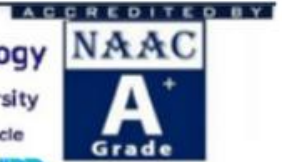


**PSN****College of Engineering and Technology**

An Autonomous Institution, Affiliated to Anna University

Approved by AICTE, Accredited by NAAC with A+ Grade in 3rd Cycle**DEPARTMENT OF MECHANICAL AND AUTOMATION
ENGINEERING****EDITORIAL TEAM****PATRONS****Dr.P.SELVAKUMAR,**
EXECUTIVE DIRECTOR**Dr.AMIRDHA SHER GILL**
PRINCIPAL**EDITOR IN CHIEF****Mr.V.Ramkumar**
HOD/MAE**EDITORIAL BOARD MEMBERS****Dr.P.Manikanda Pirappu**
ASSO.PROFESSOR/MAE**M.ELIZA****(IV/MAE)****S.SARANYA (III/ MAE)****Automation in Manufacturing For Mechanical and
Automation Engineering**

Automation in manufacturing has become a cornerstone of modern mechanical and automation engineering, revolutionizing how products are designed, produced, and assembled. It involves the use of control systems, robotics, and information technologies to operate machinery and processes with minimal human intervention. This shift enhances productivity, improves precision, reduces errors, and ensures consistent product quality. Automation enables faster production cycles, better resource utilization, and greater flexibility in manufacturing operations. In mechanical and automation engineering, automation technologies such as CNC machines, industrial robots, programmable logic controllers (PLCs), and computer-integrated manufacturing (CIM) systems are widely adopted to streamline complex processes. As industries move toward smart manufacturing and Industry 4.0, the integration of artificial intelligence, IoT, and data analytics further strengthens the role of automation, making it an essential component for achieving efficiency, competitiveness, and innovation in the manufacturing sector.

JOURNAL PUBLICATIONS

Prof.V.Ramkumar, P.Selvakumar,
"Enhanced microstructure, mechanical and tribological properties of γ -methacryloxy-propyl-trimethoxy-silane functionalized palm/cocho/wood/tamarind composite." (SCI)

Prof.S.Ananth, P.Selvakumar, Experimental Investigation of Sand-based Sensible heat energy storage system,(SCI)

M Thirukumaran, G Uthayakumar, T Ganapathy, K **Sudhakar,**K Durkaieswaran, **SR Stalin,** Examine the static and dynamic mechanical properties of alkali-treated Cannabis sativa plant fiber-reinforced composites. (SCI)

Prof.S.Ananth, P.Selvakumar, Design Optimization of Sand Based Energy Storage System Using Response Surface Methodology. (SCI)

Subbulakshmi A.and **Sreenivasan V.S,** Unveiling the industrial photocatalytic dye degradation of textile effluents using tailored eco-friendly AgO Nanoparticles (SCOPUS).

POOJA CELEBRATIONS



Faculty members and students celebrated the Pooja Day on 11-10-2024.

GUEST LECTURE

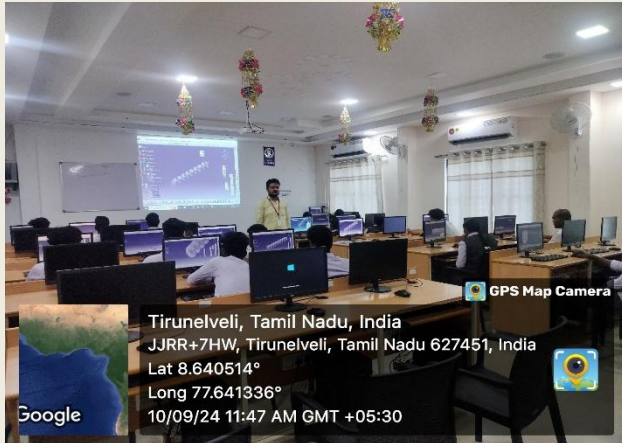


Prof.K.Sundararajan,HoD,MBA presented the Guest lecture on " Indian Heritage - knowledge based system" to our Mechanical and Automation Engineering Students on today at MBA Seminar hall. He gave speech about the Indian heritage diverse cultures, traditions, and historical influences, spanning millennia.

