

MECHANICAL ENGINEERING DEPARTMENT



**YASHO  
TECH MECH**

WE ARE GEARS OF TOMORROW

YSPM

Even Sem 2021-2022



**YSPM's Yashoda Technical Campus, Satara**

**Mechanical Engineering Department**

***YASHO TECH MECH***

Even Semester

2021-22

## **OVERVIEW OF THE DEPARTMENT**

The Mechanical Engineering program leading to the bachelor's degree in Mechanical Engineering (B. Tech.) is having a structured curriculum that prepares students for a broad range of career choices in the different areas of Engineering. The Course is intended for students whose career objectives require greater flexibility. Mechanical Engineering deals with material selection, design and production of tools, machines, and all other Mechanical equipment to be used in industries. Our Department prepares the students who are the driving forces behind many of our technologies and industrial processes including innovative products.

The Mechanical Engineering Department has been accredited with institute level accreditation program by National Assessment and Accreditation Council (NAAC) with B+ grade.

Our Departmental faculties are specialized in areas like Thermal Engineering, Design, Materials and Manufacturing & CAD/CAM etc. Our Students have been recruited in many reputed organizations.

### **Strength of Department**

- Good infrastructure.
- Well-equipped laboratories.
- Well-qualified and experienced teaching faculties.
- Departmental Library facility for students.
- Personal Monitoring of Students with the help of Guardian Faculty Members
- Good academic performance
- Good Campus Placement Record
- Faculty Retention

### **Vision of the Department**

To be identified as a department with excellence in academics by synergism of teaching-learning, skill development and research.

### **Mission of the Department**

M1 : To develop state of the art facilities to stimulate faculty, staff and students to create, analyze, apply and disseminate knowledge.

M2 : To hone employability and entrepreneurship skills of the students through industry-institute interaction.

M3 : To create an environment for the students to excel in mechanical engineering field, engage in research and development activity and participate in professional activities.

M4 : To develop an ability to use techniques, skills, modern software and machine tools necessary in the practice of Mechanical Engineering Profession.



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## Mechanical Engineering Department

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### **Program Educational Objectives (PEOs)**

PEO1 : Graduates should excel in engineering positions in industry and other organizations that emphasize design and implementation of engineering systems and devices.

PEO2 : Graduates should excel in best post-graduate engineering institutes, acquiring advanced degrees in engineering and related disciplines.

PEO3 : Alumni should establish a successful career in an engineering-related field and adapt to changing technologies.

PEO4 : Graduates are expected to continue personal development through professional study and self-learning.

PEO5 : Graduates should be good citizens and cultured human beings, with full appreciation of the importance of professional, ethical and societal responsibilities.

### **Program Specific Outcomes (PSOs)**

**PSO1 : Make the students employable in engineering industries.**

**PSO2 : Motivate the students for higher studies and research.**

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## INSIDE

1. STUDENT ARTICLES

2. FACULTY ARTICLES

3. FACULTY STUDENT CORNER

4. Art Gallery

## Contributors

### Faculty Name

Prof. Rathod M L

Prof. Maner V B

Prof. Nimbalkar P P

Prof. Raut S K

Prof. Atpadkar A B

Prof. Shivade A S

Head of the Department  
Mr. V B Maner

All  
Students of  
Department

### Student coordinators

1) Sudarshan Jotiram Sarde

2) Kunal Nandkumar Bagade

3) Kori Sachin Raju

4) Shinde Maheshwari B

5) Kapse Sourabh Dasharath

6) Paramane Shivam Narendra

Principal  
Prof. Dr. R P Kulkarni

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## Industrial Visit to Rayat Science and Innovation Activity Center, Satara

An industrial visit was organized for Second-Year Mechanical Engineering (S.Y. Mech) students on 9th February 2022 to the Rayat Science and Innovation Activity Center, Satara (Varye). The visit provided students with practical exposure to new technologies and an opportunity to explore the research activities.

### Objectives of the Visit:

- To understand and learn about emerging technologies, enhancing students' approach toward research activities.
- To study and implement physics concepts in daily life through real-world applications.
- During the visit, students explored scientific models, innovative experiments, and interactive demonstrations, which helped them connect theoretical concepts with practical applications. Experts at the center provided insights into advanced research methodologies, encouraging students to think critically and apply engineering principles effectively.

The visit was a valuable learning experience, broadening students' perspectives on scientific research and technological advancements. It motivated them to develop an innovative mindset and apply physics-based principles in mechanical engineering.

