

# MExpress

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Mechanical Engineering Department's Official Newsletter

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Mechanical Engineering Association

Department of Mechanical Engineering

**KUMARAGURU COLLEGE OF TECHNOLOGY**



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## From the Editors...

Dear Readers,

It gives us a great joy to present our departmental newsletter, a reflection of the vibrant activities and notable achievements that define our journey. Each page of this edition captures the dedication, passion, and hard work of both our faculty and students.

This issue brings together the spirit of academic engagement through programmes organized, insightful sessions delivered by our faculty as resource persons, and the valuable research shared through paper presentations and publications. Faculty members have continued to contribute to academic growth by reviewing manuscripts and publishing impactful book chapters, while consultancy efforts and collaborative activities have extended our reach beyond the institution.

Applying for patents and strengthening of industry linkages highlight our commitment to innovation and real-world application. Faculty participations in various programmes have enriched their professional experience, bringing back valuable insights to our classrooms. Our students, with their energy and creativity, have actively participated in diverse activities, adding vibrancy to our academic environment.

Through the snapshots featured, we relive some of the memorable moments that mark the spirit of our department.

We extend our heartfelt thanks to everyone who contributed to the preparation and release of this issue. Your efforts, enthusiasm, and constant support have been invaluable. We are excited about what lies ahead and look forward to our continued success together.

Warm regards,

**Editors....**





## PROGRAMMES ORGANIZED



As a part of Yugam 2025, a Workshop on “Sensor and Actuator” was organized on 03-03-2025. **Mr. Gunasekaran Lingasamy** (Project Manager/ Senior Professional), and **Mr. Ramkumar H** (Senior Consultant), Capgemini Engineering were the resource persons. **Dr. M. A. Vinayaga Moorthi**, Assistant Professor – III and **Dr. T. Karuppusamy**, Assistant Professor – III coordinated the event.



Another Industry-led Session for the course “U18MEE0004-R21/ Design for Manufacturing and Environment was organized on 13-03-2025. **Mr. Sidhaarth Krishnamoorthy**, Founder, 4Q Dental Lab, Senior Director DITAR Solution, Coimbatore was the resource person. **Dr. V. Muthukumaran**, Professor, coordinated the session.

## Departmental Activities



An Industry-led Session for the course “U18MET4007-Basics of Mechanical Engineering” was organized on 12-03-2025. **Mr. Senthilkumar**, Senior Executive Engineer, Lakshmi Machine works, (Unit-I), Periyanaickenpalayam, Coimbatore was the resource person. **Dr. T. Karuppusamy**, Assistant Professor – III coordinated the event. One more industry-led session for the same course was held on 22-03-2025 and was coordinated by **Dr. Karuppusamy**. **Mr. K. Kathir Balaji**, Deputy Manager, Innovation & Research, Titan Company Limited, Hosur was the resource person.





## Departmental Activities



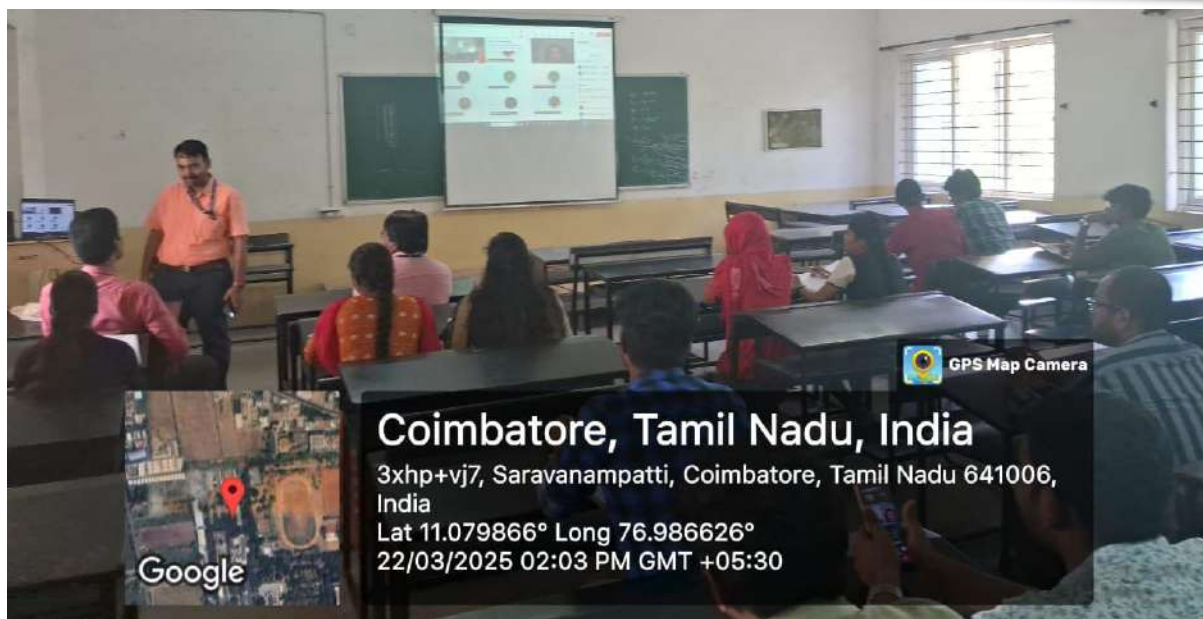
For the course, "U18MET4003-Kinematics of Machinery" an Industry-led Session was organized on 17-03-2025. **Mr. Gautham Siddharth**, B.E., Mechanical Design Lead at Titan Engineering & Automation Limited, Hosur was resource person. **Dr. C. Velmurugan**, HoD and **Dr. T. Karuppusamy**, Assistant Professor – III coordinated the session. "