DEPARTMENT ACTIVITIES

VALUE ADDED COURSES

VAC on “CATIA”



Department of Mechanical and Automation Engineering organized a 5 days Value-Added Course on “CATIA” at CAD LAB – PSNCET , Prof.D.Dinesh Kumar AP /MAE as a Resource Person. Our Hod Prof. V.Ramkumar welcomes the student participants. Dr. M.Thirukumaran, Associate Professor & Coordinator/delivered vote of thanks. Program ended with National Anthem.

YOGA PROGRAM



Mechanical and Automation Staffs and Students Attended Yoga and Meditation program on 28.09.2024 , Resource Person by MANJU PREM,MCKS PRANIC HEALING

INDUSTRY VISIT



Department of Mechanical and Automation Engineering Staff and Students visited the Family Plastics Pvt, Ltd, Gangaikondan.

CAMPUS CLEANING



Department of Mechanical and Automation Engineering Students involved in Department Campus cleaning on 29-07-2024.

SYMPOSIUM



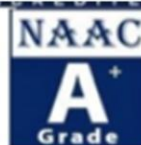
Department of Mechanical and Automation Engineering Organized National Technical Level Symposium – MASS 2k25



PSN

College of Engineering and Technology

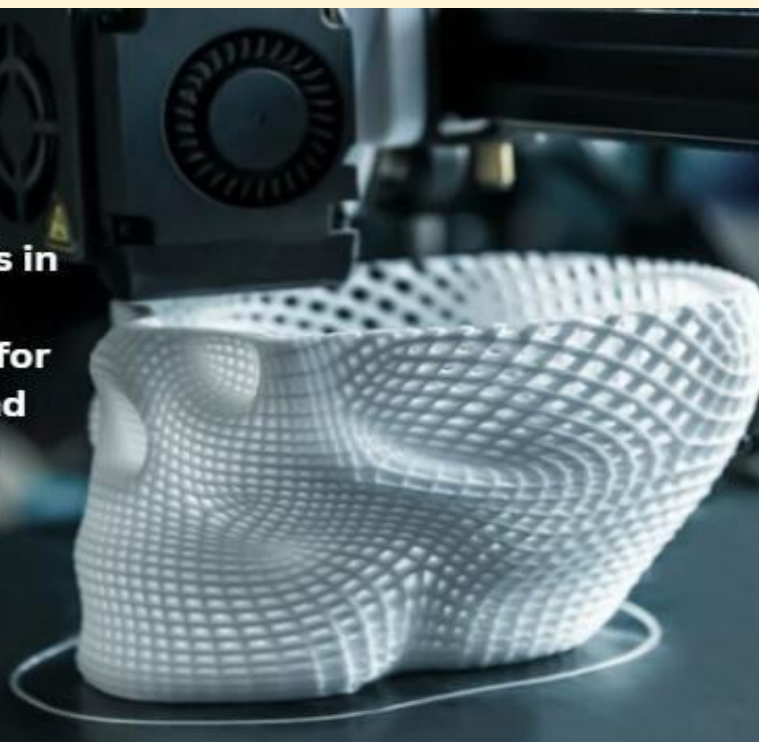
An Autonomous Institution, Affiliated to Anna University
Approved by AICTE, Accredited by NAAC with A+ Grade in 3rd Cycle



**DEPARTMENT OF MECHANICAL AND AUTOMATION
ENGINEERING**



Emerging Trends in Additive Manufacturing for Mechanical and Automation Engineering



EDITORIAL TEAM PATRONS

Dr.P.SELVAKUMAR,
EXECUTIVE DIRECTOR

Dr.AMIRDHASHER GILL
PRINCIPAL

EDITOR IN CHIEF
Mr.V.RAMKUMAR
HOD/MAE

EDITORIAL BOARD MEMBERS

Mr.K.SUDHAKAR

ASST.PROFESSOR/MAE

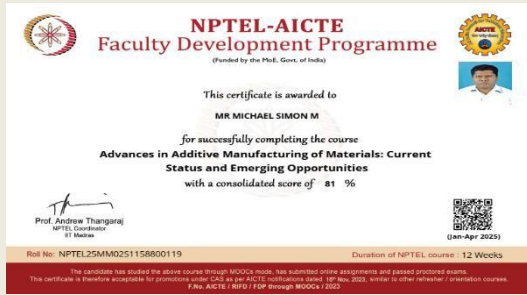
K.VISAN (IV/MAE)

S.SANTHARAJA (IV/MAE)

EMERGING TRENDS IN ADDITIVE MANUFACTURING FOR MECHANICAL AND AUTOMATION ENGINEERING

Additive Manufacturing (AM), commonly known as 3D printing, is rapidly evolving and playing a crucial role in the fields of mechanical and automation engineering. Emerging trends in AM include the ability to print with multiple materials and integrate functional elements such as sensors directly into components. The range of printable materials is also expanding to include metals, ceramics, and composites, with advanced techniques like Selective Laser Melting (SLM) and Electron Beam Melting (EBM) enabling high-performance applications. Improvements in resolution and surface finish are enhancing the overall quality of printed parts. Moreover, AM is becoming increasingly scalable and integrated into mainstream production processes, with a strong emphasis on sustainability through the use of recycled and bio-based materials. These developments reflect the growing adoption of AM as a viable and transformative manufacturing technology.

