ROHINI
COLLEGE OF ENGINEERING & TECHNOLOGY

Approved by AICTE and Affiliated to Anna University (An ISO Certified Institution) | Accredited with A+ Grade by NAAC
Recognized under Section 2(f) of University Grants Commission, UGC ACT 1956
(AUTONOMOUS)

DEPARTMENT OF MECHANICAL ENGINEERING

MECHTRON'25

2025-2026

Annual Technical Magazine

VOL 1 . ISSUE 1

MECHANICAL ENGINEERING ASSOCIATION

ROHINI
COLLEGE OF ENGINEERING & TECHNOLOGY

Approved by AICTE and Affiliated to Anna University (An ISO Certified Institution) | Accredited with A+ Grade by NAAC
Recognized under Section 2(f) of University Grants Commission, UGC ACT 1956
(AUTONOMOUS)

MECHTRON 2K25 (2025-2026)

ANNUAL TECHNICAL MAGAZINE
DEPARTMENT OF MECHANICAL ENGINEERING

MECHTRON 2K25
2025-2026

MECHTRON 2k25 is an annual magazine, brought out by Rohini College of Engineering & Technology, Kanyakumari. The articles published are copy-righted. If you have any queries or feedback, address them to mechtron2k25@gmail.com

Address:
ROHINI College of Engineering &Technology
Near Anjugramam Junction, Kanyakumari Main Road,
Palkulam, Kanyakumari - 629 401
Tamilnadu,India.

Phone: **04652 - 266665**
Email: **admin@rcet.org.in**
Website: **www.rcet.org.in**

Message from Chairman

"Education is for improving the lives of others and for leaving your community and world"

It is a great pleasure and honor for me to address you all through the website of ROHINI College of Engineering & Technology. It is heartening to witness that the college has earned a respected place in the academic landscape of our region. Education is the most powerful tool to bring positive changes in our personality and society. It is the only medium that enables us to move from darkness to brightness.

Dear friends, I firmly believe there is no better way to promote our nation's prosperity and socio-economic well-being than through a strong education system. Technocrats play a vital role in driving the country's economic and technological progress.

I urge you all to focus on your overall development. Your education must always be combined with morality and ethics. This responsibility lies with academicians who must provide value-based education. Remember, "honesty is the first chapter in the book of wisdom." We should inculcate honesty and integrity in everything we do.

I sincerely hope that my esteemed teachers and budding technocrats will work with dedication, sincerity, and honesty, contributing to making this world a better place to live.

Shri. K. NEELA MARTHANDAN
Chairman
Rohini Groups

Message from Principal

We make Technocrats, who proudly say, 'I am an Engineer; I serve mankind, by making dreams come true.'

The major challenge for today's engineering institutions is to meet the changing aspirations of the younger generation in response to rapid industrial growth. At Rohini College of Engineering and Technology, we constantly align academics with industry needs through innovative and practical-oriented teaching. Our goal is to mould students into competent and value-driven professionals. This issue of the Mechanical Department magazine, 'MECHTRON' 2K25, highlights our ongoing efforts, achievements, and innovations.

Our approach focuses on outcome-based education and hands-on experience through research, training, and student forums. Dedicated faculty ensure quality learning and continuous improvement, preparing students for successful careers and higher studies in India and abroad. A strong research culture and focus on development have made RCET a centre of academic excellence.

Our placement and university results speak for our success, with many students excelling in various fields. We extend our best wishes to all students and faculty for continued growth, creativity, and achievement.

Dr. R. RAJESH, M.E., Ph.D.
Principal
Rohini College of Engineering &Technology

Message from Head of Department

Mechanical Engineering is one of the oldest and broadest engineering disciplines, playing a vital role in enhancing safety, economic growth, and overall quality of life worldwide. Development is driven by progress, which is directly linked to a nation's productivity. A warm and green greeting from the Department of Mechanical Engineering at RCET! The college has shown unstoppable progress through various activities that highlight the talents of both students and staff.