**Dr. R. Manivel**, Professor and **Mr. S. Sivakumar**, Assistant Professor – II coordinated an industry led-session for the course "U18MEI6201 – Heat and Mass Transfer" on 19-03-2025. **Mr. Sudalaiyandi Durkesh P**, Design Engineer, Acoustics, Khatib & Alami, Bengaluru was the resource person.



## Departmental Activities



Further, another Industry-led Session was organized for the course "U18MEI6203 - Finite Element Analysis", on 22-03-2025. **Mr. S. Sam Vimal Kumar**, CAE Engineer Valeo India Pvt Ltd, was the resource person. **Dr. M. Thirumalai Muthukumaran**, Assistant Professor - III coordinated the event.



**Dr. T. Sivakumar**, Manager- O & M at Suzlon Infrastructure and Services Limited, Vanku, Gujarat was the resource person for an industry led session for the course "U18MEE0027 Renewable Energy Sources". **Dr. P. R. Ayyappan**, Assistant Professor (SRG) coordinated the session.



## Departmental Activities



One more Industry-led Session for the course “U18MEE0016 – Plant Layout and Process Design” was organized on 25-03-2025. **Mr. Sedhu Siddarth R**, Project Engineer, Hirotec India Pvt Ltd, Coimbatore – 641035 was the resource person. **Dr. V. R. Muruganantham**, Associate Professor, coordinated the session.



Industry-led Session for the course on “P18MB00008 - Personal Investment Management” was organized on 25-03-2025. **Mr. Gowtham Dhamocharasamy**, a distinguished Social-Entrepreneur, Angel Investor, Professional Trainer, Wealth Coach and Alumni of KCT Business School and KCT and the founder of FINCLINI, Coimbatore was the resource person. **Mr. K. Manikanda Prasath**, Assistant Professor – II, coordinated the event. Further, following international co-teaching sessions were coordinated by **Mr. K. Manikanda Prasath**, Assistant Professor – II, for the courses “U18EEI4207 Electrical Drives and Control” and “U18MET6005 Applied Materials Engineering” as detailed below.

## Departmental Activities



Speed Control of Induction Motors on 10-03-2025, 20-03-205 and on V/F control using VSI on 17-03-2025, and SCR based Voltage Controller on 13-03-2025. **Ir. Assoc. Prof. Dr. Gobbi A/L Ramasamy**, Associate Professor, Faculty of Engineering (FOE) Multimedia University, Persiaran Multimedia Cyberjaya 63100 Selangor was the resource person.



## Departmental Activities



Synthesis of Nanomaterials on 19-03-2025 and Emerging Materials on 18-03-2025, and Application of Drilling in Oil & Gas on 25-03-2025, Sustainable Materials on 21-03-2025. **Prof. Chithirai Pon Selvan, Director - Research & Head of School, Science and Engineering, Curtin University, Dubai** was the resource person.



