



Principal (Director)
College of Engineering
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Invoice from Appraiser or Consultant and confirmation of furnishing of services by the officer responsible for the contract and cooperation

INVOICE (2 pages)
to GIZ Office, New Delhi
B 5/1 Safdarjung Enclave, New Delhi- 110029

25 OCT 2018

Invoice Date : 28/09/2018

Invoice No.006/2018/SME INNO

Appraiser/Consultant (name and full address)
Dr. B. P. Ronge, Principal, Shree Vithal
Education and Research Institute's, College of
Engineering, Pandharpur-413304

Email:bpronge@sveri.ac.in,
:jnmohite@coe.sveri.ac.in

Payment Mode

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☐ Cheque (Delhi only)
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Bank Details:

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IFSC:INDB0000892
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Period invoiced:.....to

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| | | |
|--------------|-----------|-----------------|
| Contract no. | Project : | Project Number: |
|--------------|-----------|-----------------|

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| Particulars | Amount (Rs.) | Reserved for GIZ |
|---|--------------|------------------|
| 1 Advance payment | | |
| 1.1 Fees | 87,500 | 70,000. |
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| 2 Lump sum according to contract | | |
| 3 Fees Dates: | | |
| Number of days:.....x daily fee-rate | | |
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*
 70,000 x
 10 %
 7,000 *
 63,000 --
 *

Problem Solving Methodologies through Interdisciplinary Project Activities

- **Solving Complex Engineering Problems**
- **Team Work**
- **Manage Project in Multidisciplinary
Environments**
- **Professional Ethics and Responsibilities**
- **Communication**

Experimental Estimation of Material Uncertainty of Composite Beam Using Hall Effect Sensor



Avinash K. Parkhe, Anil B. Shinde, Navnath S. Sawant, Prashant M. Pawar, and Pradip Haridas

Keywords Composite box beam · Deflection · Hall Effect Sensor · Arduino

1 Introduction

Composite material's use has increased in different industries like civil engineering, mechanical engineering and aerospace engineering due to their advantageous characteristics and properties. One of the most remarkable properties that structure of composites possesses is their very large stiffness to weight ratio. During the manufacturing of composite material or beams, the uncertainties have been formed due to some manufacturing defects, and it has been analyzed by the different parameters like deflection, stress, strain, natural frequency etc.

The experimental study has been carried on a composite box beam to measure its deflection at the free end to analyze the uncertainties present in the material. The composite box beam is like a cantilever beam, where one end is fixed, and the load is applied at the free end. Due to this load, deflection takes place at the free end of the beam. In a previous study, deflection has been calculated using Dial Gauge. The dial gauge is placed at the bottom side of the beam by making its stylus in point contact with beam and will show zero reading. If the load is applied at the free end of the beam will move in a downward direction. Due to point contact of the beam with a stylus, it also moves and shows some reading. But some contact between them will create instrumental errors during measurement.

To avoid this situation, the non-contact device is developed called as Hall Effect Sensor. The Hall Effect sensor is a device which works on the electromagnetic field. If the magnet comes in front of the Hall Effect sensor, it creates a magnetic field between them. If a magnet moves away from it, change in voltage will take place due to the change in distance between them. The change in voltage has been calibrated in

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https://doi.org/10.1007/978-3-030-16848-3_25

terms of deflection of the beam. The output of this sensor is another electronic device named as Arduino (Uno) which will give required output only.

The researches have been conducted on composite box beams. Sushanta Ghuku et al. [1] presented an experimental and theoretical study on large deflection behavior of initially curved cantilever beams subjected to various types of loadings. The physical system as a straight cantilever beam subjected to a concentrated tip load has been considered in this study. The proposed approach has been further extended to study large deflection behavior of an initially curved cantilever beam subjected to distributed and combined load. With successful validation of these results with existing results for straight beams, new results are furnished for initially curved cantilever beams. Mohammad Dado et al. [2] studied very large deflection behavior of prismatic and non-prismatic cantilever beams subjected to various types of loadings. The formulation is a function of the angle of rotation of the beam by a polynomial on the position variable along the deflected beam axis. The coefficients of the polynomial are estimated by minimizing the integral of the residual error of the governing differential equation and by applying the beams boundary conditions. Several numerical examples have been presented covering prismatic and non-prismatic cantilever beams subjected to a uniform, non-uniform distributed loads and tip concentrated loadings in vertical and horizontal directions. The loads considered in this study are restricted to the non-follower type loads. Beléndez, T. et al. [3–5] presented the classical problem of deflection of a cantilever beam of linear elastic material, under the action of a uniformly distributed load along its length due to its own weight and an external vertical concentrated load at the free end is experimentally and numerically analyzed. We have presented the differential equation governing the behavior of this system and shown that this equation, although simple, is in fact rather difficult to solve due to the presence of a nonlinear term [4]. The ANSYS program has been used to numerically evaluate the system and estimate Young's modulus of the beam material. Finally, he compares the numerical results with the experimental ones obtained in the laboratory.

In this paper, experimentation has been carried out on four composite box beams which have been manufactured by the same process to find the material uncertainties and this has been analyzed by considering the deflection parameter. After the experimentation on the four beams, the deflection results for different loads were compared with each other to analyze the uncertainties presents the material.

2 Introduction to Composite Box Beam

The composite beam of uniform cross-section has dimensions $800 \times 60 \times 22$ mm. Figure 1 is an eight-layer sandwich composite box beam. The beam used for experimentation with its material properties has been shown in Table 1.

- Material Properties:



Fig. 1 Cantilever composite box beam for experimental analysis

Table 1 Material properties of composite beam

| Young’s modulus | Poisson’s ratio | Mod. of rigidity | Density |
|-------------------|-----------------|------------------|------------------------|
| 135 Gpa (Ex Dir.) | 0.26 | 5 Gpa | 1600 kg/m ³ |
| 10 Gpa (Ey Dir.) | | | |
| 10 Gpa (Ez Dir.) | | | |

3 Theory of Hall Effect Sensor and Arduino (Uno)

3.1 Hall Effect Sensor

The Hall Effect, an ideal sensing technology, is constructed from a thin sheet of conducting material. With output connections and direction of current flow crosses mutually perpendicular, responds with an output voltage proportional to the magnetic field strength when subjected to a magnetic field, it. As the voltage output is very small (μV), it requires additional electronics to get useful voltage levels. Therefore when the Hall element is combined with the associated electronics, it forms a Hall Effect sensor. It consists of a current carrying metal strip which when placed inside any transverse magnetic field; EMF is developed across the edges of this current carrying metal strip. The magnitude of the developed EMF depends upon the density of the flux and mobility of electron. The Hall Effect element is typically used for sensing current and magnetic field measurements as shown in Fig. 2.

The attributes for using a particular technology or sensor varies according to the application, cost, performance, and availability.

3.2 Arduino (Uno)

Arduino is an open-source platform used to make electronic projects which consist of both software that runs on the computer, used to write, run and upload computer code to the physical board, and a physical programmable circuit board referred to a microcontroller. We use the Arduino Uno for our study which is one of the more popular boards in the Arduino family and the configuration of it is as shown in Fig. 3.

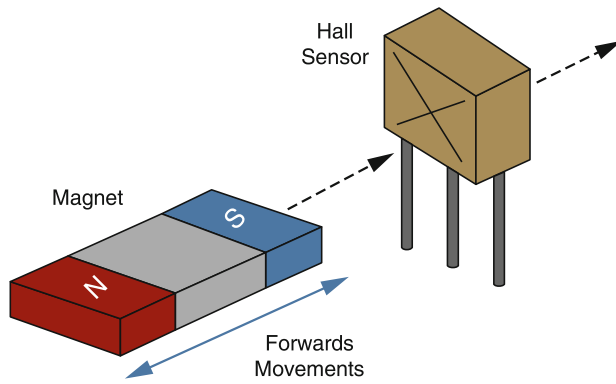


Fig. 2 Principle of Hall Effect Sensor

Fig. 3 Arduino Uno



4 Experimental Analysis of Composite Box Beam

The experimentation has been carried on composite beam by varying load at the free end to find the deflection using Hall Effect sensor. The designed Hall Effect sensor will generate maximum voltage up to 220 volts if the distance between the sensor and the magnet is up to 6 mm. Initially, we put 1–2 mm distance between sensor and magnet then it shows some voltage will be assumed as zero. When 10 N loads are applied at the free end of the beam, the voltage difference is generated between initial and final reading. The change in voltage difference is calibrated in terms of deflection of the beam. The same process is carried out for other loads (20–80 N), and its voltage differences have been calculated using graphical form which was generated during experimentation.



Fig. 4 Experimental setups for deflection of the beam using Hall Effect Sensor



Fig. 5 Composite box beam in unloading and loading condition

The experimental setup for the above-proposed work and beam in loading and unloading condition has been shown in Figs. 4 and 5.

During experimentation, it was analyzed that for 10 N loads 16 v voltages generated and by using this voltage we calculate the deflection of the beam for this particular load. The same process has been carried on four beams. The sample calculations of the first beam for 10 N and 20 N loads have been given below.

1. Sample Calculation for 10 N:

$$\frac{6 \text{ mm}}{220 \text{ V}} = \frac{\delta}{16 \text{ V}}$$

Therefore, $\delta = 0.43 \text{ mm}$

2. Sample Calculation for 20 N:

$$\frac{6 \text{ mm}}{220 \text{ V}} = \frac{\delta}{25 \text{ V}}$$

Therefore, $\delta = 0.68 \text{ mm}$

By the same process, deflection is found out for other loads and remaining three beams. The voltage difference in initial and final reading for different loads has been shown in the following graphs. The following graphs shown in Fig. 6 were generated during the experimentation of the first beam. The same voltage differences have been calculated for the remaining three beams by generating the same graphs to find its deflection for different loads.

Table 2 represents voltage difference of four composite beams along with its free end deflection for different loads.

The experimental results for deflection of four beams for different loads have also been shown in Fig. 7 as deflection gradually increased with increasing load.

5 Conclusion

During the manufacturing of composite material or beams the uncertainties have formed due to some defects or errors in manufacturing process, and it has been studied by the different parameters like deflection, stress, strain, natural frequency etc. The experimentation has been carried out on a composite beam for deflection measurement, and this is for all four beams by the same process, and it has been carried out to analyze the uncertainty present in material or beam.

From the above study on composite beam following conclusions have been drawn:

- The use of a dial gauge indicator for deflection measurement will create problems during measurement due to its contact with the composite beam.
- To avoid this situation, the non-contact device was designed and developed for deflection measurement named as Hall Effect Sensor.
- As deflection results of all four beams are compared with each other then there is no more difference between them. All the results are near to each other to their respective load has also been shown in graphical form.
- Finally, from the comparison of all results, it was observed that there is no any uncertainty present in the material or in composite beams.

