AAA COLLEGE OF ENGINEERING & TECHNOLOGY

Accredited by NAAC with "A" Grade, Accredited by NBA (CIVIL, CSE, ECE, EEE, MECH) (An ISO 21001: 2018 Certified Institution) (Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai) Amathur, Sivakasi - 626 005.

Department of Mechanical Engineering

(Approved research center by Anna Univesity)

NEWS LETTER 2025-2026

June- November 2025 ***Volume No.9***

Industriial visit KNPP



Innovation and Adaptability

The Department of Mechanical Engineering promotes innovation and adaptability through research publications, hands-on training in IoT, Mechatronics and IoT workshops, and technical programmes such as the PISTON-X 2K25 symposium

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Institutions vision mission

VISION OF AAACET

Emerge as a Premier Institute for Quality Technical Education and Research with social responsibilities.

MISSION OF AAACET

- To offer state of the art infrastructure for under graduate, postgraduate and doctoral programs.
- To provide holistic learning ambience blended with professional ethics, leadership qualities and social responsibilities.
- To disseminate knowledge and undertake research in field of Engineering and technology.
- To inculcate innovation and creativity among student community to become successful entrepreneurs.
- To undertake collaborative projects with academic, research centres and industries to provide cost–effective solutions.



Department vision mission

DEPARTMENT VISION

Emerge as an eminent center of excellence in Mechanical Engineering for quality technical education and scientific research leading to social development.

DEPARTMENT MISSION

- To impart quality education to create efficient Mechanical Engineers through eminent faculty.
- To provide the state-of-the art infrastructure to facilitate the cutting-edge research in emerging field of Mechanical Engineering.
- To undertake multidisciplinary and collaborative projects with industries and research organizations.
- To serve the society by developing competent engineers and entrepreneurs with outstanding leadership qualities and moral values.



Sustainable Development Goal

SDG No.	SDG Goal
SDG 1	No Poverty
SDG 2	Zero Hunger
SDG 3	Good Health and Well-being
SDG 4	Quality Education
SDG 5	Gender Equality
SDG 6	Clean Water and Sanitation
SDG 7	Affordable and Clean Energy
SDG 8	Decent Work and Economic Growth
SDG 9	Industry, Innovation and Infrastructure
SDG 10	Reduced Inequalities
SDG 11	Sustainable Cities and Communities
SDG 12	Responsible Consumption and Production
SDG 13	Climate Action
SDG 14	Life Below Water
SDG 15	Life on Land
SDG 16	Peace, Justice and Strong Institutions
SDG 17	Partnerships for the Goals



Program Outcome

PO-1	Engineering knowledge; Apply the knowledge of mathematics, science, engineering fundamentals and Engineering to the solution of complex engineering problems.
PO-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.
PO-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.
PO-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.
PO-5	Modern tool usage - Create, select, and apply appropriate techniques, resources, and modern engineering and computer aided tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO-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.
PO-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.
PO-8	Ethics- Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO-9	Individual and team work - Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO-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.
PO-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.
PO-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 specified Outcome

Program Educational Outcome

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)	
PEO 01	The graduates will possess in-depth knowledge in the field of Mechanical Engineering and have a successful professional career in industry or by becoming an entrepreneur or by pursuing higher education and research.
PEO 02	The graduates will demonstrate profound problem solving skills and improved ability to design, develop economic and environment friendly Mechanical systems for multi-disciplinary societal needs.
PEO 03	The graduates will have ethical attitude and leadership quality to work efficiently with diverse teams, adapt to recent technologies by lifelong learning to solve real life problems.

PROGRAM SPECIFIC OUTCOMES (PSOS) :	
PSO 01	Ability to apply the basic knowledge to identify, formulate and solve problems in the domains of thermal, machine design, manufacturing and industrial engineering.
PSO 02	Ability to provide solutions to complex Mechanical Engineering problems by acquiring technological inputs and managerial skills and utilizing advanced technology with the help of modern CAD/CAM/CAE tools
PSO 03	Ability to develop mechanical and allied products with socio-economic concern by applying innovative ideas under ethical and professional constraints leading to a successful career.

Message from the Principal...