**Mr. K. Arumugam**, Senior Technical Associate of the department organized State Level Chess Competition as part of Kumaraguru Institutions, Dr. N. Mahalingam Chess Academy and Friends Chess Club, Coimbatore on 23-03-2025. Under 7 categories 439 students across the state participated.



## Departmental Activities



Tamil Nadu's largest Women Hackathon "TNWISE 2025" with the theme "Transportation and Mobility" was organized by the department on 28-03. **Dr. Hiran Vedam** – Co-Founder & Chief Catalyst, **Mr. Praveen Bhagoji** – Senior Project Manager, La Foundation Dassault Systemes, **Wg Cdr P. Madhusoodhanan** – Director, TANCAM, **Mr. SM Vijayadeepan** – CEO, TANCAM,



**Ms. Thendral Rajendran** – Vice President, Corporate & Industry Relations, TANCAM, **Mr. R. Ambalavanan** IA & AS – Director, EDII-TN, **Mr. PM Ravikumar** – Former Board Member, Dassault Systemes India, **Mr. M. Karthikeyan** – President, CODISSIA were the chief guests. 2025. **Dr. C. Velmurugan**, HoD and **Mr. R. S. Mohankumar**, Assistant Professor – II coordinated the event.

## FACULTY AS RESOURCE PERSON



**Dr. S. Bhaskar**, Associate Professor, was the resource person for an outreach programme titled "Career opportunities available for UG in India and abroad" on 25-03-2025 organised by Stanes School – ICSE / ISC, Avanashi Road, Coimbatore for their students.



**Dr. N. Sangeetha**, Senior Associate Professor, was the Jury Member for the TNWISE 2025 Hackathon for Women in Science and Engineering Organised by TANCAM & KCT on 29-03-2025.







**Dr. M. Balaji**, Associate Professor, was as a Faculty Lead for CAMPUS DECOR in lines with Yugam 25 held on March 5th, 6th and 7th in the campus. He also coordinated two Yugam events through VARNAM Club namely 'Wall Painting' and 'Dimension Drift' on 6th and 7th of March 2025 respectively. Dr. Balaji was also a judge for the second event 'Dimension Drift' with over 35 participants across the state.



### PAPER PRESENTATIONS



**Dr. V. Muthukumaran**, Professor, presented his paper entitled "Development of a Semi - Automatic Screw extrusion dough divider for enhanced pastry production" in the Third International Conference on Research Advancement and Innovations in Sustainable Engineering organized by Dr. NGP Institute of Technology during 06-03-2025 and 07-03-2025.

### PAPERS PUBLICATIONS

**Dr. V. Muthukumaran**, Professor, published his paper titled "Potential of Purified Flavonoid from Citrus limon L. Seeds to Inhibit the Urease Activity and Restrict the Formation of Struvite Stone: In vitro Study" in the Current Enzyme Inhibition, International Scopus indexed journal.





# Departmental Activities

## MANUSCRIPTS REVIEWED



**Dr. K. K. Arun**, Assistant Professor – III reviewed **two** manuscripts for **MAT Journals Pvt. Ltd.**

**Dr. P. S. Samuel Ratna Kumar**, Assistant Professor – III, reviewed **three** manuscripts for **Taylor & Francis**.



**Dr. B. N. Sreeharan**, Assistant Professor – III, reviewed **two** manuscripts for **Physica Scripta, IOP Publishing**, and for **Discover Materials, Springer Nature**.

## BOOK CHAPTER PUBLICATIONS



**Dr. K. K. Arun**, Assistant Professor – III, published a book chapter on “Concepts and Applications of Brain-Computer Interfaces” for the book titled “Transforming Marketing Analytics With Brain-Computer Interface Innovations”, published by IGI Global.

**Dr. P. S. Samuel Ratna Kumar**, Assistant Professor – III, published a book chapter on “Optimization of Curing Time for the Fabrication of Raw Edged Cogged Belt with Enhanced Breaking Strength” for the book titled “Signals and Communication Technology”, published by Springer. He also authored another book chapter on “Investigation of Textured Tools in the Cutting of Distinct Materials” for the same book.