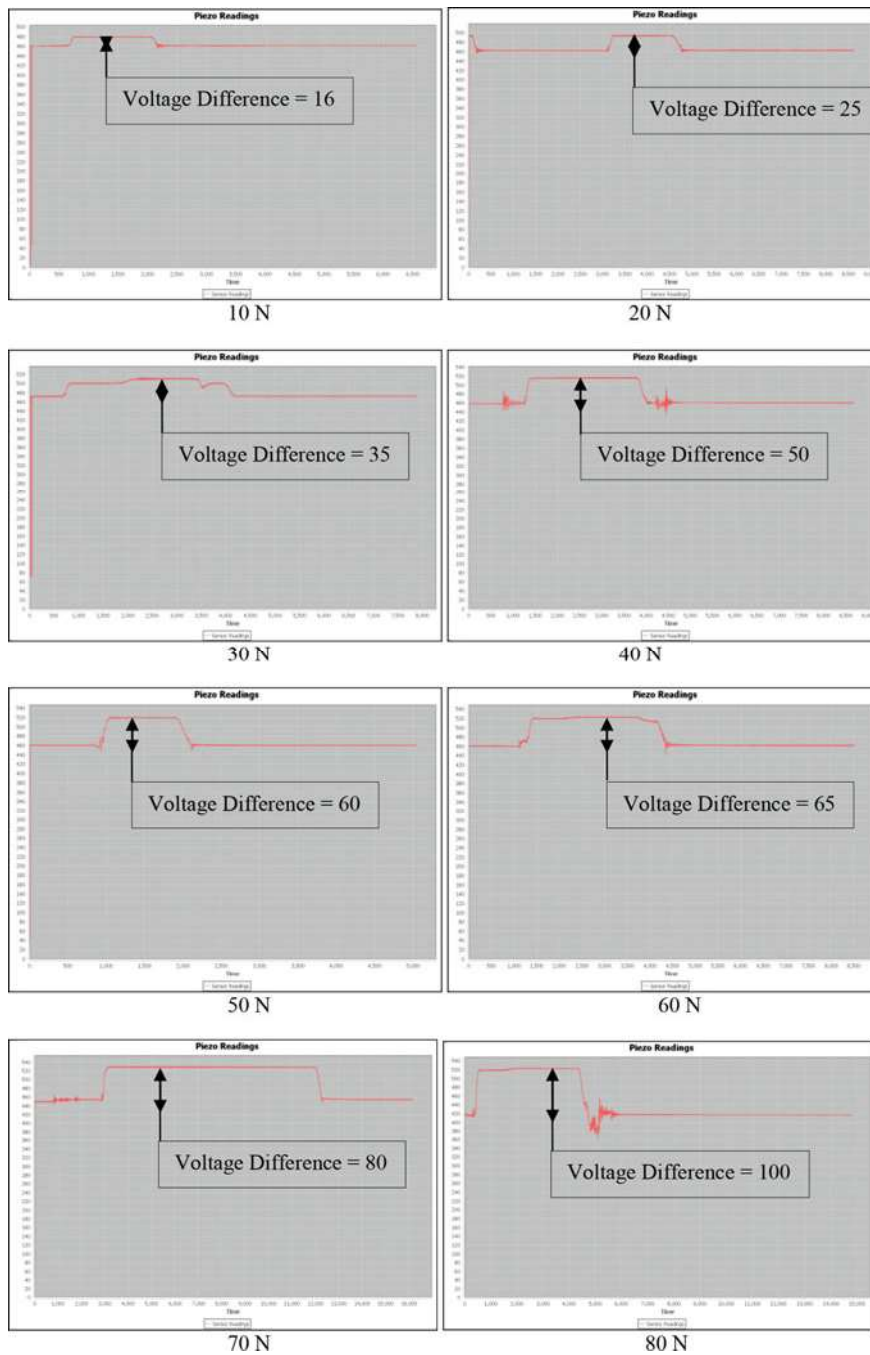
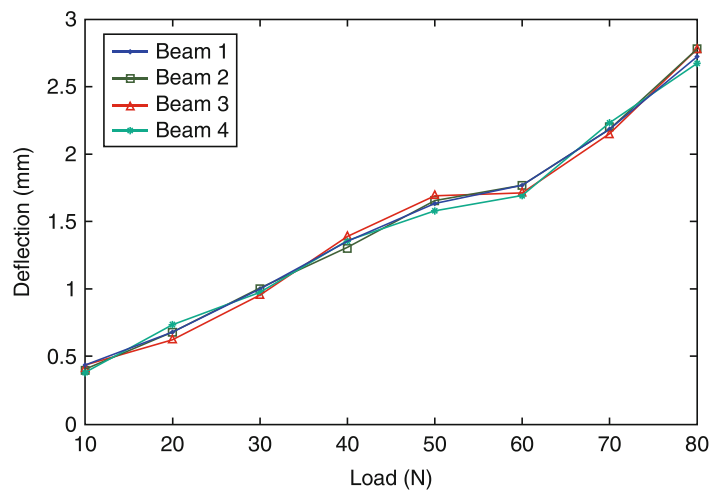


Fig. 6 Voltage difference in the initial and final reading of the first beam for different loads

Table 2 Deflection of composite beams

| Sr. no. | Load (N) | Voltage difference between initial and final reading | | | | Experimental deflection (mm) | | | |
|---------|----------|--|--------|--------|--------|------------------------------|--------|--------|--------|
| | | Beam 1 | Beam 2 | Beam 3 | Beam 4 | Beam 1 | Beam 2 | Beam 3 | Beam 4 |
| 1. | 10 | 16 | 15 | 16 | 14 | 0.43 | 0.40 | 0.43 | 0.38 |
| 2. | 20 | 25 | 25 | 23 | 27 | 0.68 | 0.68 | 0.62 | 0.73 |
| 3. | 30 | 35 | 37 | 35 | 36 | 0.95 | 1.00 | 0.95 | 0.98 |
| 4. | 40 | 50 | 48 | 51 | 50 | 1.36 | 1.30 | 1.39 | 1.36 |
| 5. | 50 | 60 | 61 | 62 | 58 | 1.63 | 1.66 | 1.69 | 1.58 |
| 6. | 60 | 65 | 65 | 63 | 62 | 1.77 | 1.77 | 1.71 | 1.69 |
| 7. | 70 | 80 | 81 | 79 | 82 | 2.18 | 2.20 | 2.15 | 2.23 |
| 8. | 80 | 100 | 102 | 102 | 98 | 2.72 | 2.78 | 2.78 | 2.67 |

**Fig. 7** Graph of load vs. deflection

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Attribute Inspection of Product Using Image Processing

Anup S. Vibhute, Reshma R. Deshmukh, P. S. Valte, B. D. Gaikwad,
and Shrikant Pawar

Abstract Automation is a crucial thing about an industry which manufactures product within the mass quantity. After manufacturing product; to form the decision of rejecting or accepting is taken by measuring quality parameters. To test quality parameters like dimensions and features of manufactured product inspection is mostly done manually in manufacturing industries. Manual assessment is time-consuming, costly, sometimes inaccurate and manual assessment for elegant shapes is incredibly difficult. To resolve these problems, control and quality management of the commercial product is feasible by the use of image processing techniques.

Keywords DIP • Feature extraction • Gray-scale • Image analysis • Image classification • Image quality • Image capture • Image denoising • Image enhancement • Image edge detection • Image filtering • Image processing • Image recognition • Image segmentation

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S. Pawar

Top Gear Transmission, Satara, (M.S.), India

1 Introduction

There are two forms of visual-based defect detection; the manual inspection and also the automated one [1]. In many industries, the quality of products is tested by manual review with the assistance of gauges, and if it doesn't fit on gauge properly, then the job is taken into account to be faulty. Also in some industries, the standard testing is completed by a human eye wherein human observes the form and size of the output products are starting of the product line. But in practice, just some pieces are taken and verified for dimension and orientation of the shapes. This manner of manual testing could be a tedious process and at risk of human errors which reduce the standard of the products.

This approach has been utilized in the industry before the existence of automated visual inspection. The activities during this manual inspection are to search the defect, recognize the fault and make the sole decision. Thus, the training for quality inspection is crucial to boost the skill of examination and to attenuate errors during the manufacturing process. They have to look out a way to identify the task with defects than to form clear decision either to accept or to reject or to remodel the defected part. Moreover, human inspectors are slow and have become ineffective after completing the task that required an extended time. They're either full of fatigue or sickness or human weaknesses. Hence, they have frequent rest to want care of a high-performance level. So we want to travel for an automatic visual inspection [2].

Today there is no field of technical endeavour neglected without the impact of Digital Image Processing. Digital Image Processing may well be a way for an automatic visual inspection [3]. We proposed here the attribute inspection technique that uses a camera which captures a digital image of every job. The captured image is preprocessed, filtered. Then the size or attributes are extracted, measured using edge detection [2, 4] and segmentation techniques [5, 6]. Finally, the output is compared with a reference or actual dimension in drawing using feature matching. The image processing task is to look out the faulty piece and to form a decision whether to accept or reject manufactured product using classification [7]. This increases the speed and accuracy and avoids human errors which are common in quality testing and also increases productivity. Quality testing using DIP performs acceptable range.

Some researchers illustrated previous research works which are studied to beat the restrictions of subjective Evaluation in the visual quality inspection by a human inspector. They developed an automatic procedure replacement by using computer vision and image processing technologies to automate the method. These attempts are to figure out the defects in manufacturing by using digital image processing [8].

Here, we proposed a system which helps to keep up the count of excellent products furthermore as faulty products produced within the entire day [9] because it identifies the defect and makes a choice to accept or reject the manufactured product on the premise of attribute inspection [10].

2 Methodology

See Fig. 1.

2.1 Image Acquisition

Images of the desired product are acquired through digital cameras. Photos are usually obtained by one or more cameras placed at the position under inspection. The functions of the cameras are typically fixed. In most cases, industrial automation systems are designed to inspect only known objects at fixed positions [3]. The picture needs to be adequately illuminated and arranged to facilitate good image acquisition. The data flow starts from the image acquisition module by connecting the digital camera with laptop pc (Fig. 2). The image acquisition module captures and transfers Image into the computer for processing [8], in our paper input image shown in Fig. 3.

2.2 Image Preprocessing

Once images are acquired, they're filtered to get rid of background or unwanted reflections from the illumination system. Image restoration can also be applied to boost image quality by correcting geometric distortions introduced by the acquisition system i.e. camera. The acquired input images are preprocessed by using multiple

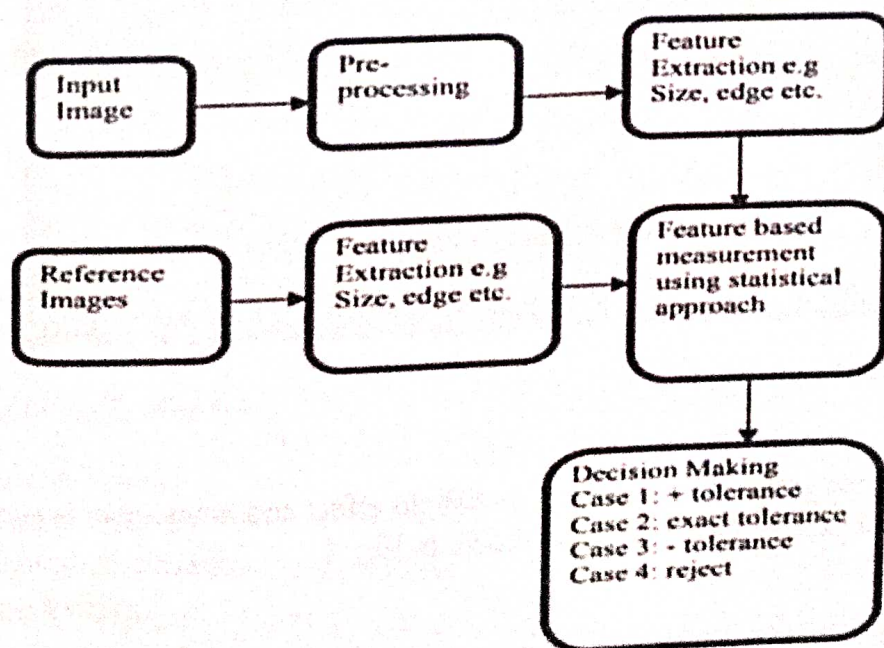


Fig. 1 Block diagram of attribute inspection using image processing

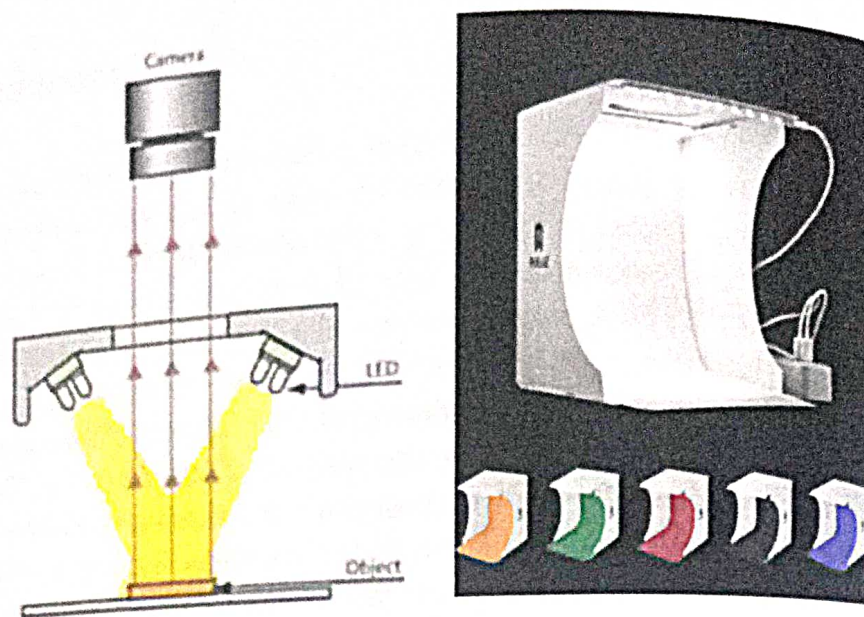


Fig. 2 Camera setup with an illumination source

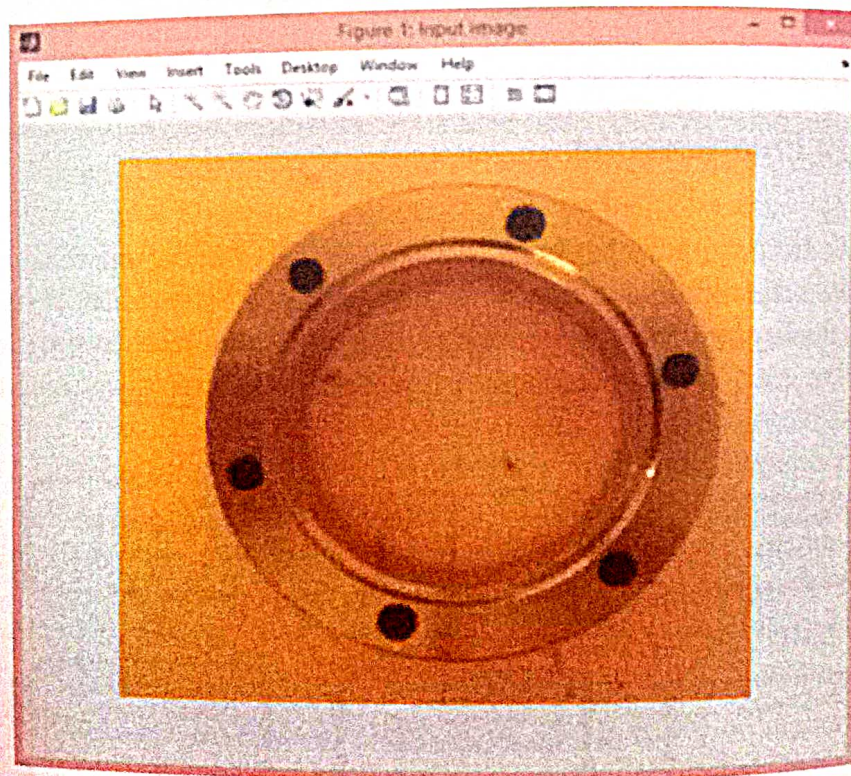


Fig. 3 Acquired input image

operations like grayscale conversion, threshold effect and noisy objects elimination which are present in the pictures, as shown in Fig. 4.