It gives me immense pleasure to present the newsletter of the Department of Mechanical Engineering for the period June 2025 to November 2025, highlighting the academic, research, professional, and co-curricular accomplishments of the department. The newsletter reflects the continuous efforts of the faculty members and students towards innovation, research excellence, technical skill development, and industry-oriented learning. During this period, the department has made notable contributions through research publications, professional development programmes, technical workshops, value-added courses, industrial visits, and student-centric activities. The hands-on training in IoT, Mechatronics and IoT, technical symposiums, and industrial exposure provided students with valuable opportunities to connect theoretical knowledge with practical applications. I appreciate the dedicated efforts of the Head of the Department, faculty members, and students in creating a vibrant learning environment and wish the Department of Mechanical Engineering continued success in its pursuit of academic and professional excellence.

Dr. M. Sekar
Principal



Message from the HoD...



It is my pleasure to present the newsletter of the Department of Mechanical Engineering for the period June 2025 to November 2025, showcasing the achievements and activities of our department. This period reflects our commitment to research, innovation, skill development, and practical learning. Our faculty members contributed through research publications, NPTEL certifications, faculty development programmes, seminars, workshops, and other professional activities. Students actively participated in value-added courses, hands-on IoT training, Mechatronics and IoT workshops, technical symposiums, and industrial visits. The successful organization of PISTONX 2K25 and the industrial visits provided students with meaningful exposure to real-world engineering practices. These activities demonstrate our continuous efforts to bridge the gap between classroom learning and industry requirements. I sincerely appreciate the contributions of our faculty members and students during June–November 2025 and look forward to achieving greater milestones together.

Dr. S. S. Saravanakumar
Professor & Head
Department of Mechanical Engineering

Faculty Achievements

Ph.D. Registration

During June 2025 to November 2025, the Department of Mechanical Engineering recorded notable faculty achievement in research advancement through Ph.D. registration. Mr. A. Vignesh Moorthy Pandian and Mrs. V. S. Lakshmi Priya registered for their Ph.D. programmes at Anna University in July 2025, marking an important step in their academic and research journey

15 SCI/SCIE Journal Publications

The Department of Mechanical Engineering has achieved a significant research milestone with 15 SCI/SCIE-indexed journal publications during 2025. The publications cover diverse research areas including artificial intelligence and machine learning, sustainable composites, surface coatings, tribology, additive manufacturing, advanced materials, corrosion resistance, and thermal performance. This achievement reflects the department's strong research culture and the continuous efforts of its faculty members towards advancing knowledge, innovation, and high-quality research.



Congratulations





Faculty Puplications

P.S. Senthil Maharaj – ASP/Mechanical

S.No.	Paper Title	Impact Factor
1	Artificial intelligence and machine learning-driven design of self-healing biomedical composites	2.8
2	Natural fiber filaments the future of sustainable 3D printing	2.32
3	Performance evaluation of CFRP woven composite pipes: experimental testing and finite element analysis	4.6
4	Microstructural and Corrosion Behavior of Plasma-Sprayed Stellite 6-Coated Selective Laser Melting-Fabricated Inconel 625	2
5	Sustainable Dypsis baronii Fiber Composites for Enhanced Thermal Performance and Corrosion Resistance	1.4
6	Microstructural and functional analysis of PLA-based biofilm reinforced with Sechium edule	8.74
7	Development and analysis of biodegradable PVA biofilms reinforced with Benincasa hispida peel powder for sustainable packaging applications	3.7
8	Microstructural and Thermal Analysis of Plasma-Sprayed Alumina Coating on SLM-Fabricated Titanium Grade 2 Alloy	2

Faculty Puplications

R. Selvabharathi – Professor / HoD / Mechanical

S.No.	Paper Title	Impact Factor
1	Influence of Ni Alloy Content on Ni–BiFeO3 Crystal Pole Phase and Tribology of Laser (Fe–Co–Mn)X–Si–Cr–Mo Claddings Coating by FeCrMnX(0.5) Stainless Steel	3.6
2	Evaluation of epoxy and polyester resin composites with alkali-treated waste bagasse fibers for terrace coating applications	3.7
3	Effects of shot peening and low-heat input nitriding on microstructural and tribo-corrosive properties of selective laser Ti-6Al-2Sn-4Zr-2Mo alloy	1.5
4	Effect on deep cryogenic cycling treatment and combined double-sided laser shock peening with coating of microstructure evolution and mechanical properties of annealing Ti-6Al-4V alloy	1.5
5	Effect of NiFe2O4 Phase and tribological properties on Vacuum plasma spray Cr3C2+25NiCr coating ER 2205 - 66Co26Cr5WC filler high-strength alloy plate fabricated by wire arc additive manufacturing process	6.3