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## Industrial Visit – Welflow Engineering pvt ltd Satara

An industrial visit was organized for Second-Year B.Tech students on 21st February 2022 to Welflow Engineering Pvt. Ltd., Satara, as part of the Material Science and Metallurgy curriculum. The visit was guided by faculty members Mr. Rathod M. L. and Mrs. Yadav P., with 22 students participating.

### Objectives of the Visit:

To study various heat treatment processes, including annealing, normalizing, cooling media, hardening, tempering, quenching, nitriding, carbo-nitriding, and induction hardening.

### Industry Insights:

The visit was led by Mr. Dhruva Gohel (HR Manager), who provided a detailed overview of heat treatment techniques used in manufacturing and metal processing. Students gained first-hand exposure to the importance of controlling phase transformations to achieve the desired mechanical properties such as ductility, hardness, toughness, and strength.

The industry experts explained how different cooling rates impact material properties, influencing machinability, weldability, and durability. Heat treatment plays a crucial role in modifying microstructures, thereby enhancing the performance and lifespan of materials in industrial applications.

### Key Learning Outcomes:

Understanding the practical applications of metallurgical concepts.

Observing real-world industrial processes beyond theoretical classroom learning.

Recognizing the significance of heat treatment in improving material properties.

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### Industrial Visit – Welflow Engineering pvt ltd Satara



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### Industrial Visit to E Vishw Sahyadri Bike Showroom and Workshop

To bridge the gap between theoretical learning and practical applications, the Department of Mechanical Engineering, Yashoda Technical Campus, Satara, organized an industrial visit for Third-Year B.Tech (Mechanical) students. The visit was arranged under the subject Internal Combustion Engine Lab and took place at E Vishw Sahyadri Bike Showroom and Workshop, Satara, on February 6, 2022.

#### **Purpose of the Visit:**

The objective of this visit was to provide students with hands-on experience and an understanding of automobile servicing, workshop operations, and engine maintenance. The visit aimed to familiarize students with real-world industry practices in engine diagnostics and vehicle servicing.

#### **Key Highlights:**

- **Industry Exposure:** Students toured the automobile servicing unit, gaining insights into various maintenance and repair procedures.
- **Engine Technology & Diagnostics:** Experts demonstrated engine dismantling, fault identification, and performance tuning.
- **Hands-on Learning:** Students observed fuel injection systems, cooling mechanisms, and lubrication processes.
- **Industry Interaction:** A Q&A session with professionals provided clarity on career opportunities and advancements in automobile engineering.
- **Practical Understanding:** The visit reinforced the importance of safety standards, quality control, and precision engineering.

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**Industrial Visit to E Vishw Sahyadri Bike Showroom and Workshop**





## Industrial Visit to Venna Milk Dairy, Satara

The Department of Mechanical Engineering, Yashoda Technical Campus, Satara, organized an industrial visit to Venna Milk Dairy, Wadhe Phata, Satara, on June 8, 2022 for Third-Year B.Tech (Mechanical) students. The visit was conducted under the subject Refrigeration & Air Conditioning Lab and was coordinated by Mr. Raut S. K., along with faculty members Mr. A. B. Atpalkar and Mrs. P. S. Yadav.

### **Objective of the Visit-**

The primary aim of this visit was to provide students with practical exposure to: Various components and processes related to refrigeration and air conditioning in dairy operations.

The working of cold storage plants and their role in milk preservation.

Understanding different refrigeration processes used in dairy industries.

### **Key Observations-**

During the visit, students had the opportunity to observe:

The functioning of compressors, condensers, expansion devices, evaporators, and heat exchangers.

Refrigeration processes for milk and dairy products, ensuring product longevity.

Standby systems for efficient and uninterrupted dairy operations.

### **Learning Outcomes The visit helped students:**

Gain insights into the pasteurization process of milk.

Understand the importance of incubators in controlling temperature between 40-50°C.

Learn about cold storage technology and its role in the dairy industry.