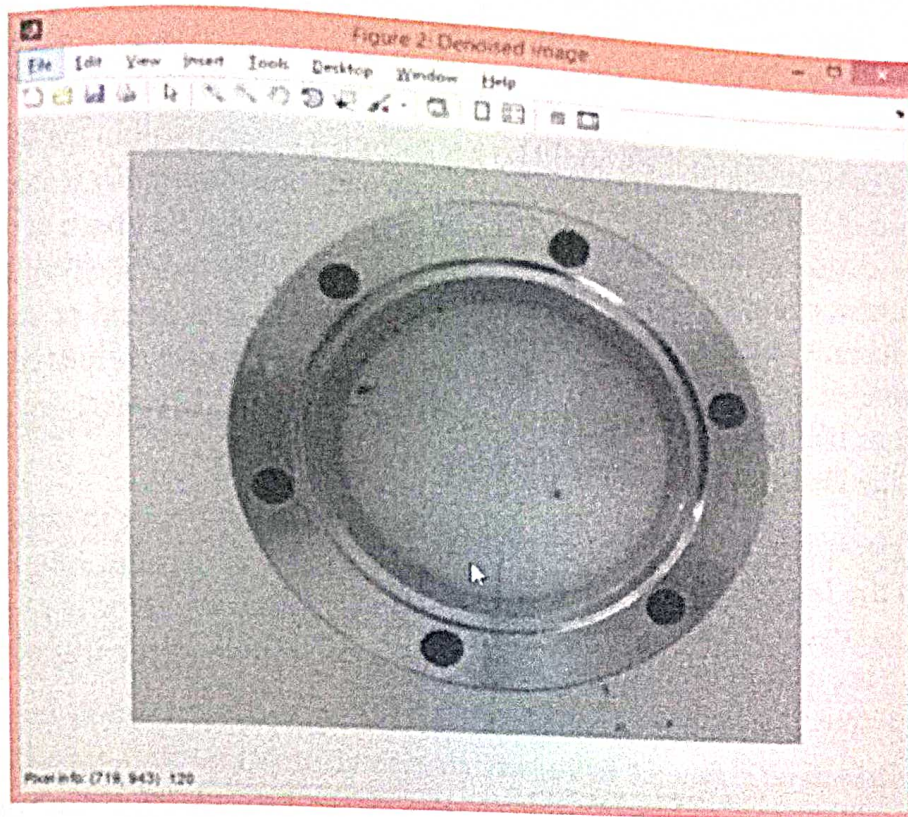


Fig. 4 Pre-processing output

2.2.1 Gray Scale Conversion

Sequence of input images is acquired from a digital camera, and then it is converted into a grayscale image.

2.2.2 Threshold Effect

After Grayscale conversion threshold effect is applied with the particular value. As a result, we get Binary Image from the Gray Scale Image as shown in figure.

2.2.3 Denoised Image Using Image Filtering

Image filtering is used to:

- Remove noise
- Sharpen contrast
- Highlight contours
- Detect edges.

The Median Filter could also be a non-linear digital filtering technique accustomed remove noise from an image which we are going to get Denoised Image which enhances the output of next step edge extraction [11].

2.3 Edge Detection

An Edge in an exceeding picture could be a significant change within the brightness, it's a discontinuity in image intensity. Edge detection is one reasonably feature extraction. Edge detection identifies the points in an exceedingly digital image at which the image brightness changes sharply, have discontinuities. The points at which image brightness changes smartly are organized into a gaggle—this group of curved line segments called as edges. Image segmentation is completed using various edge detection techniques like Sobel, Prewitt, Roberts, Canny, Log [6, 12]. Here we are using the Sobel Edge Detection technique for edge extraction [13].

Sobel Edge Detection: It works by calculating the gradient of image intensity at each pixel within the Image and then emphasizes regions of high spatial frequency that correspond to edges. The convolution masks [14] of Sobel operator is as shown in Fig. 3, which are accustomed, obtain the gradient magnitude of the Image from the initial. The output of a Sobel edge detector is shown in Fig. 7.

| | | |
|----|----|----|
| 1 | 2 | 1 |
| 0 | 0 | 0 |
| -1 | -2 | -1 |

(a)

| | | |
|----|---|---|
| -1 | 0 | 1 |
| -2 | 0 | 2 |
| -1 | 0 | 1 |

(b)

The gradient magnitude is given by $|G| = \sqrt{G_x^2 + G_y^2}$.

Typically, [15] an approximate magnitude is computed using:

$$|G| = |G_x| + |G_y|$$

2.4 Segmentation

Image segmentation may be a necessary technique used for image analysis. It's the tactic of partitioning a digital image into multiple segments (sets of pixels, also called image objects). This step tries to partition the image into regions of interest that correspond to part or whole objects inside the scene [12]. The varied segmentation techniques used are EM algorithm, OSTU algorithm and Genetic Algorithm [6]. Threshold selection is employed in OTSU algorithm. Compared with all other segmentation methods, the Otsu method is one of the only successful ways for image Thresholding because of its simple calculation. Thresholding creates binary images from grey-level ones by turning all pixels below some threshold to zero, and each one pixel this threshold to a minimum of one [16]. If $g(x, y)$ might be a threshold

version of $f(x, y)$ at some global threshold T , it's often defined as [17],

$$\begin{aligned} (x, y) &= 1; (x, y) \geq T \\ (x, y) &= 0; \text{otherwise} \end{aligned}$$

The segmentation output is shown in Fig. 7.

2.5 Feature Measurement

We have used Euclidean distance for feature measurement like inner diameter, outer diameter and have matched. The Euclidean distance gives straight line distance between two points. It's appropriate once we have continuous numerical variables and need to reflect absolute distances. This distance takes into consideration every variable and doesn't remove redundancies. Moreover, this distance doesn't scale-invariant, so generally must scale previously to use the gap. The Euclidean distance [10] between two weight vectors provides a measure of similarity between the corresponding images Imgref and Imgtest , as shown in Fig. 10. The measurement output is shown in Fig. 9. The formula for which is,

$$\text{Euclidean Distance}(\text{Imgref}, \text{Imgtest}) = \sqrt{(\text{Imgref}, \text{Imgtest})^2}$$

$$\text{Matching} = \left\{ \frac{(2|A \cap B|)}{|A| + |B|} \right\} \quad \text{Mismatching} = \left\{ 1 - \frac{(2|A \cap B|)}{|A| + |B|} \right\}$$

2.6 Decision Making

In case of visual inspection, the system has to decide if the result of manufacturing meets the quality standards, by matching [18] the computed features with a known model. If the product satisfies the matching criterion, it is considered to be accepted or else rejected.

2.7 Graphical User Interface

A graphical program (GUI) may be a visual interface to a plan. An honest GUI can make schedules more comfortable to use by providing them with a uniform appearance and with intuitive controls like push buttons, list boxes, sliders, menus, then forth. A graphical-based language allows the user to figure directly with graphics.

The developed GUI window gives a matching result for the acceptance and rejection process [19]. From the all MATLAB functions that are presented and implemented, all of them combine in the GUI screen to be the last final model for our proposed system [20] as shown in Fig. 11.

3 Results and Discussion

Initially, we have captured 100 images of the required job (Ring Gear). The photos are taken through all angles in such a way that all dimensions are covered. While acquiring images from different angles, care is being carried by maintaining the same distance from every angle (top view, side view and 45° angle). We formed three databases for three different perspectives. Then we have taken new input images one by one (around 100 test images) and compared with the reference database for getting a final result of acceptance or rejection of input test job image.

After preprocessing dataset with the help of image processing techniques such as Thresholding, denoising using the median filter, we need to do edge detection. Initially, used canny method and results are as shown in Fig. 5. So, to get the more precise output, we have gone for Sobel edge detection whose products are better as shown in Fig. 6, than the Canny edge detection.

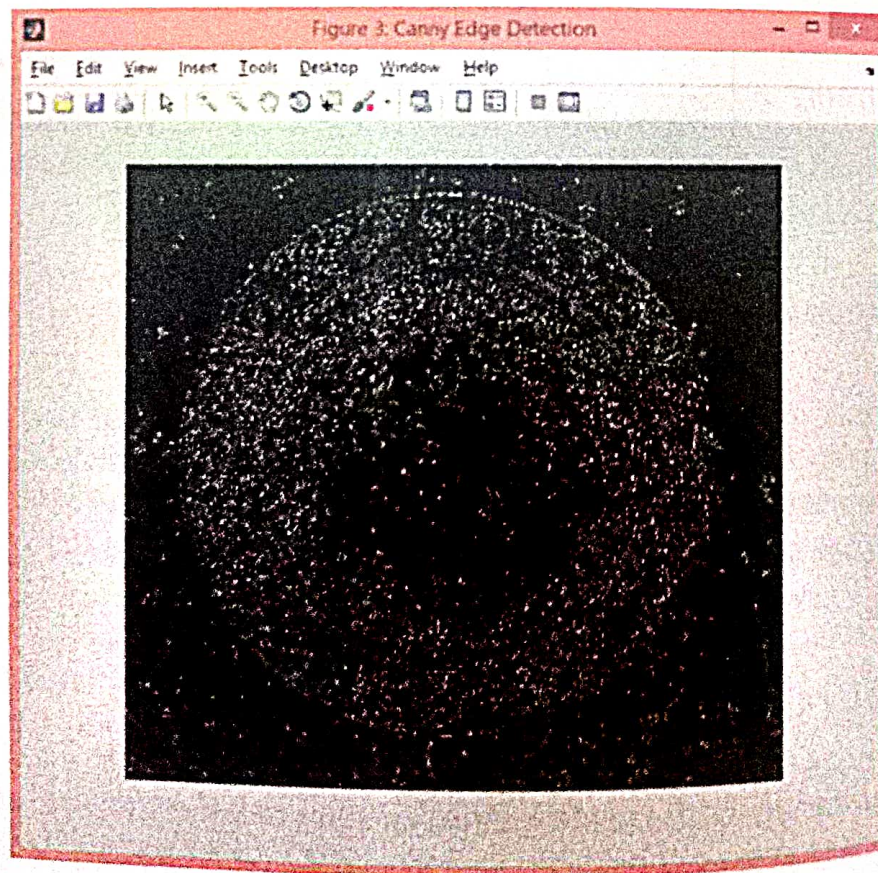


Fig. 5 Canny edge detection output

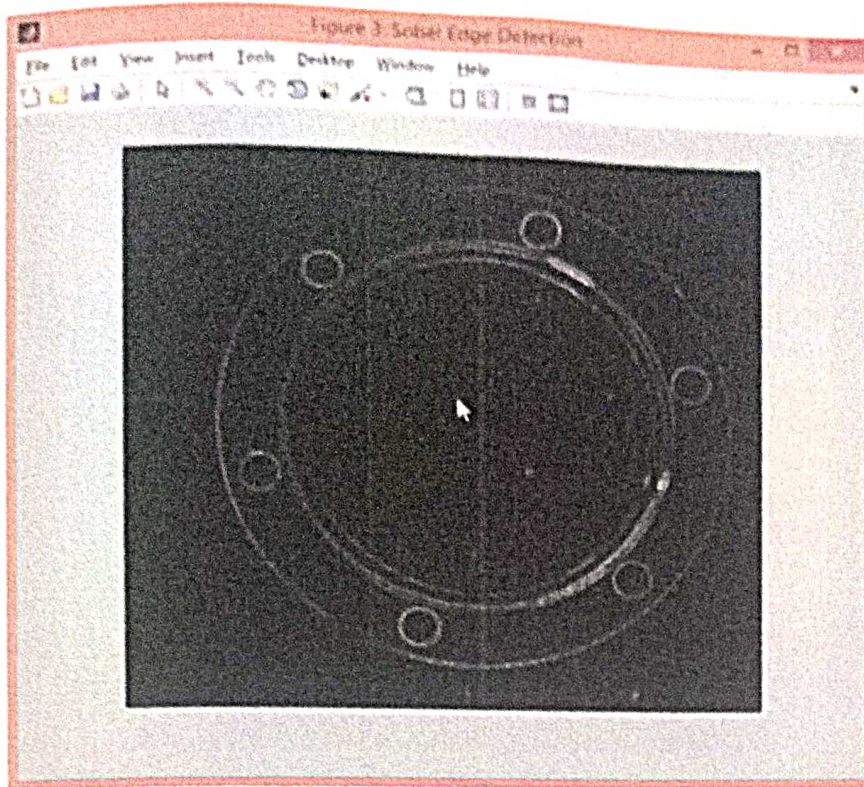


Fig. 6 Sobel edge detection output

Because of simplicity, we have used Otsu segmentation. The segmentation result of Otsu segmentation algorithm is stable or profitable as shown in Figs. 7, 8 and 9.