Mechanical Engineering, a core professional discipline, deals with the design, production, and maintenance of systems across all industries. Our department comprises highly qualified and experienced faculty, supported by excellent infrastructure and laboratory facilities. We are committed to continuously improving the quality of education and maintaining leadership in engineering and technology.

We are proud to present our departmental magazine, Mechtron2k25, which reflects our achievements and innovative spirit. Our faculty and students actively engage in research, seminars, and conferences, ensuring growth and excellence. We believe our graduates will continue to be valuable contributors to the nation's progress.

Dr. S. KAILAINATHAN M.E., Ph.D.
Head Of Department
Rohini College of Engineering & Technology

Message from Editor

It gives us great pleasure to bring you the 'MECHTRON'2K25 ,the Mechanical department technical magazine of Rohini College of Engineering and Technology. The objective of the magazine is to mainly focus on Achievement of the students from the Mechanical Engineering department in the Co-curricular and Extra-Curricular Activities The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This magazine is a platform to exhibit the literary skills and innovative ideas of teachers and students 'MECHTRON'2K25 presents the skills and innovative thinking of students and contributions of teachers We are also thankful to our Management and Principal for their support and encouragement.. Last but not the least we are thankful to all the authors who have sent their articles. We truly hope that the pages that follow will make an interesting read.

Mr. R. DAVID M.E.
Asst. prof./ Mechanical Engineering
Editor of Department Magazine
Rohini College of Engineering & Technology

About the College

Rohini College of Engineering and Technology – Best Engineering College in Kanyakumari is an ISO-certified institution, accredited with A+ Grade by NAAC and has received NBA accreditation for its BE programs in Electrical & Electronics Engineering, Electronics & Communication Engineering and Mechanical Engineering. The institution was founded by renowned industrialist and philanthropist, Shri K. Neela Marthandan, RCET is committed to offering advanced engineering knowledge and shaping the future of engineering education and practice.

As the Best Engineering College in Nagercoil, Kanyakumari District, RCET emphasizes not only fostering academic excellence but also focuses on character development by instilling strong moral and ethical values. Since its establishment, RCET has been committed to providing world-class facilities and infrastructure to create a dynamic learning environment. RCET emphasises is on transformational leadership rather than directional leadership. We aim to establish new trends, introduce innovative training methodologies and thus guide students towards the road to success.

Vision

To be an academic institute of continuous excellence towards education and research in rural regime and provide service to nation in terms of nurturing potentially higher social,ethical and engineering companion graduands.

Mission

- To foster and promote technically competent graduands by imparting the state of art Engineering education in rural regime.
- To enunciate research assisted scientific learning by dissemination of knowledge towards science, agriculture, industry and national security.

About the Department

The Department of Mechanical Engineering started in the year 2012 with an initial intake of 60 students to the B.E Program and increased to an intake of 120 students from 2013 and 180 students from 2014. The Department offers ME - Thermal Engineering programme from 2015, ME - Industrial Safety Engineering with an intake of 24 students. The Department is a recognized research centre by Anna University Chennai from the year 2019. The Department is Accredited by National Board of Accreditation from the year 2024. The department accomplish outcome Based Education which help the students to learn, develop and serve to the society. The Department has experienced and dedicated faculty with a wide range of specialization namely Thermal Engineering, Engineering Design, Manufacturing Engineering, Energy Engineering, CAD/CAM, Industrial Engineering and Mechatronics.

The faculty members have published more than 100 papers in National/International journals/Conference and had written books, filed patterns during the last 3 years and received many awards. The students were motivated by providing lot of opportunities like technical presentation in Symposium, conferences for skill development. The department provide value added knowledge to under graduates and post graduate students. Apart from curriculum students were motivated to participate in sports. The department has well established laboratory facilities to conduct research work on different specialized areas like Material Science, Renewable Energy, Thermal Science. The students of the department have received external research funding from Tamil Nadu State council for Science and technology in recent years. The students of the departments have joined in reputed industries through placements and some of them are turned to be an entrepreneur. The department has a good network of alumni.