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**Industrial Visit to Venna Milk Dairy, Satara**







## **Faculty Development Program (FDP) Attended**

**Mr. Raut Satish Keru Successfully Completes AICTE FDP on Universal Human Values**

**We are proud to announce that Mr. Raut Satish Keru from Yashoda Technical Campus, Satara, has successfully participated in and completed the 5-day online Faculty Development Program (FDP) on the theme:**

**“Inculcating Universal Human Values in Technical Education”**

**Program Duration: February 21, 2022 - February 25, 2022**

**Organized by: All India Council for Technical Education (AICTE)**

**Objective of the FDP**

**The FDP aimed at integrating Universal Human Values (UHV) into technical education, ensuring that educators can:**

- ✓ Instill ethical and moral values in students.**
- ✓ Promote holistic development by blending technology and human values.**
- ✓ Foster a harmonious learning environment in educational institutions.**
- ✓ Encourage self-awareness and professional responsibility among faculty and students.**



**Faculty Development Program (FDP)**

F.No AICTE/FDP-SI/OnlineWorkshop/229/129669



**ALL INDIA COUNCIL FOR TECHNICAL EDUCATION**  
NELSON MANDELA MARG, VASANT KUNJ, NEW DELHI

*Certificate of Participation*

This is to certify that **Mr. Raut Satish Keru** from **Yashoda Technical Campus, Satara** has participated and successfully completed the **Part 1** of the online UHV Refresher 1 FDP organized by All India Council for Technical Education(AICTE) from **18<sup>th</sup> April, 2022** to **22<sup>nd</sup> April, 2022**.

Dr. Rajneesh Arora  
Chairman  
National Coordination Committee for Induction Program

Prof. Rajive Kumar  
Member Secretary, AICTE



## Field Trainings arranged by Department.

1.Short term training on Quality Improvement Tools in Manufacturing Industry.

Faculty Co-ordinator- M L Rathod

2.Short term training on Analysis of Mechanical Elements Using ANSYS.

Faculty Co-ordinator- P P Nimbalkar

**SHORT TERM TRAINING PROGRAM ON**

### QUALITY IMPROVEMENT TOOLS IN MANUFACTURING INDUSTRIES

It is online course of 60 hours. It will be considered as field training work. This training is overview of quality improvement tools used in mechanical industries. The case studies will be discussed for better understanding. E-certification after successfully completion of passing criteria.

**Course content-**

- 7 Basic Quality Control Tools
- 5 Quality tools (APQP, FMEA, MSA, SPC, PPAP)
- Lean Manufacturing Tools.
- Modern Tools of TQM
- Six Sigma
- Japanese Quality Management Tools
- Smart Manufacturing
- Quality 4.0 tools

**REGISTRATION:**  
FEE: RS. 200/-  
REGISTRATION DURATION: 25/8/21 TO 27/8/2021

Course co-ordinator:  
Mr. M L Rathod  
Call: 7798564675

**SHORT TERM TRAINING PROGRAM ON**

### ANALYSIS OF MECHANICAL ELEMENTS USING ANSYS

**About the Training**

It is online course of 60 hours. It will be considered as field training work. This training is overview of analysis of mechanical element using ANSYS. Also there is one expert lecture of industrial expert. E-certification after successfully completion of passing criteria.

**Registration:**  
Fee: Rs. 200/-  
Registration duration: 25/8/21 to 27/8/2021

**Training Content**

- ✓ Introduction to ANSYS software
- ✓ Introduction to APDL & Workbench
- ✓ Node and Element creation
- ✓ Types of Meshing
- ✓ Drafting and Analysis in workbench
- ✓ Case study and hands on training

Course coordinator  
Mr. P P Nimbalkar  
7588624529



## Students Achievement

Sr No	Name of Student	Class	Achievement
01	Prajakta Vishwas Jadhav	TY B.Tech.	Nurturing Brilliance: Cummins Scholarship-2022
02	Nikam Ashitosh Prithviraj	Final Year B.Tech.	Elocution Competition Winner Level- State level and district level.





## Students Article

### Advancements in Non-Traditional Machining

Non-Traditional Machining (NTM) has transformed manufacturing by enabling precise machining of hard, brittle, and complex materials that are difficult to process using conventional methods. With rapid advancements in technology, automation, and material science, NTM techniques are becoming more efficient and widely used in industries like aerospace, medical, and electronics.

#### **Key Advancements in NTM:**

- Hybrid Machining - Combining EDM, ECM, or LBM for enhanced efficiency.
- Nano & Micro Machining - Enabling ultra-precise component fabrication.
- AI & Automation - Optimizing machining parameters for accuracy and speed.
- Eco-Friendly Processes - Using water jet machining and improved chemical techniques to reduce environmental impact.

With continuous innovations, NTM is revolutionizing precision manufacturing, ensuring higher accuracy, lower tool wear, and superior surface quality

By,

WALWEKAR ASHWINI ANIL

Final Year BTech