Figure 10 has shown either the test image matched with the reference database or not (Fig. 11).

GUI used to give a straightforward approach for checking image processing results. We have offered training database, an input image, preprocessing, edge detection, selecting parameter to be measured, segmentation and matching result buttons in GUI (Fig. 12).

Previous researchers have given defect detection only. But our proposed system adds to earlier research works, defect detection with decision making. The decision is taken in terms of acceptance or rejection of the product. Out of 100 test images of the product, almost 92 are accepted, and 8 are rejected due to excess positive tolerance. As our product is industrial Ring gear mostly circles, we found. So, if diameter exceeds than the considered positive tolerance, product becomes faulty. Thus, our proposed system gives 92% accurate results (Table 1).

4 Conclusion

In this study, the image processing technique is used for automatic inspection and internal quality control. Although lot of research carried by different researcher doing research in images processing, there's scope to use image processing techniques for internal control of commercial product. The image processing techniques

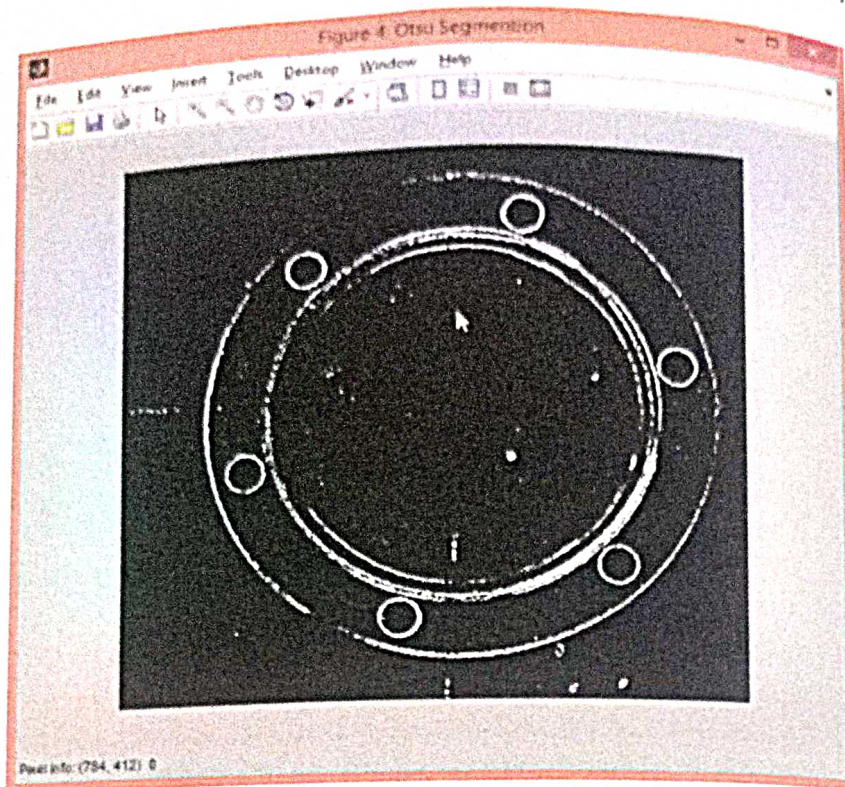


Fig. 7 Segmentation output

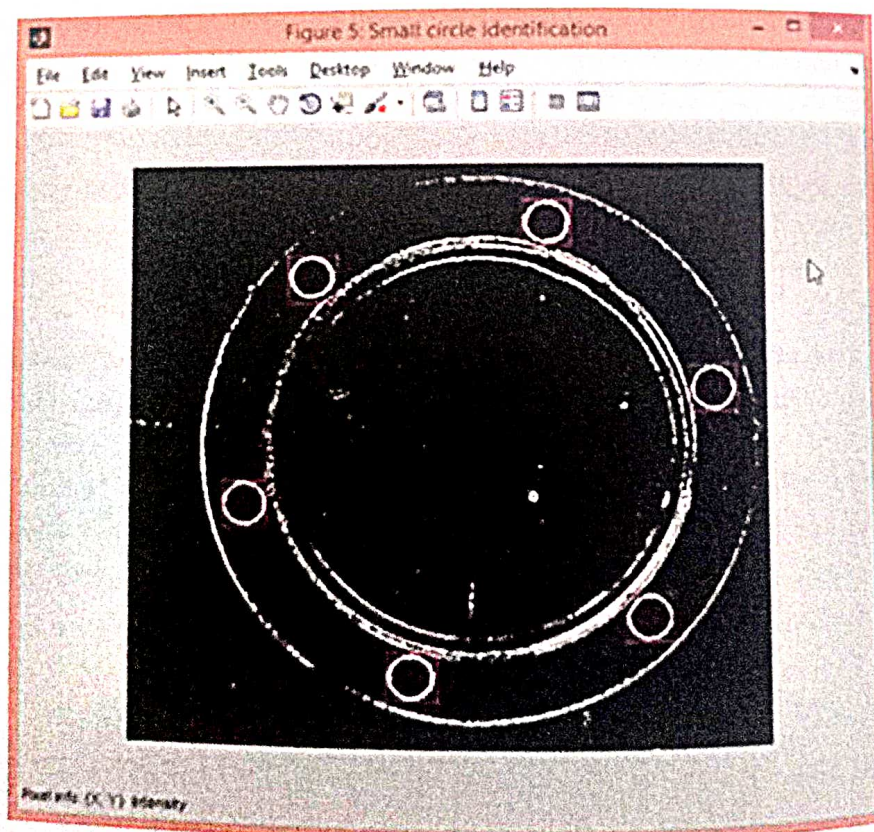
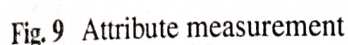


Fig. 8 Small circle detection



makes inspection automatic and fast. Also improves quality and production rate of an industry. Algorithm is proposed for real time quality monitoring of manufactured product. This proposed system can replace manual inspection of commercial product. Result will indicate product is appropriate or not. Using this automatic inspection system cost of inspection is reduced as we require only 1 time installation cost. Also accuracy of inspection will increase.

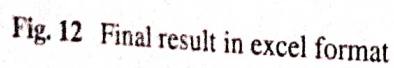
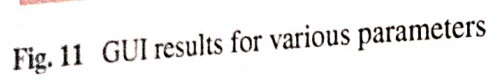


Table 1 Results of acceptance or rejection

| No. of test images taken | Accepted with (+3 pixel) positive tolerance | Accepted with (-3 pixel) negative tolerance | Exact images | Rejected products |
|--------------------------|---|---|--------------|-------------------|
| 100 | 45 | 42 | 5 | 8 |

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Problem Solving Methodologies through Model Development

- **Solving Complex Engineering Problems**
- **Team Work**
- **Use of Modern Tools**
- **Professional Ethics and Responsibilities**
- **Communication**

Product Development (A.Y. 2019-20)

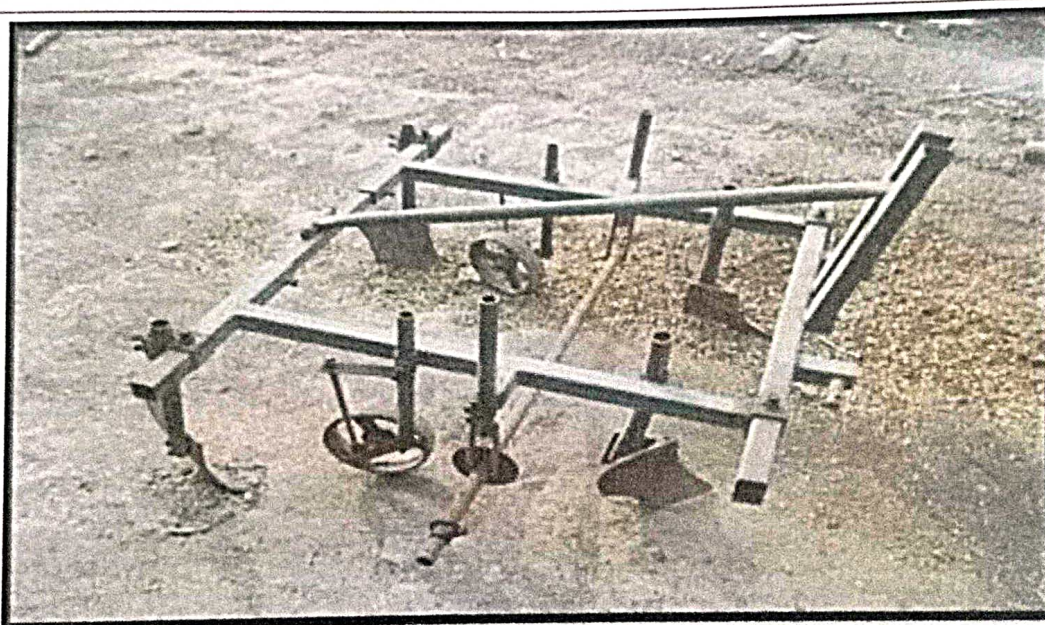
Name of Students: 1. Nikate Pornima 2. Pooja Kambale 3. Ashture Chandraprabha

Name of Guide: Dr. S. S. Wangikar

Product :- Mulching Machine

- Scope:**
- For laying plastic paper (mulch) in the farm and punch a hole on paper for plantation in one pass, mulching machine is required
 - As manual work becomes automated the working is easy and time efficient
 - Automatic covering of paper edges with the help clay carried out rapidly.

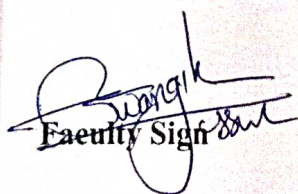
Fabricated Machine:

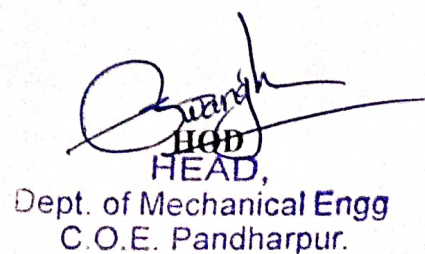


- Specification**
- Available from 2.5 feet to 4 feet
 - Capacity:- 1 Acres per 30 min.

- Application**
1. To lay plastic mulch and punch a hole on paper in one pass.
 2. To complete all above operations in minimum time.
 3. To reduce the cost of machine, this eventually reduces the investment of small farmers.

Benefits Available for any covering size, Increases in work efficiency.


Faculty Sign

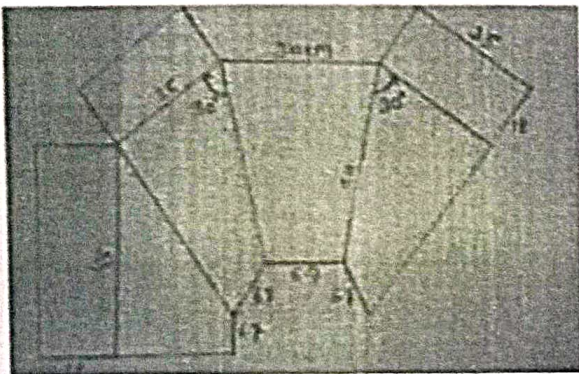

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Product

:- Eco Low Flushing Toilet

Objectives:

- To design the toilet with minimum flush of water



Following students from BE Class (2018-19) are involved in design of eco-low-flushing toilet system

- 1.Mr. Dinesh M Yedage
- 2.Mr. Dattatray M Gaikwad
- 3.Mr. Shubham B Choudhari
- 4.Mr. Vaibhav B Khune
- 5.Mr. Khela R Chaure
- 6.Mr. Vikas P Mulgir

Specification

- GI sheets are used to design slope of the toilet seat as GI sheets are proved to be equally competent as that of ceramic materials.

Benefits

These eco-low flushing toilets are more economical compared to traditional toilets because of their better flushing property and minimum cost of construction.