Dr. G. Vairamuthu – ASP/Mechanical

S.No.	Paper Title	Impact Factor
1	Facile synthesis and characterization of chitosan-antimony trioxide Nanocomposite and its thermal properties	2.2

Faculty Puplications

Dr. M. Sekar – Professor / Principal

S.No.	Paper Title	Impact Factor
1	Performance evaluation of CFRP woven composite pipes: experimental testing and finite element analysis	4.6
2	Microstructural characterization and wear behavior of plasma-sprayed Alumina-Titania coated SS 316L via SLM fabrication	2.4

M. Kaliraj – AP(SG)/Mechanical

S.No.	Paper Title	Impact Factor
1	Microstructural characterization and wear behavior of plasma-sprayed Alumina-Titania coated SS 316L via SLM fabrication	2.4
2	Microstructural and functional analysis of PLA-based biofilm reinforced with Sechium edule	8.74
3	Development and analysis of biodegradable PVA biofilms reinforced with Benincasa hispida peel powder for sustainable packaging applications	3.7

Faculty Puplications

P.C. Rajarajan – AP/Mechanical

S.No.	Paper Title	Impact Factor
1	Influence of Ni Alloy Content on Ni–BiFeO3 Crystal Pole Phase and Tribology of Laser (Fe–Co–Mn)X–Si–Cr–Mo Claddings Coating by FeCrMnX(0.5) Stainless Steel	3.6

S. Balamurugan – AP/Mechanical

S.No.	Paper Title	Impact Factor
1	Natural fiber filaments the future of sustainable 3D printing	2.32

M. Nagendran – AP/Mechanical

S.No.	Paper Title	Impact Factor
1	Microstructural characterization and wear behavior of plasma-sprayed Alumina-Titania coated SS 316L via SLM fabrication	2.4

GUEST LECTURE / WORKSHOP DELIVERED BY FACULTY

Dr. G. Vairamuthu – ASP/Mechanical

Dr. G.Vairamuthu, ASP /Mech, of Mechanical Engineering department, shared his knowledge about "How To Write An Article" there are 53 students & 5 faculties were attended on this program, conducted by Department Aeronautical and Aerospace Engineering, Dhanalakshimi Srinivasan Engineering College, Perambalur on 11.08.2025.

NPTEL COURSE COMPLETED BY FACULTY

S.No.	Faculty Name	NPTEL Course	Institution
1	Mr. A. Vignesh Moorthy Pandian	Design Thinking A Primer	IIT Madras
2	Mr. S. Balamurugan	Programming, Data Structures and Algorithms using Python	IIT Madras
3	Mr. M. Nagendran	Engineering Graphics and Design	IIT Madras
4	Mr. S. Balamurugan	Learning Analytics Tools	IIT Madras

NPTEL™



FDP / SEMINARS / WORKSHOPS ATTENDED BY FACULTY



S.No.	Faculty Name	Topic / Programme	Venue / Organizing Institution	Date
1	Dr. G. Vairamuthu, ASP/Mech	Empowering Faculty for Ethical Teaching in Digital Era	DMI Engineering College, Aralvaimozhi & Globethics, South Asia Centre, Bangalore	02.06.2025 to 07.06.2025
2	Dr. R. Meby Selvaray, AP(SG)/Mech	Research Methodology and Effective Teaching Learning Process	Department of Sciences and Humanities & R&D Cell, Greater Kolkata College of Engineering and Management, Bangalore	09.06.2025 to 13.06.2025
3	Dr. G. Vairamuthu, ASP/Mech	AI and Entrepreneurship	BTI Ignite Incubation Council – India in association with Empower Village CIC – United Kingdom	30.07.2025
4	Mr. P. C. Rajarajan, AP/Mech	Growth and Challenges Faced in Indian Space and Defense in Tamil Language	K.L.N. College of Engineering and Technology	25.07.2025 to 26.07.2025
5	Dr. M. Kaliraj, AP(SG)/Mech	Microsoft Power BI – Data Analyst Associate	AAA College of Engineering and Technology	18.08.2025 to 22.08.2025
6	Dr. R. Meby Selvaraj, AP(SG)/Mechl	Google Gemini Academy 2025	Google Gemini Academy	08.10.2025
7	Mr. S. Balamurugan, AP/Mech	Google Gemini Academy 2025	Google Gemini Academy	08.10.2025
8	Mr. P. C. Rajarajan, AP/Mech.	Fusion for Future-Ready Classrooms	Autodesk Authorized Training Center, Thiagarajar Engineering College, Madurai	04.09.2025 to 06.09.2025