FDP CERTIFICATE



Prof.M.MichaelSimonandProf.S.Ananthhascompletedthe Faculty Development Program sucessfully



JOURNALPUBLICATIONS

Dr.M. Thirukumaran, T. Ganapathy, S. Arivuazhagan,P.Senthamaraikannan, K.Senthilkumar, Synergistic effect on the mechanical, thermal, and tribology characteristics of modified natural fibre woven composites with perforated PET, (SCI)

Senthilkumar,Krishnasamy, Sasikumar Ramachandran, G,Swaminathan, Thirukumaran, M, Hybrid glass/Kevlar fiber reinforced phenolic matrix composites: Thermal degradation and flammability studies (SCI)

M. Thirukumaran, Stalin S.R., Michael Simon. M,Senthilkumar R,Bhuvanesh S, Senthilkumar K, Optimizing the parameters of deep cryogenic treatment to enhances the tensile strength and corrosion resistance of rebar,(SCI)

Prof.V.Ramkumar, P.Selvakumar, "Enhanced microstructure, mechanical and tribological properties of γ -methacryloxy-propyl-trimethoxy-silane functionalized palm/cocho/wood/tamarind composite."(SCI)

Prof.S.Ananth, P.Selvakumar, Experimental Investigation of Sand-based Sensible heat energy storage system,(SCI)

M Thirukumaran, G Uthayakumar, T Ganapathy, K Sudhakar,K Durkaieswaran, SR Stalin, Examine the static and dynamic mechanical properties of alkali-treated Cannabis sativa plant fiber-reinforced composites. (SCI)

Prof.S.Ananth, P.Selvakumar, Design Optimization of Sand Based Energy Storage System Using Response SurfaceMethodology. (SCI)

Subbulakshmi A.and Sreenivasan V.S, Unveiling the industrial photocatalytic dye degradation of textile effluents using tailored eco-friendly AgO Nanoparticles (SCOPUS).



Prof.A.Subbulakshmi,AssistantProfessorhas successfully completed the FDP on Ui path Robotics Process AutomationhostedbyGovernmentcollegeofengineering and Technology,Tirunelveli.

NPTELCOURSE- STAFF



Prof.M.Michael Simon , Assistant Professor, has completed theNPTEL online course- Advances in Additive Manufacturing of Materials; Current Status and Emerging Opportunities in Elite Silver Grade.

DEPARTMENT ACTIVITIES

VALUE ADDED COURSES

3D - PRINTING



Department of Mechanical and Automation Engineering organized a 5 days Value-Added Course on "3D Printing" 3D Printing Laboratory-PSNCET. Mr. S. Keerthikumar, Zonal Manager Entudio Pvt Ltd was the resource person. 38 number of students were participated. Mr. S. Keerthikumar delivered the lecture on 3D printing. Program starts with Tamil Thai vazhthu. Our Hod Prof. V. Ramkumar welcomes the student participants. Dr. M. Thirukumar, Associate Professor & Coordinator/delivered vote of thanks. Program ended with National Anthem.

AUTODESK FUSION 360⁰



PSN COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous Institution), Affiliated to Anna University, Chennai
Approved by AICTE, Accredited by NAAC A+ grade in 3rd Cycle
Melathediyoor, Tirunelveli-627152

DEPARTMENT OF MECHANICAL & AUTOMATION ENGINEERING

Organizing
Value Added Course

AUTODESK[®] FUSION 360[™]

OR
"AUTODESK FUSION 360"

Date: 21.01.2025 - 25.01.2025

Course Coordinator
Dr. M. Thirukumar
ASP/MAE
PSNCET

Resource Person
Prof. D. DINESH KUMAR
AP/Dept of MAE
PSNCET

Website- www.psnacet.ac.in



Department of Mechanical and Automation Engineering organized a 5 days Value-Added Course on "AUTODESK FUSION 360" at CADLAB - PSNCET, Prof. D. Dinesh Kumar AP/MAE as a Resource Person. Our Hod Prof. V. Ramkumar welcomes the student participants. Dr. M. Thirukumar, Associate Professor & Coordinator/delivered vote of thanks. Program ended with National Anthem.