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Problem Solving Methodologies through Design Projects

- **Professional Engineering Solutions in Societal and Environmental Contexts**
- **Team Work**
- **Professional Ethics and Responsibilities**
- **Communication**

Detailed Project Report on SEWERAGE SYSTEM DESIGN FOR GOPALPUR VILLEG

Project Proposed by: Gopalpur Grampanchayat, Gopalpur
Tal. Pandharpur, Dist: Solapur-413304
Prepared by: SVERI's College of Engineering, Pandharpur


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1. ABOUT GOPALPUR VILLAGE

Gopalpur is a pilgrimage village according to Census 2011 information the location code or village code of Gopalpur village is 562367. Gopalpur village is located in Pandharpur Tehsil of Solapur district in Maharashtra, India. It is situated 2km away from sub-district headquarter Pandharpur and 78km away from district headquarter Solapur. As per 2009 stats, Gopalpur village is also a gram panchayat.

Population of Gopalpur

Total Population - 6,918

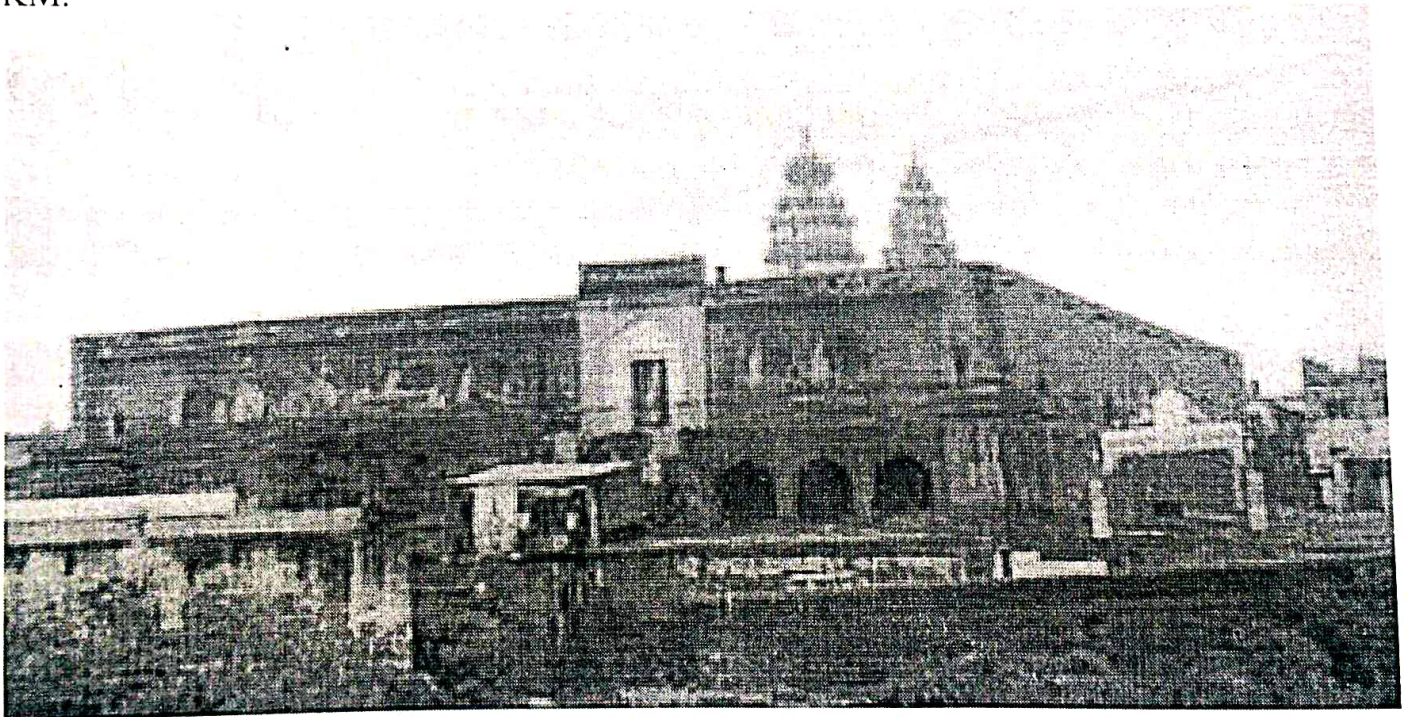
Male Population - 3,718


Female Population - 3,200

Geography:

The total geographical area of village is 1095 hectares. Gopalpur has a total population of 6,918 peoples. There are about 1,160 houses in Gopalpur village. Pandharpur is nearest town to Gopalpur which is approximately 2km away.

Gopalpur is a village panchayat located in the Solapur district of Maharashtra state, India. The latitude 17.6605502 and longitude 75.3485055 are the geocoordinate of the Gopalpur. Mumbai is the state capital for Gopalpur village. It is located around 303.5 kilometer away from Gopalpur.. The other nearest state capital from Gopalpur is Hyderabad and its distance is 274.4 KM. The other surrounding state capitals are Hyderabad 333.3 KM., Daman 405.2 KM., Bangalore 572.5 KM.




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Climatology:

Pandharpur lies in the area of comparatively dry regions in the state. In general rainfall in the region is scanty. The rainfall figures collected for last fifteen years & analyzed as below. The temperature ranges from 42°C to 8°C during summer & the winter months respectively.

Table No. 1: Rainfall Data

| Average and Actual Rainfall in Last Fifteen years | |
|--|---------------|
| Years | Rainfall (mm) |
| 2000 | 554.2 |
| 2001 | 545.8 |
| 2002 | 403.3 |
| 2003 | 254.6 |
| 2004 | 532.8 |
| 2005 | 519.7 |
| 2006 | 474.8 |
| 2007 | 605.3 |
| 2008 | 469.2 |
| 2009 | 730.8 |
| 2010 | 672.1 |
| 2011 | 395.8 |
| 2012 | 361.8 |
| 2013 | 566.2 |
| 2014 | 371.3 |
| Average | 497.18 |


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2. DESIGN CRITERIA

Most of the design philosophies and reference data for the design of Sewerage are considered from the "Manual on Sewerage and Sewage Treatment" document published by Central Public Health and Environmental Engineering Organization.

Design Flow

First of all, calculate the average sewage flow on the basis of water consumption and the population at the end of the design period. i.e at the full development of the area. Then the design flow for sanitary sewer and partially combined sewers can be calculated by using the following formulae.

- For Sanitary Sewer

$$Q_{\text{design}} = \text{Peak sewage flow} + \text{infiltration}$$

- For partially combined sewer

$$Q_{\text{design}} = 2 \times \text{Peak sewage flow} + \text{infiltration}$$

Design Equation

Manning's Equation is used for sewers flowing under gravity

$$V = \frac{1}{n} R^{2/3} S^{1/2}$$

Where

V = Velocity of flow in m/sec

R = Hydraulic mean depth (A/P) = D/4 when pipe is flowing full or half full

S = Slope of the sewer

n = Coefficient of roughness for pipes = 0.013 (For RCC Pipes)

Minimum (Self Cleansing) Velocity

Sewage should flow at all times with sufficient velocity to prevent the settlement of solid matter in the sewer. Self Cleansing Velocity is the minimum velocity that ensures non settlement of suspended matter in the sewer.

The following minimum velocities are generally employed

- Sanitary sewer = 0.6 m/sec
- Storm sewer = 1.0 m/sec
- Partially combined sewer = 0.7 m/sec

In this design partially combined sewer has been considered. Therefore, minimum velocities considered for the design are 0.7 m/sec.

Maximum velocity

The maximum velocities in the sewer pipes should not exceed more than 2.4 m/sec. This max velocity in the sewer should not exceed this limit of 2.4 m/sec. It is to avoid the excessive sewer abrasion and also to avoid steep slopes.

Minimum Sewer Size

250mm is taken as the minimum sewer size. The reason being that, the choking does not take place even with the bigger size particles, which are usually thrown into the sewer through manholes.

Minimum Cover of Sewer

1m is taken as the minimum cover over the sewers to avoid damage from live loads coming on the sewer.

SEWERAGE SYSTEM DESIGN REPORT OF GOPALPUR VILLAGE

Spacing of Manhole (WASA, Criteria)

| | |
|-------------------------------------|----------------------------|
| For (Sewer Size) 225mm to 380mm | spacing not more than 100m |
| For (Sewer Size) 460mm to 760mm | spacing not more than 120m |
| For (Sewer Size) greater than 760mm | spacing not more than 150m |

Direction of Sewer Line

Sewer should flow, as far as possible the Natural Slope.

Design of Sewer

• Size of Sewer

Use the following relation to find the diameter of sewer

$$Q_f = A \times V$$

• Slope of Sewer

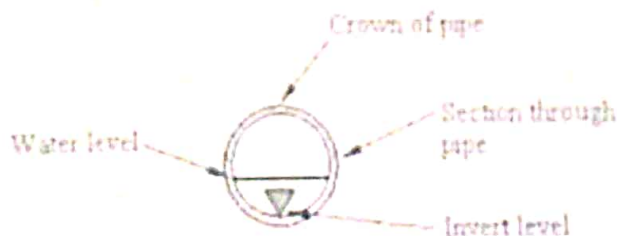
Select the minimum velocity value and use the Manning's formula

$$V = \frac{1}{n} R^{2/3} S^{1/2}$$


Invert Level

The lowest inside level at any cross-section of a sewer pipe is known as Invert Level at that Cross-section.

Invert Level = NGSL/Road Level – Depth of Sewer – Thickness of Sewer – Dia. of Sewer



INVERT LEVEL OF PIPE


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SEWERAGE SYSTEM DESIGN REPORT OF GOPALPUR VILLAGE

3. SEWERAGE DESIGN DATA

Population Forecasting

The existing population provided by Gopalpur Grampanchayat is 6918 as per recent census (2010). The design period is considered of 30 Years. The population growth per year is assumed to be 2 %. Total number of houses considered are about 1765 which are utilised for distribution of population over the pipe network.

Population forecast

$$P_d = P_p \times (1 + 2/100)^{38}$$

$$P_d = 6918 \times (1 + 2/100)^{38} = 14682$$

Sewerage Flow Estimation: For the towns provided with piped water supply but without sewerage system and tentative data provided by Gopalpur Grampanchayat the water consumption per capita is 135 liters per day. Sewage generated is assumed to 80 % of water consumption.

$$P_d = 14682 \text{ (From Table)}$$

Per capita water consumption 135 lpcd (liters per capita per day)

$$\text{Average Design flow} = P_d \times \text{water consumption} \times 0.8 / 1000$$

(80% goes to sewers as waste water)

$$= (135 \times 14682 \times 0.8) / 1000$$

$$Q_{avg} = 1585.65 \text{ m}^3/\text{day}$$

Infiltration assumed is 5 % of average flow

$$\text{Infiltration} = 0.05 \times 1585.65 = 79.28 \text{ m}^3/\text{day}$$


$$\text{Peak Flow} = 4 \times 1585.65 = 6342.62 \text{ m}^3/\text{day} \quad (\text{Peak factor} = 4)$$

Storm water contribution is assumed to be equal to Peak Flow amount

$$\text{Storm water} = 6342.62 \text{ m}^3/\text{day}$$

$$\text{Design Flow} = \text{Peak Flow} + \text{Storm water} + \text{Infiltration}$$


$$\text{Design Flow} = 6342.62 + 6342.62 + 79.28 = 12764.52 \text{ m}^3/\text{day}$$


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SEWERAGE SYSTEM DESIGN REPORT OF GOPALPUR VILLAGE

Table 2 shows the the flow estimation over the pipe network where as Table 3 shows the details of pipe and excavation required as per minimum slope requirements. From this table it has been observed that minimum flow of 0.7 m/s has been maintained in almost all pipes of the network. The minimum pipe size considered is of 250mm whereas maximum pipe size required is 400mm. Total length of pipe network is about 3746 m. The layout of the sewerage system is shown below.