FDP / SEMINARS / WORKSHOPS ATTENDED BY FACULTY



S.No.	Faculty Name	Topic / Programme	Venue / Organizing Institution	Date
9	Mr. P. C. Rajarajan, AP/Mechanical	Empowering Documents with AI	Department of Technical Education, Government Polytechnic College, Kamalapuram	26.10.2025
10	Dr. G. Vairamuthu, ASP/Mechanical	IIC Regional Meet 2025	Francis Xavier Engineering College, Tirunelveli	02.12.2025
11	Mr. M. Karthikeyan, AP/Mechanical	Sustainable Innovative Techniques for Better Future	Department of Mechanical Engineering, K.L.N. College of Engineering, Pottapalayam	22.12.2025 to 27.12.2025
12	Mr. A. Vignesh Moorthy Pandian, AP/Mechanical	Innovative Pedagogies for Outcome-Based Teaching and Learning	National Institute of Technical Teachers Training and Research, Chennai & AAA College of Engineering and Technology, Sivakasi	22.12.2025 to 27.12.2025
13	Mr. V. S. Lakshmi Priya, AP/Mechanical	Innovative Pedagogies for Outcome-Based Teaching and Learning	National Institute of Technical Teachers Training and Research, Chennai & AAA College of Engineering and Technology, Sivakasi	22.12.2025 to 27.12.2025
14	Mr. V. S. Chakravarthy, AP/Mechanical	Innovative Pedagogies for Outcome-Based Teaching and Learning	National Institute of Technical Teachers Training and Research, Chennai & AAA College of Engineering and Technology, Sivakasi	22.12.2025 to 27.12.2025



FACULTY DEVELOPMENT PROGRAM



KNOWLEDGE DELIVERY AT VARIOUS DEPARTMENTS

PC ESSENTIAL

The Department of Mechanical Engineering, AAACET successfully conducted a five-day value added course titled “PC ESSENTIAL” from 21st July 2025 to 25th July 2025. This event was held in association with I Tech Academy, Tirunelveli and was attended by 42 students from the 2nd year of the Mechanical Engineering program.









KNOWLEDGE DELIVERY AT VARIOUS DEPARTMENTS

Hands on Training in IoT

A Hands-on Training in IoT was organized by the Department of Mechanical Engineering, AAA College of Engineering and Technology, Amathur, Sivakasi, from 01.09.2025 to 03.09.2025, under the guidance of Dr. R. Selvabharathi, Head of the Department, and Course Coordinators Mr. A. Vignesh Moorthy Pandian and Mr. M. Nagendran. The session was conducted by Mr. M. S. Kalyana Sundaram, M.E., (Ph.D.), Assistant Professor, Department of EEE, and Coordinator – Centre of IIoT, AAACET, who served as the resource person. The training aimed to bridge theoretical knowledge with practical industrial applications in the field of the Internet of Things (IoT). During the three-day program, students gained valuable insights into IoT architecture, sensor integration, Arduino and Node MCU platforms, and IoT cloud services such as ThingSpeak and Blynk. Participants also developed 16 IoT-based mini projects, demonstrating their innovation and technical skills. A total of 56 students and 4 faculty members participated in the event, which concluded with a valedictory session appreciating the participants' enthusiasm and the resource person's expert guidance.



KNOWLEDGE DELIVERY AT VARIOUS DEPARTMENTS

Mechatronics and IoT

The Department of Mechanical Engineering, AAA College of Engineering and Technology, Amathur, organized a three-day workshop on "Mechatronics and IoT" from 09.10.2025 to 11.10.2025 at Sir Visvesvaraya Hall, Oxford Block, under the guidance of Dr. R. Selvabharathi, Head of the Department. The session was handled by Mr. P. Kalyanasundaram, M.E., (Ph.D.), Assistant Professor, Department of EEE, who served as the resource person, providing valuable insights into embedded systems, microcontrollers, and IoT integration for smart applications. The program was coordinated by Mr. M. Nagendran and Mr. A. Vignesh Moorthy Pandian, Assistant Professors of Mechanical Engineering. A total of 49 final-year Mechanical Engineering students participated and gained practical exposure to sensor interfacing, automation, and cloud connectivity. The workshop enhanced their technical knowledge and innovative skills in applying Mechatronics and IoT concepts for real-time industrial solutions.