## CONSULTANCY



**Dr. R. Manivel**, Professor and **Dr. M. Thirumalai Muthukumaran**, Assistant Professor – III provided consultancy on "Transient structural analysis of top arm for Rotary hay rake using Ansys to predict fatigue life" for M/s. Bull Agro Implements, Coimbatore – 641042. They also provided another consultancy by providing training in CAD modelling for Bull Agro Engineers. Both worth Rs. 18880/-



## COLLABORATIVE ACTIVITY



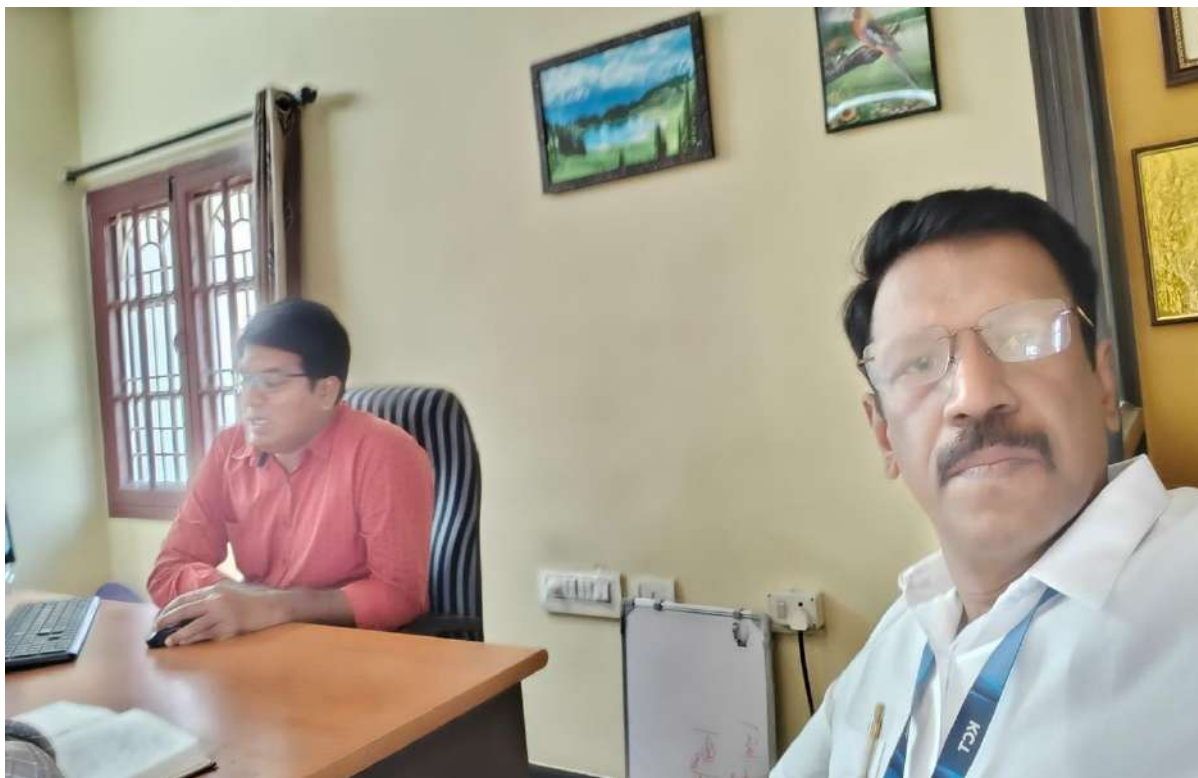
A Research Retrospection on "Advancements in Heat Transfer Augmentation" at P. K. Fokam Institute of Excellence, Yaounde, Cameroon was done by **Dr. S. Ramanathan**, Assistant Professor – III, on 11-03-2025, for the students and faculty members of Mechanical, Physics, Mechatronics and Electrical and Electronics Technology.

## PATENTS

**Dr. K. K. Arun**, Assistant Professor III, registered for a patent titled "Additive Manufacturing System and method for Multi-Material Composite Structure Fabrication" bearing No. 202541031304 on 30-03-2025.



## INDUSTRY LINKAGES



**Dr. V. Muthukumar**, Professor, visited M/s. Spark Drives and Automation, Coimbatore on 10-03-2025 for having a collaborative activity for New Product Development

## PROGRAMMES PARTICIPATED

**Mr. S. Sivakumar**, Assistant Professor III, completed an online course on "Coursera Certified Admin" on 01-03-2025 through Coursera. He also completed another online course on "Power Hydraulics and fluid Machinery" on 05-03-2025 through Udemy.