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SEWERAGE SYSTEM DESIGN REPORT OF GOPALPUR VILLAGE

Table 2: Details of Sewerage Network Flow estimation

| SR. No. | Sewer No | From MH no. | To. MH no. | Length (m) | Plots served | | | Total population | Avg. Sewage flow m3/day | Infiltration (m3/day) | Peak flow (m3/day) | Storm Water (m3/day) | Design flow (m3/day) |
|---------|----------|-------------|------------|------------|--------------|----------|----------|------------------|-------------------------|-----------------------|--------------------|----------------------|----------------------|
| | | | | | local | Previous | previous | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 1 | 90-89 | 90 | 89 | 35.1 | 20 | 0 | 20 | 160 | 17.28 | 0.864 | 69.12 | 69.12 | 139.104 |
| 2 | 91-84 | 91 | 84 | 31.2 | 20 | 0 | 20 | 160 | 17.28 | 0.864 | 69.12 | 69.12 | 139.104 |
| 3 | 92-82 | 92 | 82 | 34.9 | 20 | 0 | 20 | 160 | 17.28 | 0.864 | 69.12 | 69.12 | 139.104 |
| 4 | 93-80 | 93 | 80 | 38.4 | 20 | 0 | 20 | 160 | 17.28 | 0.864 | 69.12 | 69.12 | 139.104 |
| 5 | 89-88 | 89 | 88 | 73.4 | 25 | 20 | 45 | 360 | 38.88 | 1.944 | 155.52 | 155.52 | 312.984 |
| 6 | 87-86 | 87 | 86 | 72.4 | 25 | 0 | 25 | 200 | 21.6 | 1.08 | 86.4 | 86.4 | 173.88 |
| 7 | 84-82 | 84 | 82 | 40.4 | 20 | 20 | 40 | 320 | 34.56 | 1.728 | 138.24 | 138.24 | 278.208 |
| 8 | 82-80 | 82 | 80 | 50 | 15 | 60 | 75 | 600 | 64.8 | 3.24 | 259.2 | 259.2 | 521.64 |
| 9 | 80-79 | 80 | 79 | 44.2 | 30 | 95 | 125 | 1000 | 108 | 5.4 | 432 | 432 | 869.4 |
| 10 | 14-79 | 14 | 79 | 42 | 30 | 0 | 30 | 240 | 25.92 | 1.296 | 103.68 | 103.68 | 208.656 |
| 11 | 79-78 | 79 | 78 | 35.1 | 20 | 155 | 175 | 1400 | 151.2 | 7.56 | 604.8 | 604.8 | 1217.16 |
| 12 | 88-86 | 88 | 86 | 32.5 | 20 | 45 | 65 | 520 | 56.16 | 2.808 | 224.64 | 224.64 | 452.038 |
| 13 | 86-78 | 86 | 78 | 80.5 | 30 | 90 | 120 | 960 | 103.68 | 5.184 | 414.72 | 414.72 | 834.624 |
| 14 | 13-78 | 13 | 78 | 86 | 40 | 0 | 40 | 320 | 34.56 | 1.728 | 138.24 | 138.24 | 278.208 |
| 15 | 78-77 | 78 | 77 | 35 | 20 | 335 | 355 | 2840 | 306.72 | 15.336 | 1226.88 | 1226.88 | 2469.096 |
| 16 | 12-77 | 12 | 77 | 94 | 40 | 0 | 40 | 320 | 34.56 | 1.728 | 138.24 | 138.24 | 278.208 |
| 17 | 77-75 | 76 | 75 | 20.2 | 20 | 395 | 415 | 3320 | 358.56 | 17.928 | 1434.24 | 1434.24 | 2886.408 |
| 18 | 10-75 | 10 | 75 | 110.5 | 40 | 0 | 40 | 320 | 34.56 | 1.728 | 138.24 | 138.24 | 278.208 |
| 19 | 75-70 | 75 | 70 | 27 | 15 | 455 | 470 | 3760 | 406.08 | 20.304 | 1624.32 | 1624.32 | 3268.944 |
| 20 | 9-70 | 9 | 70 | 106.5 | 60 | 0 | 60 | 480 | 51.84 | 2.592 | 207.36 | 207.36 | 417.312 |
| 21 | 7-67 | 7 | 67 | 108 | 50 | 0 | 50 | 400 | 43.2 | 2.16 | 172.8 | 172.8 | 347.76 |
| 22 | 70-67 | 70 | 67 | 29.4 | 20 | 530 | 550 | 4400 | 475.2 | 23.76 | 1900.8 | 1900.8 | 3825.36 |
| 23 | 67-54 | 67 | 54 | 102 | 50 | 550 | 600 | 4800 | 518.4 | 25.92 | 2073.6 | 2073.6 | 4173.12 |
| 24 | 71-56 | 71 | 56 | 87 | 70 | 0 | 70 | 560 | 60.48 | 3.024 | 241.92 | 241.92 | 486.864 |
| 25 | 53-52 | 53 | 52 | 28 | 20 | 0 | 20 | 160 | 17.28 | 0.864 | 69.12 | 69.12 | 139.104 |
| 26 | 52-51 | 52 | 51 | 16.5 | 20 | 20 | 40 | 320 | 34.56 | 1.728 | 138.24 | 138.24 | 278.208 |
| 27 | 2-49 | 2 | 49 | 72 | 20 | 0 | 20 | 160 | 17.28 | 0.864 | 69.12 | 69.12 | 139.104 |
| 28 | 49-51 | 49 | 51 | 30 | 20 | 20 | 40 | 320 | 34.56 | 1.728 | 138.24 | 138.24 | 278.208 |
| 29 | 51-54 | 51 | 54 | 24.5 | 20 | 80 | 100 | 800 | 86.4 | 4.32 | 345.6 | 345.6 | 695.52 |
| 30 | 54-56 | 54 | 56 | 53 | 40 | 700 | 740 | 5920 | 639.36 | 31.968 | 2557.44 | 2557.44 | 5146.848 |
| 31 | 56-58 | 56 | 58 | 29 | 20 | 810 | 830 | 6640 | 717.12 | 35.856 | 2868.48 | 2868.48 | 5772.816 |
| 32 | 58-59 | 58 | 59 | 21 | 30 | 830 | 860 | 6880 | 743.04 | 37.152 | 2972.16 | 2972.16 | 5981.472 |
| 33 | 59-47 | 59 | 47 | 41 | 30 | 860 | 890 | 7120 | 768.96 | 38.448 | 3075.84 | 3075.84 | 6190.128 |
| 34 | 47-47A95 | 47 | 47A95 | 127 | 30 | 890 | 920 | 7360 | 794.88 | 39.744 | 3179.52 | 3179.52 | 6398.784 |
| 35 | 47A95-95 | 47A95 | 95 | 38.3 | 30 | 920 | 950 | 7600 | 820.8 | 41.04 | 3283.2 | 3283.2 | 6607.44 |
| 36 | 30-36 | 30 | 36 | 107.5 | 60 | 0 | 60 | 480 | 51.84 | 2.592 | 207.36 | 207.36 | 417.312 |
| 37 | 36-46A | 36 | 46A | 33.8 | 30 | 60 | 90 | 720 | 77.76 | 3.888 | 311.04 | 311.04 | 625.968 |
| 38 | 46A-46 | 46A | 46 | 104 | 45 | 90 | 135 | 1080 | 116.64 | 5.832 | 466.56 | 466.56 | 938.952 |
| 39 | 46-45 | 46 | 45 | 28.5 | 15 | 135 | 150 | 1200 | 129.6 | 6.48 | 518.4 | 518.4 | 1043.28 |
| 40 | 29-45 | 29 | 45 | 97 | 60 | 0 | 60 | 480 | 51.84 | 2.592 | 207.36 | 207.36 | 417.312 |
| 41 | 28-25 | 28 | 25 | 81 | 30 | 0 | 30 | 240 | 25.92 | 1.296 | 103.68 | 103.68 | 208.656 |
| 42 | 27-23 | 27 | 23 | 71 | 30 | 0 | 30 | 240 | 25.92 | 1.296 | 103.68 | 103.68 | 208.656 |
| 43 | 42-41 | 42 | 41 | 76 | 35 | 0 | 35 | 280 | 30.24 | 1.512 | 120.96 | 120.96 | 243.432 |
| 44 | 45-40 | 45 | 40 | 97.4 | 40 | 210 | 250 | 2000 | 216 | 10.8 | 864 | 864 | 1738.8 |
| 45 | 26-25 | 26 | 25 | 24.5 | 30 | 0 | 30 | 240 | 25.92 | 1.296 | 103.68 | 103.68 | 208.656 |
| 46 | 25-23 | 25 | 23 | 34 | 20 | 60 | 80 | 640 | 69.12 | 3.456 | 276.48 | 276.48 | 556.416 |
| 47 | 23A-17 | 23A | 17 | 161.5 | 60 | 0 | 60 | 480 | 51.84 | 2.592 | 207.36 | 207.36 | 417.312 |
| 48 | 41A-39 | 41A | 39 | 165.5 | 60 | 0 | 60 | 480 | 51.84 | 2.592 | 207.36 | 207.36 | 417.312 |
| 49 | 23-41 | 23 | 41 | 34 | 20 | 110 | 130 | 1040 | 112.32 | 5.616 | 449.28 | 449.28 | 904.176 |
| 50 | 41-40 | 41 | 40 | 33 | 20 | 165 | 185 | 1480 | 159.84 | 7.992 | 639.36 | 639.36 | 1286.712 |
| 51 | 40-38 | 40 | 38 | 141 | 60 | 435 | 495 | 3960 | 427.68 | 21.384 | 1710.72 | 1710.72 | 3442.824 |
| 52 | 17-39 | 17 | 39 | 34 | 30 | 60 | 90 | 720 | 77.76 | 3.888 | 311.04 | 311.04 | 625.968 |
| 53 | 39-38 | 39 | 38 | 26.4 | 20 | 150 | 170 | 1360 | 146.88 | 7.344 | 587.52 | 587.52 | 1182.384 |
| 54 | 38-37 | 38 | 37 | 49.5 | 30 | 665 | 695 | 5560 | 600.48 | 30.024 | 2401.92 | 2401.92 | 4833.864 |
| 55 | 7A-1 | 7A | 1 | 154.7 | 100 | 0 | 100 | 800 | 86.4 | 4.32 | 345.6 | 345.6 | 695.52 |
| 56 | 1-37 | 1 | 37 | 90 | 40 | 100 | 140 | 1120 | 120.96 | 6.048 | 483.84 | 483.84 | 973.728 |
| 57 | 37-96 | 37 | 96 | 167 | 30 | 835 | 865 | 6920 | 747.36 | 37.368 | 2989.44 | 2989.44 | 6016.248 |
| 58 | 95-96 | 95 | 96 | 39 | 20 | 950 | 970 | 7760 | 838.08 | 41.904 | 3352.32 | 3352.32 | 6746.544 |

SEWERAGE SYSTEM DESIGN REPORT OF GOPALPUR VILLAGE

Table 3: Details of Pipe Selection and laying levels etc.