VACON "CATIA"



Department of Mechanical and Automation Engineering organized a 5 days Value-Added Course on "CATIA" at CADLAB - PSNCET, Prof. D. Dinesh Kumar AP/MAE as a Resource Person. Our Hod Prof. V. Ramkumar welcomes the student participants. Dr. M. Thirukumar, Associate Professor & Coordinator/delivered vote of thanks. Program ended with National Anthem.

GUEST LECTURE



Prof. K. Sundararajan, HoD, MBA presented the Guest lecture on "Indian Heritage - knowledge based system" to our Mechanical and Automation Engineering Students today at MBA Seminar hall. He gave speech about the Indian heritage diverse cultures, traditions, and historical influences, spanning millennia.

POOJA CELEBRATIONS



YOGAPROGRAM



Mechanical and Automation Staffs and Students Attended Yoga and Meditation program on 28.09.2024 , Resource Person by MANJU PREM,MCKS PRANIC HEALING

BOOT CAMP



Dr.M.Thirukumaran, Associate Professor /MAE and Second Years Students from Department of Mechanical Engineering participated IDE Bootcamp at Ernakulam,Kerala on 17-02-2025.

EXTENSIONACTIVITES



Our Mechanical& Automation EngineeringDepartment has organized an Extension Activity on “Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)” on 28.02.25.

INDUSTRIALVISIT



The Department of Mechanical and Automation Engineering, PSN College of Engineering and Technology staff organized a One Day Industrial visit to Nova Carbon Tech Private Limited, SIPCOT, Gangaikondan on 31-01-2025. The products are Activated carbon; activated natural mineral products; animal black, including spent animal black activated carbon. Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood - cases, boxes, crates, drums and similar packings; cable-drums. Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets and box pallets .

INDUSTRYVISIT



Department of Mechanical and Automation Engineering Staff and Students visited the Family Plastics Pvt, Ltd, Gangaikondan.

STUDENTS



our Students Athirathinam,Manish,NanthaKumar,Tamil Selvam and Manickam has successfully completed NPTEL Online Course with Good Percentage.

CAMPUSCLEANING



Department of Mechanical and Automation Engineering Students involved in Department Campus cleaning on 29-07-2024.

SYMPOSIUM



Department of Mechanical and Automation Engineering Organized National Technical Level Symposium – MASS 2k25

CONFERENCE-PAPERPRESENTATION



Mr. S. ANANTH Assistant Professor, Department of Mechanical and Automation Engineering Presented a paper titled "Optimization and Prediction of seed based sensible energy Storage using as Artificial Neural Network Algorithm" at NIT, Calicut.

MECHANICAL & AUTOMATION ENGINEERING AI & Automation

News

VolumeNo.2

Issue No.1

Date: 10.01.2024 - 28.05.2024



Dr.P.Selvakumar

*Executive Director,
PSNCET*

Dr.V.Manikandan

Principal, PSNCET

Chief Editor:

Mr.V.Ramkumar

*HoD/MAE
PSNCET*

Co Editor:

Mrs.A.Subbulakshmi

*Assistant Professor
MAE/PSNCET*

The Department of Mechanical and Automation Engineering (MAE) was established in the year 2011. Since inception, it functions with the aim of providing inclusive technical education to students from across India, thereby producing responsible citizens, who would contribute to the betterment of their families, Society and the Nation. Automation serves as the foundation for various technological advancements that the world sees today. The field has grown by leaps and bounds. We transform our students into Mechanical& Automation engineers to build the nation.

amounts of data. AI algorithms can analyze data patterns, trends, and correlations to provide valuable insights that can guide informed decision-making. By automating this analytical process, organizations can make quicker, data-driven decisions, which are critical in today's fast-paced and highly competitive business environment.

Cost Reduction and Resource Optimization

Implementing AI automation can lead to significant cost savings by minimizing the need for human intervention in repetitive and time-consuming tasks. This reduction in labor costs, coupled with enhanced operational efficiency, allows organizations to optimize their resources effectively. By reallocating human resources to more strategic tasks and relying on AI for routine operations, businesses can achieve a balance between cost savings and improved overall performance.