**Dr. M. Thirumalai Muthukumar**, Assistant Professor III, participated in an FDP on Machining and Machine Tools Design and Development from 17-03-2025 to 22-03-2025, organized by Annant Gyan Knowledge and skills private ltd. He also participated in a Webinar on Mastering Multibody Dynamics for Real-World Applications on 03-03-2025 organized by ARK Info Solution Pvt. Ltd.



## Departmental Activities



**Dr. B. N. Sreeharan**, Assistant Professor III, completed an online course on "Copilot for Beginners: Sales Data Analysis in Excel" on 11-03-2025 and Regression Analysis - Fundamentals & Practical Applications on 23-03-2025 through Coursera. He also completed another online course on "Beginner Statistics for Data Analytics - Learn the Easy Way" on 17-03-2025 through Udemy.

**Dr. N. Sangeetha**, Senior Associate Professor, participated in a Webinar on Mastering Multibody Dynamics for Real-World Applications on 03-03-2025 organized by ARK Info Dolution Pvt. Ltd. She also participated in a Hackathon on TNWISE 2025 Hackathon for Women in Science and Engineering on 21-03-2025 organized by Periyar Manimammai University, Vallam, Thanjavur.



**Dr. M. A. Vinayaga Moorthi**, Assistant Professor III, completed an online course on "IoT Enabled Farming" on 20-03-2025 through Coursera.

**Mr. P. D. Devan**, Assistant Professor II, participated in a Webinar on Mastering Multibody Dynamics for Real-World Applications from 03-03- on 03-03-2025 organized by ARK Info Solution Pvt. Ltd.



**Dr. K. K. Arun**, Assistant Professor III, completed an online course on Introduction to Advanced Vibrations on 21-03-2025 through Coursera.

**Dr. A. P. Arun**, Assistant Professor III, participated in a FDP on Innovation and Entrepreneurship from 25-03-2025 to 29-03-2025, organized by All India Council for Technical Education.



**Mr. P. Pradeep**, Assistant Professor II, participated in a Hackathon on Brilliant Bharath Hackathon 2k25 on 01-03-2025 organized by Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam.

## STUDENT ACTIVITIES



**Ms. S. Swetha**, 22BME117, and **Ms. S. Santhya**, 22BME089 participated in TNWIS 2025 Hackathon for Women in Science and Engineering Organised by TANCAM & KCT on 28-03-2025 and won 2<sup>nd</sup> prize worth Rs. 50,000/-. They were ably supported by their class student mentors: **Mr. J. Surya**, 22BME115, **Mr. S. Yogesh**, 22BME126 and **Mr. R. Prithviraj**, 22BME315. They were mentored by **Dr. P. S. Samuel Ratna Kumar**, Assistant Professor – III, **Dr. V. R. Muruganantham**, Associate Professor, and **Dr. N. Sangeetha**, Senior Associate Professor.



**Mr. G. Kishore**, 23BME048 and **Mr. R. V. Kavin**, 23BME045 secured 1<sup>st</sup> place in MECHSTRIVE at YUKTA'25, hosted by PSG Institute of Technology and Applied Research, Coimbatore on 14-03-2025.

## Departmental Activities



**Mr. K. Praveen**, 23BME073 and **Mr. T. K. Sri Yashwanth**, 23BME090, secured 3<sup>rd</sup> place in MECHSTRIVE at YUKTA'25, hosted by PSG Institute of Technology and Applied Research, Coimbatore on 14-03-2025.



**Mr. G. Sree Ram**, 22BME105, represented Tamil Nadu in All India Federation Wushu Championship 2025 held at Bilaspur, Chhattisgarh during 24<sup>th</sup> to 28<sup>th</sup> March 2025 and bagged Gold medal.

**Mr. U. Suriya Prakash**, 22BME114, has qualified and has a GATE score of 305 in the recently held GATE 2025-Exam and his All India Rank (AIR) is 2233 out of 11156 students.



## Departmental Activities



Following students are undergoing paid internship at CRI Pumps under scheme. **Mr. P. D. Devan**, Assistant Professor – II, coordinating the internships.