| SR. No. | Sewer No | From MH no. | To. MH no. | Length (m) | Design flow (m3/day) | Da (m) | Slope | Va (m/sec) | Ground Level | | Adjusted Invert level | | Excavation Depth | |
|---------|----------|-------------|------------|------------|----------------------|--------|------------|------------|--------------|---------|-----------------------|---------|------------------|-------|
| | | | | | | | Sa | | Upper | Lower | Upper | Lower | upper | lower |
| 1 | 90-89 | 90 | 89 | 35.1 | 139.104 | 0.25 | 0.00102029 | 0.56 | 103.785 | 103.085 | 102.535 | 101.835 | 1.25 | 1.25 |
| 2 | 91-84 | 91 | 84 | 31.2 | 139.104 | 0.25 | 0.00102029 | 0.56 | 103.4 | 102.81 | 102.650 | 102.060 | 0.75 | 0.75 |
| 3 | 92-82 | 92 | 82 | 34.9 | 139.104 | 0.25 | 0.00102029 | 0.56 | 103.46 | 100.885 | 102.210 | 100.135 | 1.25 | 0.75 |
| 4 | 93-80 | 93 | 80 | 38.4 | 139.104 | 0.25 | 0.00102029 | 0.56 | 102.22 | 101.74 | 100.970 | 100.490 | 1.25 | 1.25 |
| 5 | 89-88 | 89 | 88 | 73.4 | 312.984 | 0.25 | 0.00204059 | 0.64 | 103.085 | 100.69 | 101.835 | 99.440 | 1.25 | 1.25 |
| 6 | 87-86 | 87 | 86 | 72.4 | 173.88 | 0.25 | 0.00136039 | 0.60 | 102.69 | 100.33 | 101.440 | 99.080 | 1.25 | 1.25 |
| 7 | 84-82 | 84 | 82 | 40.4 | 278.208 | 0.25 | 0.00170049 | 0.63 | 102.81 | 100.885 | 102.060 | 100.135 | 0.75 | 0.75 |
| 8 | 82-80 | 82 | 80 | 50 | 521.64 | 0.25 | 0.00302687 | 0.67 | 100.885 | 101.74 | 100.135 | 99.984 | 0.75 | 1.76 |
| 9 | 80-79 | 80 | 79 | 44.2 | 869.4 | 0.25 | 0.00476137 | 0.68 | 101.74 | 101.025 | 99.984 | 99.773 | 1.76 | 1.25 |
| 10 | 14-79 | 14 | 79 | 42 | 208.656 | 0.25 | 0.00163247 | 0.62 | 103.275 | 101.025 | 102.025 | 99.775 | 1.25 | 1.25 |
| 11 | 79-78 | 79 | 78 | 35.1 | 1217.16 | 0.25 | 0.00714205 | 0.69 | 101.025 | 100.695 | 99.773 | 99.523 | 1.25 | 1.17 |
| 12 | 88-86 | 88 | 86 | 32.5 | 452.088 | 0.25 | 0.00289083 | 0.67 | 100.69 | 100.33 | 99.440 | 99.080 | 1.25 | 1.25 |
| 13 | 86-78 | 86 | 78 | 80.5 | 834.624 | 0.25 | 0.00442127 | 0.68 | 100.33 | 100.695 | 99.080 | 98.724 | 1.25 | 1.97 |
| 14 | 13-78 | 13 | 78 | 86 | 278.208 | 0.25 | 0.00170049 | 0.63 | 103.365 | 100.695 | 102.115 | 99.445 | 1.25 | 1.25 |
| 15 | 78-77 | 78 | 77 | 35 | 2469.096 | 0.25 | 0.0146242 | 0.74 | 100.695 | 100.3 | 98.724 | 98.212 | 1.97 | 2.09 |
| 16 | 12-77 | 12 | 77 | 94 | 278.208 | 0.25 | 0.00170049 | 0.63 | 103.39 | 100.3 | 102.140 | 99.050 | 1.25 | 1.25 |
| 17 | 77-75 | 76 | 75 | 20.2 | 2886.408 | 0.3 | 0.0090569 | 0.72 | 100.3 | 100.335 | 98.212 | 97.994 | 2.09 | 2.34 |
| 18 | 10-75 | 10 | 75 | 110.5 | 278.208 | 0.25 | 0.00170049 | 0.63 | 103.955 | 100.335 | 102.705 | 99.085 | 1.25 | 1.25 |
| 19 | 75-70 | 75 | 70 | 27 | 3268.944 | 0.3 | 0.0103888 | 0.74 | 100.335 | 100.18 | 97.994 | 97.714 | 2.34 | 2.47 |
| 20 | 9-70 | 9 | 70 | 106.5 | 417.312 | 0.25 | 0.00272078 | 0.66 | 104.05 | 100.18 | 102.800 | 98.930 | 1.25 | 1.25 |
| 21 | 7-67 | 7 | 67 | 108 | 347.76 | 0.25 | 0.00238068 | 0.64 | 104.475 | 100.225 | 103.225 | 98.975 | 1.25 | 1.25 |
| 22 | 70-67 | 70 | 67 | 29.4 | 3825.36 | 0.3 | 0.01198707 | 0.74 | 100.18 | 100.225 | 97.714 | 97.361 | 2.47 | 2.86 |
| 23 | 67-54 | 67 | 54 | 102 | 4173.12 | 0.35 | 0.0078 | 0.73 | 100.225 | 100.115 | 97.361 | 96.566 | 2.86 | 3.55 |
| 24 | 71-56 | 71 | 56 | 87 | 486.864 | 0.25 | 0.00295885 | 0.67 | 99.375 | 99.175 | 98.125 | 97.868 | 1.25 | 1.31 |
| 25 | 53-52 | 53 | 52 | 28 | 139.104 | 0.25 | 0.00102029 | 0.56 | 101.835 | 100.54 | 100.585 | 99.290 | 1.25 | 1.25 |
| 26 | 52-51 | 52 | 51 | 16.5 | 278.208 | 0.25 | 0.00170049 | 0.63 | 100.54 | 100.275 | 99.290 | 99.025 | 1.25 | 1.25 |
| 27 | 2-49 | 2 | 49 | 72 | 139.104 | 0.25 | 0.00102029 | 0.56 | 101.46 | 99.745 | 100.210 | 98.495 | 1.25 | 1.25 |
| 28 | 49-51 | 49 | 51 | 30 | 278.208 | 0.25 | 0.00170049 | 0.63 | 99.745 | 100.275 | 98.495 | 98.444 | 1.25 | 1.83 |
| 29 | 51-54 | 51 | 54 | 24.5 | 695.52 | 0.25 | 0.00442127 | 0.68 | 100.275 | 100.115 | 98.444 | 98.336 | 1.83 | 1.78 |
| 30 | 54-56 | 54 | 56 | 53 | 5146.848 | 0.35 | 0.00964166 | 0.74 | 100.115 | 99.175 | 96.566 | 96.055 | 3.55 | 3.12 |
| 31 | 56-58 | 56 | 58 | 29 | 5772.816 | 0.4 | 0.0068844 | 0.74 | 99.175 | 97.925 | 96.055 | 95.855 | 3.12 | 2.07 |
| 32 | 58-59 | 58 | 59 | 21 | 5981.472 | 0.4 | 0.00722862 | 0.75 | 97.925 | 96.77 | 95.855 | 95.703 | 2.07 | 1.07 |
| 33 | 59-47 | 59 | 47 | 41 | 6190.128 | 0.4 | 0.00742791 | 0.75 | 96.77 | 94.76 | 95.370 | 93.360 | 1.40 | 1.40 |
| 34 | 47-47A95 | 47 | 47A95 | 127 | 6398.784 | 0.4 | 0.00779025 | 0.74 | 94.76 | 92.225 | 93.360 | 90.825 | 1.40 | 1.40 |
| 35 | 47A95-95 | 47A95 | 95 | 38.3 | 6607.44 | 0.4 | 0.00797142 | 0.74 | 92.225 | 91.185 | 90.825 | 89.785 | 1.40 | 1.40 |
| 36 | 30-36 | 30 | 36 | 107.5 | 417.312 | 0.25 | 0.00272078 | 0.66 | 103.965 | 102.555 | 102.715 | 101.305 | 1.25 | 1.25 |
| 37 | 36-46A | 36 | 46A | 33.8 | 625.968 | 0.25 | 0.00408117 | 0.68 | 102.555 | 103.045 | 101.305 | 101.167 | 1.25 | 1.88 |
| 38 | 46A-46 | 46A | 46 | 104 | 938.952 | 0.25 | 0.00544156 | 0.68 | 103.045 | 103.085 | 101.167 | 100.601 | 1.88 | 2.48 |
| 39 | 46-45 | 46 | 45 | 28.5 | 1043.28 | 0.25 | 0.00612176 | 0.69 | 103.85 | 103.98 | 100.601 | 100.427 | 3.25 | 3.55 |
| 40 | 29-45 | 29 | 45 | 97 | 417.312 | 0.25 | 0.00272078 | 0.66 | 104.795 | 103.98 | 103.545 | 102.730 | 1.25 | 1.25 |
| 41 | 28-25 | 28 | 25 | 81 | 208.656 | 0.25 | 0.00163247 | 0.62 | 104.42 | 104.525 | 103.170 | 103.038 | 1.25 | 1.49 |
| 42 | 27-23 | 27 | 23 | 71 | 208.656 | 0.25 | 0.00163247 | 0.62 | 104.63 | 104.36 | 103.380 | 103.110 | 1.25 | 1.25 |
| 43 | 42-41 | 42 | 41 | 76 | 243.432 | 0.25 | 0.00166648 | 0.62 | 104.495 | 103.745 | 103.245 | 102.495 | 1.25 | 1.25 |
| 44 | 45-40 | 45 | 40 | 97.4 | 1738.8 | 0.25 | 0.00952273 | 0.71 | 103.98 | 102.56 | 100.427 | 99.499 | 3.55 | 3.06 |
| 45 | 26-25 | 26 | 25 | 24.5 | 208.656 | 0.25 | 0.00163247 | 0.62 | 104.375 | 104.525 | 103.125 | 103.085 | 1.25 | 1.44 |
| 46 | 25-23 | 25 | 23 | 34 | 556.416 | 0.25 | 0.00306088 | 0.67 | 104.525 | 104.36 | 103.085 | 102.981 | 1.44 | 1.38 |
| 47 | 23A-17 | 23A | 17 | 161.5 | 417.312 | 0.25 | 0.00272078 | 0.66 | 104.36 | 102.745 | 103.110 | 101.495 | 1.25 | 1.25 |
| 48 | 41A-39 | 41A | 39 | 165.5 | 417.312 | 0.25 | 0.00272078 | 0.66 | 103.745 | 101.535 | 102.495 | 100.285 | 1.25 | 1.25 |
| 49 | 23-41 | 23 | 41 | 34 | 904.176 | 0.25 | 0.00510146 | 0.68 | 104.36 | 103.745 | 102.981 | 102.807 | 1.38 | 0.94 |
| 50 | 41-40 | 41 | 40 | 33 | 1286.712 | 0.25 | 0.00816234 | 0.69 | 103.745 | 102.56 | 102.495 | 101.310 | 1.25 | 1.25 |
| 51 | 40-38 | 40 | 38 | 141 | 3442.824 | 0.3 | 0.01092156 | 0.75 | 102.56 | 100.29 | 99.499 | 97.959 | 3.06 | 2.33 |
| 52 | 17-39 | 17 | 39 | 34 | 625.968 | 0.25 | 0.00408117 | 0.68 | 102.745 | 101.535 | 101.495 | 100.285 | 1.25 | 1.25 |
| 53 | 39-38 | 39 | 38 | 26.4 | 1182.384 | 0.25 | 0.00680195 | 0.69 | 101.535 | 100.29 | 100.285 | 99.040 | 1.25 | 1.25 |
| 54 | 38-37 | 38 | 37 | 49.5 | 4833.864 | 0.35 | 0.00931666 | 0.74 | 100.29 | 96.765 | 98.940 | 95.415 | 1.35 | 1.35 |
| 55 | 7A-1 | 7A | 1 | 154.7 | 695.52 | 0.25 | 0.00442127 | 0.68 | 104.475 | 100.61 | 103.225 | 99.360 | 1.25 | 1.25 |
| 56 | 1-37 | 1 | 37 | 90 | 973.728 | 0.25 | 0.00578166 | 0.69 | 100.61 | 96.765 | 99.360 | 95.515 | 1.25 | 1.25 |
| 57 | 37-96 | 37 | 96 | 167 | 6016.248 | 0.4 | 0.00722862 | 0.75 | 96.765 | 90.525 | 95.365 | 89.125 | 1.40 | 1.40 |
| 58 | 95-96 | 95 | 96 | 39 | 6746.544 | 0.4 | 0.0068844 | 0.74 | 91.185 | 90.525 | 89.785 | 89.125 | 1.40 | 1.40 |

SEWERAGE SYSTEM DESIGN REPORT OF GOPALPUR VILLAGE


4. PROJECT COST ESTIMATION

For estimation of project cost, detailed site survey was carried out. During this survey the existing internal road setup, ground level by surveying method and population distribution was studied. Further, based on the details given in previous sections, detailed sewerage network was design with optimisation minimizing the cost of excavation and reducing the lengths and diameters of pipes. Further, it was ensured to included connectivity to almost every population in the considered village of Gopalpur.

The summary various expenditure heads for the project cost is given in the Table 4. The justification of cost estimation of each of the components in the project are given in the Table 2-5. From the table it can be noted that there are four main components of the project viz. 1) Main Sewerage System costing about Rs. 57.03 Lakh 2) Turnkey cost for connecting the pipes from House to main line is about Rs. 44.12 Lakh 3) Sewage Treatment Plant Cost of Rs. 160.00 Lakh 4) Reconstruction of Cement Loads Rs. 67.76 Lakh. Total Cost of project is Rs. 328.92 Lakh.

Table 4: Summary of Expenditure of Project

| Sr. No. | Expenditure Head | Cost | Justification |
|---------|---|--------------------|---|
| 1. | Excavation Cost for Main Pipes | 18,06,343 | Details are given Table 5 |
| 2. | Manhole Cost | 4,52,073 | |
| 3. | Main Pipe Cost | 18,39,756 | |
| 4. | Main Pipe Laying cost | 5,70,779 | |
| 5. | PCC Cost | 10,34,341 | |
| 6. | Trunkey Cost for connecting pipes from House to main line | 44,12,500 | Details are given in following sections |
| 7. | Sewage Treatment Plant | 160,00,000 | Details are given in following sections |
| 8. | Reconstruction of Cement Roads | 67,76,514 | Details are given in following sections |
| | Total | 3,28,92,304 | |


HEAD,
Dept. of Civil. Engg.
C.O.E. Pandharpur

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Main Sewerage System Cost

Based on the design calculation, quantities of excavation, Main Pipes, Manhole, main pipe laying cost and PCC cost are estimated as shown in Table 4. Based on these estimated quantities and rates of materials and services given in the DSR of Maharashtra Jeevan Pradhikaran the project costs are estimated.

Trunkey Cost for connecting pipes from House to main line

For the 1765 houses considered during design, 5 m length was considered for connecting the sewer line to the individual houses. For the 150 mm diameters pipes, the cost of excavation was considered was about Rs. 120 per meter, pipe laying cost of Rs. 80 per meter and the cost of pipe Rs. 300 per meter.

$$\text{Total Cost} = 1765 \times 5\text{m} \times (120+80+300) = \text{Rs. } 4412500.00$$

Sewage Treatment Plant

Sewage treatment plant are considered to be designed for the average sewage flow. Average sewage flow is about 1600 m³/day. It was proposed to design Four plants of 400 m³/day capacity. Each plant costs around Rs. 40,00,000/- which includes Electromechanical work, interconnecting piping, erecting and commissioning, Civil Work and Training.