Customer Experience and Engagement

AI-powered chat bots and virtual assistants are revolutionizing customer service by providing instant, round-the-clock support. These AI-driven solutions can handle customer inquiries, assist with problem-solving, and guide users through various processes. The seamless integration of AI into customer service not only enhances the overall customer experience but also allows businesses to engage with their audience in a more personalized and efficient manner.

Innovation and Creativity

Contrary to concerns about AI replacing human jobs, it's worth noting that AI automation can actually fuel innovation and creativity. By handling routine tasks, AI liberates human workers to focus on tasks that require creativity, critical thinking, and problem-solving abilities. This symbiotic relationship between humans and AI fosters an environment where innovation can thrive, ultimately driving business growth and development.

AI Automation: Shaping the Future of Work

In the modern era, we find ourselves at the cusp of a technological revolution, with Artificial Intelligence (AI) and automation playing pivotal roles in shaping the future of work. As AI technology continues to advance at an unprecedented pace, its integration into various industries is redefining how we perceive work, productivity, and efficiency. From streamlining operations to enhancing decision-making processes, AI automation is poised to revolutionize the way we conduct business and interact within the professional realm.

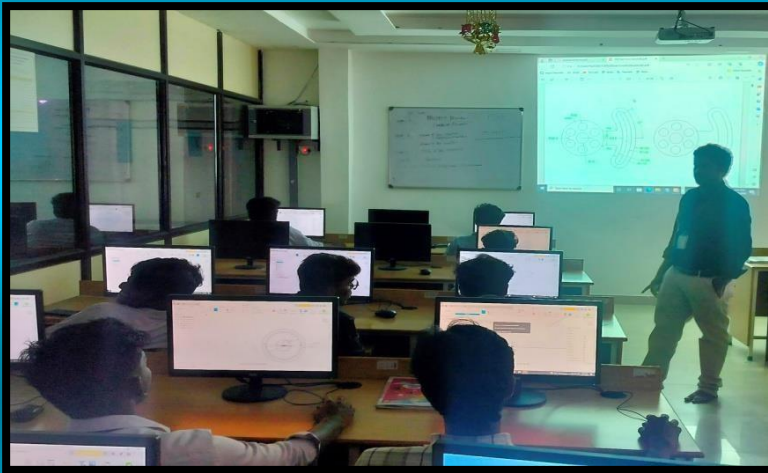
Enhanced Efficiency and Productivity

One of the significant advantages of AI automation is its ability to enhance efficiency and productivity across industries. AI-powered systems can perform repetitive and mundane tasks at a rapid pace, freeing up human resources to focus on more strategic, creative, and complex activities. This enables companies to maximize their output while maintaining high levels of accuracy and precision, ultimately leading to increased productivity and competitiveness in the market.

Data Analysis and Decision Making

Data has become a cornerstone of modern businesses, and AI excels at extracting valuable insights from vast





Department of Mechanical and Automation Engineering, PSN College of Engineering and Technology organized a 35 hours value added course on "AutoCAD Fusion- 360" from 18.01.2024 to 24.01.2024 at CAD lab, MAE – PSNCET. This value added course focused to understand & apply Fundamental commands of Autodesk Fusion 360.

Guest Lecture



Our department organized a guest lecture on February 22, 2024, on the topic "Renewable Energies" for the students of Mechanical and Automation Engineering. Dr. M. Paulraj from the Department of Physics, University of Concepcion, Chile, South America, served as the resource person. He provided insightful knowledge about various types of renewable energies and their benefits. Mr. M. Michael Simon was the faculty coordinator for this guest lecture.



Our department organized an industrial visit on March 16, 2024, to Vinayaga Glass Industries in Gangaikondan, Tirunelveli, for the students of Mechanical and Automation Engineering. The journey began from the college campus at 10:00 a.m. in the college bus. A total of 28 students, accompanied by 2 coordinators, participated in the visit.



Our department organized an industrial visit on March 16, 2024, to Family Plastics in Gangaikondan, Tirunelveli, for the students of Mechanical and Automation Engineering. The journey commenced from the college campus at 10:00 a.m. in the college bus. A total of 28 students, accompanied by 2 coordinators, participated in the visit.





The Department of Mechanical and Automation Engineering organized an industrial visit for third-year students on April 23, 2024, to the **Kudankulam Nuclear Power Plant** in Tirunelveli. Mr. Dinesh Kumar D served as the faculty coordinator for the visit. This visit provided valuable insights into the working of a nuclear power plant for our students.