Department Vision: Mechanical Engineering

To inculcate competence in the field of mechanical engineering for the students by providing quality education and learning opportunities to become ethically strong engineers for the development of society.

Department Mission: Mechanical Engineering

- To provide fundamentals and technical skills in Mechanical Engineering through effective teaching-learning methodologies.
- To provide an ambience for research through collaborations with industry and academia.
- To inculcate the students' leadership quality through employability skills with ethical values.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO's)

PEO: 1

Graduates will apply the knowledge of Mechanical Engineering concepts and innovative methods to solve real world Engineering problems.

PEO: 2

Graduates will have the required qualities for a successful career in Mechanical Engineering and related fields.

PEO: 3

Graduates will exhibit the professional skills with ethical values, communication skills and team spirit.

PROGRAMME SPECIFIC OBJECTIVES (PSO's)

PSO: 1

Graduates of the program will achieve optimized design by utilizing their knowledge in thermal engineering, material science, manufacturing, fluid.

PSO: 2

Graduates will be able to analyse and interpret by using modern tools and provide solutions to real time mechanical engineering and related problems.

PSO: 3

Graduates will learn managerial skills to work effectively in a team and are aware of the impact of professional engineering solutions in human community, environmental context, ethics and be able to communicate effectively.

STUDENTS ARTICLE

Engineering the Future Layer by Layer: The Rise of Additive Manufacturing

Abstract:

Additive Manufacturing (AM), popularly known as 3D Printing, is no longer just a rapid prototyping tool — it has evolved into a transformative technology redefining the boundaries of mechanical design, production, and sustainability. This article explores the emerging frontiers of additive manufacturing and highlights how mechanical engineers are reshaping the future of industrial innovation through intelligent design, sustainable materials, and digital integration.

Introduction:

In traditional manufacturing, complexity often equals cost. But in additive manufacturing, complexity is free. This paradigm shift enables engineers to fabricate geometries that were once considered impossible — intricate lattices, lightweight components, and multi-functional assemblies — all built layer by layer. The transition from "subtractive" to "additive" thinking symbolizes not just a change in process, but a revolution in engineering philosophy.

The Core Principle:

Additive manufacturing constructs components by depositing material sequentially based on digital 3D models. Techniques such as Fused Deposition Modeling (FDM), Selective Laser Melting (SLM), Stereolithography (SLA), and Electron Beam Melting (EBM) are widely used, each suitable for different materials ranging from polymers to metals. What makes AM unique is its ability to integrate design freedom, functional performance, and sustainability in one seamless workflow.

Emerging Trends in Additive Manufacturing:

1.Volumetric and Multi-Axis Printing

Next-generation printers are evolving beyond layer-by-layer techniques. Volumetric and multi-axis deposition systems now fabricate complex curved geometries in a single process, eliminating support structures and improving mechanical strength.

2. Functionally Graded Materials

Future AM processes enable composition gradients within a single part — transitioning from hard to soft or conductive to insulative zones. This innovation allows a single component to perform multiple functions, enhancing durability and reducing assembly needs.

3. Hybrid Manufacturing

Combining additive and subtractive operations in the same machine bridges the gap between accuracy and creativity. A part can be printed and immediately machined or polished, drastically reducing production time and improving surface finish.

4. Artificial Intelligence Integration

AI-driven monitoring systems use sensors to track layer temperature, distortion, and porosity during printing. These digital twins predict and correct defects in real time, ensuring repeatability and quality control — essential for aerospace, defense, and biomedical applications.

5. 4D Printing and Smart Materials

4D printing introduces time as a design dimension. Parts are engineered to change shape or function in response to stimuli like heat, moisture, or load — ideal for adaptive structures, aerospace morphing surfaces, and self-deploying components.

Sustainability and Circular Manufacturing:

Additive manufacturing minimizes material waste, but the true sustainability lies in its integration with circular design principles. Engineers are exploring recycled metal powders, bio-based polymers, and closed-loop material cycles. Moreover, designing for easy repair and recycling ensures that AM parts contribute to a sustainable manufacturing ecosystem.