Reconstruction of Cement Roads

During installation of sewerage system, it is observed that about 60 % existing roads will get damaged. Therefore, it was decided to include the reconstruction of cement cost. Total Length of the sewerage line is 3746m. This road is assumed to be constructed using 15 mm of WBM and 15mm of PCC with width of 9m. The PCC cost is about Rs. 5000/ per meter whereas WBM cost is about Rs. 1600/ meter. The testing cost will be about Rs. 100/meter.

$$\begin{aligned} \text{Total cost} &= 0.6 \times 3746 \times 0.15 \times 3 \times (\text{Rs. } 5000 + \text{Rs. } 1600 + \text{Rs. } 100) \\ &= \text{Rs. } 67,76,514/- \end{aligned}$$


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Table 5: Manhole to Manhole Cost Analysis

| SR. No. | Sewer No | From MH no. | To MH no. | Length (m) | Quantity of Excavation | Excavation Cost | Manhole Cost | Pipe Dia (mm) | Pipe Prize | Pipe Cost | Laying prize per pipe | Pipe laying up cost | PCC Quantity | PCC Cost |
|---------|----------|-------------|-----------|------------|------------------------|------------------------|--------------|---------------|---------------|-----------|-----------------------|---------------------|--------------|--------------|
| | | | | | | Rs. 454 per hard murum | | | Class PI | | | | 10cm thick | PCC-M15 |
| 1 | 2 | 3 | 4 | 5 | | | | | collar joints | | | | | Rs. 4079/cum |
| | | | | | | | | | pp157 | | | | | |
| 1 | 90-89 | 90 | 89 | 35.1 | 28.52 | 12,947.51 | 6558 | 250 | 435 | 15268.5 | 139 | 4878.9 | 2.28 | 9,306.24 |
| 2 | 91-84 | 91 | 84 | 31.2 | 15.21 | 6,905.34 | 5302 | 250 | 435 | 13572 | 139 | 4336.8 | 2.03 | 8,272.21 |
| 3 | 92-82 | 92 | 82 | 34.9 | 22.69 | 10,298.99 | 6558 | 250 | 435 | 15181.5 | 139 | 4851.1 | 2.27 | 9,253.21 |
| 4 | 93-80 | 93 | 80 | 38.4 | 31.20 | 14,164.80 | 6558 | 250 | 435 | 16704 | 139 | 5337.6 | 2.50 | 10,181.18 |
| 5 | 89-88 | 89 | 88 | 73.4 | 59.64 | 27,075.43 | 6558 | 250 | 435 | 31929 | 139 | 10202.6 | 4.77 | 19,460.91 |
| 6 | 87-86 | 87 | 86 | 72.4 | 58.83 | 26,706.55 | 6558 | 250 | 435 | 31494 | 139 | 10063.6 | 4.71 | 19,195.77 |
| 7 | 84-82 | 84 | 82 | 40.4 | 19.70 | 8,941.53 | 5302 | 250 | 435 | 17574 | 139 | 5615.6 | 2.63 | 10,711.45 |
| 8 | 82-80 | 82 | 80 | 50 | 40.73 | 18,490.55 | 8302 | 250 | 435 | 21750 | 139 | 6950 | 3.25 | 13,256.75 |
| 9 | 80-79 | 80 | 79 | 44.2 | 43.21 | 19,618.21 | 8302 | 250 | 435 | 19227 | 139 | 6143.8 | 2.87 | 11,718.97 |
| 10 | 14-79 | 14 | 79 | 42 | 34.13 | 15,492.75 | 8302 | 250 | 435 | 18270 | 139 | 5838 | 2.73 | 11,135.67 |
| 11 | 79-78 | 79 | 78 | 35.1 | 27.65 | 12,555.35 | 8302 | 250 | 435 | 15268.5 | 139 | 4878.9 | 2.28 | 9,306.24 |
| 12 | 88-86 | 88 | 86 | 32.5 | 26.41 | 11,988.44 | 5302 | 250 | 435 | 14137.5 | 139 | 4517.5 | 2.11 | 8,616.89 |
| 13 | 86-78 | 86 | 78 | 80.5 | 84.27 | 38,257.27 | 8302 | 250 | 435 | 35017.5 | 139 | 11189.5 | 5.23 | 21,343.37 |
| 14 | 13-78 | 13 | 78 | 86 | 69.88 | 31,723.25 | 5302 | 250 | 435 | 37410 | 139 | 11954 | 5.59 | 22,801.61 |
| 15 | 78-77 | 78 | 77 | 35 | 46.17 | 20,959.99 | 11529 | 250 | 435 | 15225 | 139 | 4865 | 2.28 | 9,279.73 |
| 16 | 12-77 | 12 | 77 | 94 | 76.38 | 34,674.25 | 5302 | 250 | 435 | 40890 | 139 | 13066 | 6.11 | 24,922.69 |
| 17 | 77-75 | 76 | 75 | 20.2 | 31.31 | 14,214.41 | 11529 | 300 | 556 | 11231.2 | 168 | 3393.6 | 1.41 | 5,767.71 |
| 18 | 10-75 | 10 | 75 | 110.5 | 89.78 | 40,760.69 | 5302 | 250 | 435 | 48067.5 | 139 | 15359.5 | 7.18 | 29,297.42 |
| 19 | 75-70 | 75 | 70 | 27 | 45.43 | 20,623.10 | 11529 | 300 | 556 | 15012 | 168 | 4536 | 1.89 | 7,709.31 |
| 20 | 9-70 | 9 | 70 | 106.5 | 86.53 | 39,285.19 | 5302 | 250 | 435 | 46327.5 | 139 | 14803.5 | 6.92 | 28,236.88 |
| 21 | 7-67 | 7 | 67 | 108 | 87.75 | 39,838.50 | 5302 | 250 | 435 | 46980 | 139 | 15012 | 7.02 | 28,634.58 |
| 22 | 70-67 | 70 | 67 | 29.4 | 54.84 | 24,899.16 | 13029 | 300 | 556 | 16346.4 | 168 | 4939.2 | 2.06 | 8,394.58 |
| 23 | 67-54 | 67 | 54 | 102 | 245.29 | 1,11,362.38 | 13029 | 350 | 599 | 61098 | 172 | 17544 | 7.65 | 31,204.35 |
| 24 | 71-56 | 71 | 56 | 87 | 72.31 | 32,829.22 | 5302 | 250 | 435 | 37845 | 139 | 12093 | 5.66 | 23,066.75 |
| 25 | 53-52 | 53 | 52 | 28 | 22.75 | 10,328.50 | 5302 | 250 | 435 | 12180 | 139 | 3892 | 1.82 | 7,423.78 |
| 26 | 52-51 | 52 | 51 | 16.5 | 13.41 | 6,086.44 | 5302 | 250 | 435 | 7177.5 | 139 | 2293.5 | 1.07 | 4,374.73 |
| 27 | 2-49 | 2 | 49 | 72 | 58.50 | 26,559.00 | 5302 | 250 | 435 | 31320 | 139 | 10008 | 4.68 | 19,089.72 |
| 28 | 49-51 | 49 | 51 | 30 | 30.04 | 13,638.11 | 5302 | 250 | 435 | 13050 | 139 | 4170 | 1.95 | 7,954.05 |
| 29 | 51-54 | 51 | 54 | 24.5 | 28.75 | 13,051.33 | 8302 | 250 | 435 | 10657.5 | 139 | 3405.5 | 1.59 | 6,495.81 |
| 30 | 54-56 | 54 | 56 | 53 | 132.56 | 60,180.20 | 11637 | 350 | 599 | 31747 | 172 | 9116 | 3.98 | 16,214.03 |
| 31 | 56-58 | 56 | 58 | 29 | 60.21 | 27,333.22 | 11637 | 400 | 760 | 22040 | 219 | 6351 | 2.32 | 9,463.28 |
| 32 | 58-59 | 58 | 59 | 21 | 26.35 | 11,961.60 | 11637 | 400 | 760 | 15960 | 219 | 4599 | 1.68 | 6,852.72 |
| 33 | 59-47 | 59 | 47 | 41 | 45.92 | 20,847.68 | 11637 | 400 | 760 | 31160 | 219 | 8979 | 3.28 | 13,379.12 |
| 34 | 47-47A95 | 47 | 47A95 | 127 | 142.24 | 64,576.96 | 11637 | 400 | 760 | 96520 | 219 | 27813 | 10.16 | 41,442.64 |
| 35 | 47A95-95 | 47A95 | 95 | 38.3 | 42.90 | 19,474.78 | 11637 | 400 | 760 | 29108 | 219 | 8387.7 | 3.06 | 12,498.06 |
| 36 | 30-36 | 30 | 36 | 107.5 | 87.34 | 39,654.06 | 5302 | 250 | 435 | 46762.5 | 139 | 14942.5 | 6.99 | 28,502.01 |
| 37 | 36-46A | 36 | 46A | 33.8 | 34.36 | 15,599.65 | 5302 | 250 | 435 | 14703 | 139 | 4698.2 | 2.20 | 8,961.56 |
| 38 | 46A-46 | 46A | 46 | 104 | 147.43 | 66,932.84 | 5302 | 250 | 435 | 45240 | 139 | 14456 | 6.76 | 27,574.04 |
| 39 | 46-45 | 46 | 45 | 28.5 | 63.01 | 28,604.45 | 11302 | 250 | 435 | 12397.5 | 139 | 3961.5 | 1.85 | 7,556.35 |
| 40 | 29-45 | 29 | 45 | 97 | 78.81 | 35,780.88 | 5302 | 250 | 435 | 42195 | 139 | 13483 | 6.31 | 25,718.10 |
| 41 | 28-25 | 28 | 25 | 81 | 72.06 | 32,714.14 | 5302 | 250 | 435 | 35235 | 139 | 11259 | 5.27 | 21,475.94 |
| 42 | 27-23 | 27 | 23 | 71 | 57.69 | 26,190.13 | 5302 | 250 | 435 | 30885 | 139 | 9869 | 4.62 | 18,824.59 |
| 43 | 42-41 | 42 | 41 | 76 | 61.75 | 28,034.50 | 5302 | 250 | 435 | 33060 | 139 | 10564 | 4.94 | 20,150.26 |
| 44 | 45-40 | 45 | 40 | 97.4 | 209.37 | 95,054.92 | 11902 | 250 | 435 | 42369 | 139 | 13538.6 | 6.33 | 25,824.15 |
| 45 | 26-25 | 26 | 25 | 24.5 | 21.42 | 9,724.27 | 5302 | 250 | 435 | 10657.5 | 139 | 3405.5 | 1.59 | 6,495.81 |
| 46 | 25-23 | 25 | 23 | 34 | 31.15 | 14,142.38 | 6402 | 250 | 435 | 14790 | 139 | 4726 | 2.21 | 9,014.59 |
| 47 | 23A-17 | 23A | 17 | 161.5 | 131.22 | 59,573.31 | 6402 | 250 | 435 | 70252.5 | 139 | 22448.5 | 10.50 | 42,819.30 |
| 48 | 41A-39 | 41A | 39 | 165.5 | 134.47 | 61,048.81 | 5302 | 250 | 435 | 71992.5 | 139 | 23004.5 | 10.76 | 43,879.84 |
| 49 | 23-41 | 23 | 41 | 34 | 25.60 | 11,621.59 | 6402 | 250 | 435 | 14790 | 139 | 4726 | 2.21 | 9,014.59 |
| 50 | 41-40 | 41 | 40 | 33 | 26.81 | 12,172.88 | 6402 | 250 | 435 | 14355 | 139 | 4587 | 2.15 | 8,749.46 |
| 51 | 40-38 | 40 | 38 | 141 | 266.08 | 1,20,799.15 | 13029 | 300 | 556 | 78396 | 168 | 23688 | 9.87 | 40,259.73 |
| 52 | 17-39 | 17 | 39 | 34 | 27.63 | 12,541.75 | 6402 | 250 | 435 | 14790 | 139 | 4726 | 2.21 | 9,014.59 |
| 53 | 39-38 | 39 | 38 | 26.4 | 21.45 | 9,738.30 | 6402 | 250 | 435 | 11484 | 139 | 3669.6 | 1.72 | 6,999.56 |
| 54 | 38-37 | 38 | 37 | 49.5 | 50.12 | 22,753.91 | 11637 | 350 | 599 | 29650.5 | 172 | 8514 | 3.71 | 15,143.29 |
| 55 | 7A-1 | 7A | 1 | 154.7 | 125.69 | 57,064.96 | 6402 | 250 | 435 | 67294.5 | 139 | 21503.3 | 10.06 | 41,016.38 |
| 56 | 1-37 | 1 | 37 | 90 | 73.13 | 33,198.75 | 6402 | 250 | 435 | 39150 | 139 | 12510 | 5.85 | 23,862.15 |
| 57 | 37-96 | 37 | 96 | 167 | 187.04 | 84,916.16 | 11637 | 400 | 760 | 126920 | 219 | 36573 | 13.36 | 54,495.44 |
| 58 | 95-96 | 95 | 96 | 39 | 43.68 | 19,830.72 | 11637 | 400 | 760 | 29640 | 219 | 8541 | 3.12 | 12,726.48 |

Total 18,06,343.18 452073

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