Election Awareness Campaign



An "Election Awareness Campaign" was organized by the Department of Mechanical and Automation Engineering of PSN College of Engineering and Technology to raise awareness among the public about the importance of voting and its benefits. The program commenced at 10:00 a.m. on April 13, 2024, in Idaiyankulam, Tirunelveli District. Thirty students participated in the event. The campaign began with interactions with the residents of Idaiyankulam Village to promote awareness about voting. The students also created posters and banners highlighting the significance of voting in elections.

Staff Publications

Mr.V.Ramkumar, HOD/MAE, published 1 paper in International conference.

Mrs.A.Subbulakshmi, Assistant Professor, published 1 paper in reputed International Journal.

Staff Participations

Our faculty participated in many Faculty Development Programs, NPTEL courses and Technical seminars in recent topics like surface engineering and nano materials, Trends in Robotics organized by various reputed institutions.

Placement Details

1. Mr.Abdul Mukshid I, placed in Rampal,Vallam,Chennai.
2. Mr.Ajay M, placed in Prestige Cosmopolitan, Guindy, Chennai.
3. Mr.Arun A, placed in ALEP Automation Pvt, Ltd, Perungudi,Chennai.
4. Mr.Arunachalam A, placed in Rampal,Vallam,Chennai.
5. Mr.Gowthaman N, placed in Rampal,Vallam,Chennai.
6. Mr.Karuppasamy C, placed in Accenture,Sollinganallur, Chennai.
7. Mr.Kumaresan S , placed in TAFE, Maraimalar Nagar, Chennai.
8. Mr.Manobalan B, placed in FOXCON,Sriperampudur,Chennai.
9. Mr.Moses Ajay K, placed in Rampal,Vallam,Chennai.
10. Mr.Mohamad Althanish A, placed in Rampal,Vallam,Chennai
11. Mr.Murugan V, placed in Rampal,Vallam,Chennai.
12. Mr.Rakesh M, placed in Prestige Cosmopolitan, Gundy, Chennai.
13. Mr.Sahaya Elcin S, placed in Rampal,Vallam,Chennai.
14. Mr.Shalin Kumar J, placed in Rampal,Vallam,Chennai.
15. Mr.Tamilvanan K , placed in TAFE, Maraimalar Nagar, Chennai.

Department Vision

To originate the department into a centralized learning, teaching and research domain to produce proficient Mechanical and Automation Engineers encapsulated with entrepreneurship skill to compete the modernized automation Industries with their technical knowledge.

Department Mission

DM-1: To develop the student's technical skill to the excel level of Mechanical and Automation engineers by offering standard engineering education by means of excellent teaching methodologies and creating professionalism with their learning

DM-2: To strengthen the student capability of extracting knowledge and prepare them to compete the current scenario in Automated Industries and Research.

DM-3: To amalgamate the technically enriched student to the stream line of Human values, ethics, communication skills, lifelong learning throughout the life and to work as a teamwork as well as individual.

Program Educational Objectives

PEO1- Fundamental Knowledge

To utilize science and engineering principles together with modern tools in solving control and automation engineering problems, design high quality engineering systems, as well as propose implementable solutions for related interdisciplinary problems.

PEO2 - Career Development

To apply cross functional knowledge, modern computational concepts and tools to accommodate changing needs of society.

PEO3- Social Identity

To apply high standards in the performance of their professional work with ethical, societal and environmental awareness

Program Specific Outcomes

PSO1 Ability to understand and perform manufacturing and production systems encapsulated with automation.

PSO2 Ability to carry out mechanical and electronic systems design and coding for robotic applications.

Program Outcomes

PO1 – Engineering Knowledge, **PO2** – Problem Analysis, **PO3**– Design / Development of Solutions, **PO4**– Conduct Investigations of Complex Problems, **PO5**– Modern Tool usage, **PO6**– The Engineer and Society, **PO7**– Environment and Sustainability, **PO8**– Ethics, **PO9**– Individual and Team Work, **PO10**– Individual and Team Work, **PO11**– Project Management and Finance, **PO 12**– Life-long Learning.



Editorial Board Members:

Mr.D.Dinesh kumar,
Assistant Professor/MAE

Mr.P.Vairavadeva
Final year, B.E.,MAE.

Mr.M.Manickam
3rd year, B.E., MAE.



For any suggestions, please contact:

hodma@psncet.ac.in
+91 9003942215