Challenges and Research Directions:

While AM is revolutionary, key challenges persist Residual stress and warping during solidification. High energy demand for laser-based metal printing. Lack of standardization in testing and certification. Post-processing complexities for surface refinement and mechanical finishing.

The Road Ahead:

Mechanical engineers stand at the intersection of creativity and computation. Mastering additive manufacturing requires not just technical knowledge, but digital design intelligence — the ability to co-design structure, process, and material behavior. As industries embrace smart factories, AM will play a central role in on-demand production, customized components, and sustainable design frameworks.

Conclusion:

Additive Manufacturing is not merely a tool; it is an evolving ecosystem that merges design freedom, intelligent automation, and environmental responsibility. As technology continues to mature, it will empower engineers to create components that are not only efficient but adaptive, resilient, and sustainable — truly embodying the future of mechanical engineering.

Sajin Raj T
3rd Year

Cryogenic Propulsion: The Cold Power Behind Space Exploration

Abstract:

Cryogenic engines have revolutionized aerospace propulsion by enabling launch vehicles to achieve higher efficiency, greater payload capacity, and extended mission range. These engines operate using cryogenic propellants—liquids stored at extremely low temperatures—such as liquid hydrogen (LH_2) and liquid oxygen (LOX). Their high specific impulse makes them a preferred choice for upper stages of space launch vehicles. This article explores the working principles, design challenges, applications, and future prospects of cryogenic engines in aerospace.

Introduction:

The advancement of space technology has largely depended on the continuous improvement of propulsion systems. Among these, cryogenic engines represent a milestone in rocket propulsion engineering. The term "cryogenic" refers to the use of substances at very low temperatures—below −150°C. Cryogenic engines use these ultra-cold fuels and oxidizers to generate enormous thrust, enabling spacecraft to reach orbit efficiently.

Unlike conventional engines that rely on storable liquid or solid propellants, cryogenic engines provide superior performance due to the high energy release of hydrogen and oxygen combustion. The development of such engines marks a crucial step toward achieving reusable, reliable, and cost-effective space missions.

Principle of Operation:

A cryogenic engine functions based on Newton's Third Law of Motion, where high-speed ejection of combustion gases produces an equal and opposite thrust. The key propellants—liquid hydrogen (fuel) and liquid oxygen (oxidizer)—are stored separately in insulated tanks at temperatures of about −253°C and −183°C respectively.

When ignited in the combustion chamber, these propellants react violently, forming superheated water vapor and releasing tremendous energy. The expanding gases pass through a turbine-driven nozzle, producing thrust. The cycle typically follows one of the following configurations:

- Gas Generator Cycle
- Expander Cycle
- Staged Combustion Cycle

Each cycle has trade-offs between efficiency, complexity, and thrust output.

Key Components:

1. Fuel and Oxidizer Tanks: Heavily insulated containers that maintain cryogenic temperatures.
2. Turbo Pumps: Compress the propellants before combustion, ensuring proper mixing and pressure.
3. Combustion Chamber: Where the fuel and oxidizer mix and burn to produce high-temperature gases.
4. Nozzle: Converts thermal energy into kinetic energy to generate thrust.
5. Cooling System: Prevents structural damage by circulating cryogenic fuel around the engine walls.

Advantages:

- High Specific Impulse: Offers higher efficiency compared to solid or storable liquid propellants.
- Cleaner Combustion: Produces mainly water vapor, reducing environmental impact.
- Enhanced Payload Capacity: Enables heavier satellites or spacecraft to be launched into higher orbits.
- Improved Reusability: Suitable for reusable launch vehicle designs due to efficient fuel use.

Challenges:

Despite its advantages, cryogenic technology poses several engineering difficulties:

1. Fuel Storage and Handling: Maintaining extremely low temperatures demands advanced insulation and ground support systems.
2. Complex Manufacturing: Precision engineering is required to prevent leakage and maintain reliability under high pressure.
3. Delayed Ignition: Hydrogen's low density makes engine ignition and control complex.
4. High Development Cost: Research, testing, and material requirements are expensive and time-intensive

Applications in Aerospace:

Cryogenic engines are primarily used in upper stages of launch vehicles, where efficiency is crucial.