Roll No.	Name
21BME016	BHOOPATHY R
21BME076	SELVASURENDHAR A
21BME003	ADHITHYAN T
21BME050	MARIO ABISHEK
21BME025	GOURAV S
21BME064	RAGUL S
21BME224	SRI GANESH SIVASUBRAMANIAN S
21BME070	SANJAY P
21BME093	VAIJAYANTH MADHAVAN V
21BME220	SANJEETH R V
21BME216	PALANI C
21BME212	LOGESHWARAN T
21BME218	SANJAI B
21BME201	ABINESH K
21BME103	YUHENDRAN R J
21BME210	KARTHIKEYAN G
21BME228	TONY ABRAHAM S
21BME101	VISHWA V
21BME097	VIBIN AHKASH
21BME047	SIVA SHANMUGAM M
21BME203	DINESH BABU
21BME101	VISHWA V



Project review for final year students were conducted on 29-03-2025 in the department. Industry Experts, **Mr. J. Sabareeswaran**, Manager, Sedan Inspection Services, Coimbatore, **Mr. V. Sudhakar**, Senior Manager, SECO Tools India Private Limited, Coimbatore, **Mr. K. Buvaneeswaran**, Head – Operations, Asia Engineering, Coimbatore and **Mr. N. Sivakumar**, Manager, ELGI Equipments, Coimbatore were present during review



and provided valuable feedback to the students for improving their project work. Reviews were coordinated by **Dr. V. Manivel Muralidharan**, Assistant Professor – III, and **Mr. R. S. Mohankumar**, Assistant Professor – II.





## Departmental Activities



Project Review

## SNAP SHOTS



Our faculty members honouring the resource person during Workshop on “Sensors and Actuators”



Our students @ LMW



## Departmental Activities



Our students and faculty with Mr. Sedhu Siddarth



Mr. Gowtham Dhamotharasamy, FINCLINIQ, during his session

## Departmental Activities



TNWISE – 2025, First Prize Winners



TNWISE – 2025 Valediction



## Departmental Activities



Glimpses of TNWISE – 2025



## Departmental Activities



International Co-teaching for the course “Applied Materials Engineering”

## Departmental Activities



Dr. M. Balaji as judge for the event 'Dimension Drift'



Dr. Ramanathan @ P. K. Fokam Institute of Excellence, Yaounde, Cameroon



## Departmental Activities



During project review



Mr. Arumugam, honouring the Prize Winner in Chess Competition



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COIMBATORE – 641 049

## Department of Mechanical Engineering

### INSTITUTE VISION:

The vision of the college is to become a technical university of International Standards through continuous improvement.

### INSTITUTE MISSION:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic, and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

### DEPARTMENT VISION:

To achieve global recognition for the programs of the department by promoting innovation, sustainability, and leadership, contributing to the society.

### DEPARTMENT MISSION:

1. To promote innovation in the Mechanical Engineering through curriculum, focusing on sustainability and ethical practices.
2. To create an active learning ecosystem for acquiring knowledge and skills in Mechanical Engineering.
3. To facilitate research in mechanical systems and sustainable technologies that have an impact on industry and society.

## B. E. MECHANICAL ENGINEERING

### PROGRAM EDUCATIONAL OUTCOMES (PEO's):

- PEO 1 :** Graduates to pursue careers in Mechanical engineering and allied fields.  
**PEO 2 :** Graduates to engage in the execution of multi-disciplinary engineering activities.  
**PEO 3 :** Graduates to pursue professional development programs in Mechanical Engineering Science and Management.



## PROGRAM OUTCOMES (PO's):

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSO's):

1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.
2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.

## M. E. INDUSTRIAL ENGINEERING

### PROGRAM EDUCATIONAL OBJECTIVES (PEO's):

- PEO 1 :** Graduates will be mid to higher level management / engineering professionals with responsibilities in engineering management, data analysis and business operations.
- PEO 2 :** Graduates will be engineering professionals, and technology leaders who would manage such functions as plant engineering, production, supply chain and quality management.
- PEO3 :** Graduates would function as educators or researchers in academic institutions.

### PROGRAM OUTCOMES (PO's):

- P01 :** An ability to independently carry out research /investigation and development work to solve practical problems.
- P02 :** An ability to write and present a substantial technical report/document.
- P03 :** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- P04 :** Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.
- P05 :** Apply principles of industrial engineering to solve problems in industry.
- P06 :** An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.