KNOWLEDGE DELIVERY AT VARIOUS DEPARTMENTS

Symposium PISTON X 2K25

The National Level Technical Symposium "PISTONX 2K25" was organized by the Department of Mechanical Engineering at AAA College of Engineering and Technology, Sivakasi, on October 24, 2025, with Mr. S. Dineshchokkaiyan, Senior Engineer at Tata Electronics, Hosur, serving as the resource person and delivering the keynote address on Production Planning and Control in Mechanical Engineering; the event saw enthusiastic participation from over 52 students representing various engineering and polytechnic colleges, and was meticulously coordinated by faculty members Mr. M. Karthikeyan, Mr. S. Balamurugan, Mrs. V. S. Lakshmipriya, and student coordinators S. Ezhilarasan and L. Sudhakar, ensuring successful conduct and the distribution of certificates and prizes to all participants and winners









KNOWLEDGE DELIVERY AT VARIOUS DEPARTMENTS

Fusion Software

The Department of Mechanical Engineering conducted a Three Days Faculty Development Programme (FDP) on "Fusion Software" from 27th to 29th October 2025 at the CAD/CAM Laboratory, with sessions running from 9:00 AM to 5:00 PM; Mr. Harish M, Application Engineer from USAM CADSOFT, Coimbatore, served as the trainer, and the programme was organized by Mr. P. C. Rajarajan, Assistant Professor of Mechanical Engineering. The FDP, held in association with Anna University, Autodesk, and USAM CADSOFT, aimed to provide participating faculty members with enhanced knowledge and hands-on experience in Autodesk Fusion 360, focusing on 3D modeling, simulation, and manufacturing integration, and successfully invited active participation from all interested faculty members.





INDUSTRIAL VISITS

Kaka Indian Foundry & Devendra Plastic Company,

Mechanical Engineering Department of II Year visited Kaka Indian Foundry, Sivakasi and Devendra Plastic Company, Sivakasi as part of their one-day industrial visit. A total of 45 students and 3 faculty members participated in this event. The visit provided an opportunity to explore real-world applications of casting operations, mould preparation, finishing processes, plastic moulding techniques, material handling, and quality control. The sessions at the two industries covered various aspects of industrial workflow, safety measures, and productivity improvement methods. Experts demonstrated metal casting procedures, moulding techniques, quality inspection processes, and safety protocols, offering valuable insights into manufacturing best practices. The exposure also motivated students to consider entrepreneurship opportunities in the manufacturing sector.





INDUSTRIAL VISITS

Kudankulam Nuclear Power Project (KKNPP)

The Department of Mechanical Engineering, AAA College of Engineering and Technology, Amathur, organized an Industrial Visit to the Kudankulam Nuclear Power Project (KKNPP), Tirunelveli, on 23rd October 2025 for the III Year Mechanical Engineering students (Batch 2023–2027) under the guidance of Dr. R. Selvabharathi, Head of the Department, and accompanied by Mr. A. Vignesh Moorthy Pandian, Mr. M. Balamurugan, and Mr. M. Nagendran, Assistant Professors of Mechanical Engineering. A total of 56 students participated in the visit, gaining practical exposure to nuclear power generation, reactor operations, and safety systems. The visit provided valuable insights into advanced power plant technologies and real-time industrial practices, bridging the gap between theoretical learning and industry application.







Editorial board



Role	Name	Designation
Editors	Dr.S.S.Saravanakumar	Professor/ Head
Associate Editors	Mr.M.Nagendra	AP/Mechanical
	Mr.A.Vignesh Moorthy Pandian	AP/Mechanical
Student Members	R. Arunkarthi	IV - Mech
	S.Sathishkumar	III-Mech
	R.Premkumar	II- Mech

IN THE PRESENCE OF

Dr. P. Karvannan
Chairman & Secretary

Dr. P. Ganesan
Correspondent

Dr. M. Sekar
Principal

Dr. K. Vignesh Kumar
Joint Secretary

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