1. NASA's Space Launch System (SLS) and Saturn V employed cryogenic stages for deep space missions.
2. European Ariane 5 uses the Vulcain engine, a cryogenic propulsion system.
3. India's GSLV (Geosynchronous Satellite Launch Vehicle) incorporates the CE-20 cryogenic engine, developed indigenously by ISRO.

Future Prospects:

Emerging trends focus on improving reusability, additive manufacturing (3D printing) for components, and hybrid propulsion systems that combine cryogenic and electric propulsion. Future cryogenic engines may use new propellants such as liquid methane, offering easier storage and handling compared to hydrogen. Furthermore, reusable cryogenic engines will play a key role in missions to the Moon, Mars, and beyond.

Conclusion:

Cryogenic engines represent the pinnacle of rocket propulsion technology, merging efficiency, power, and sustainability. Despite their technical challenges, they remain essential for future space exploration and commercial satellite launches. Continued innovation in materials, cooling techniques, and manufacturing will further enhance their reliability and affordability, shaping the next era of aerospace advancement.

Vasanthakumar N

3rd Year

Smart Mechanisms: The Role of IoT in Modern Mechanical System

Abstract:

The Internet of Things (IoT) has revolutionized the way machines, systems, and people interact. By integrating sensors, actuators, and network connectivity into mechanical systems, IoT enables real-time monitoring, predictive maintenance, automation, and data-driven decision-making. In mechanical engineering, IoT is reshaping traditional design, manufacturing, and maintenance processes, leading to smarter and more efficient mechanical systems.

Introduction:

Mechanical engineering has long been at the forefront of industrial innovation. However, the recent fusion of mechanical systems with digital technologies—particularly the Internet of Things (IoT)—has opened a new era known as Industry 4.0. IoT connects physical devices through the internet, allowing them to collect and exchange data. This connectivity enables mechanical engineers to create intelligent machines capable of self-monitoring, communication, and optimization.

IoT Integration in Mechanical Systems:

IoT in mechanical engineering involves embedding smart sensors and controllers into machines and equipment. These sensors continuously gather data such as temperature, pressure, vibration, and energy consumption. The collected data is transmitted to a cloud-based platform where it is analyzed for performance insights and fault detection.

Key IoT components in mechanical systems include:

- Sensors: Measure physical parameters (temperature, strain, pressure, etc.)
- Actuators: Perform mechanical actions based on digital commands
- Microcontrollers and Gateways: Process and transmit data
- Cloud Platforms: Store and analyze large datasets
- User Interfaces: Enable engineers to monitor and control systems remotely.

Applications of IoT in Mechanical Engineering:

Predictive Maintenance:

IoT enables early detection of mechanical failures by analyzing real-time data from sensors. For instance, vibration sensors in rotating machines can detect bearing wear before a breakdown occurs, reducing downtime and maintenance costs.

Smart Manufacturing:

In smart factories, IoT-connected machines communicate with each other to optimize production. Automated control systems adjust parameters for maximum efficiency and minimal waste.

Energy Management:

IoT-based monitoring systems track energy usage in mechanical systems such as HVAC units, pumps, and motors. This helps in identifying inefficiencies and implementing energy-saving measures.

Automotive and Robotics:

IoT plays a vital role in autonomous vehicles and robotic systems. Real-time communication between sensors, controllers, and cloud platforms enables adaptive decision-making and enhanced performance.

Advantages of IoT in Mechanical Engineering:

1. Real-time monitoring and control of mechanical systems.
2. Increased operational efficiency and productivity.
3. Reduced equipment downtime through predictive maintenance.
4. Enhanced product quality and performance optimisation.
5. Improved safety through automated alerts and fault detection.

Challenges:

1. Data security and privacy concerns
2. Integration with legacy mechanical systems
3. High implementation and maintenance costs
4. Requirement for skilled personnel in data analytics and IoT systems

Future Scope:

The future of IoT in mechanical engineering lies in the development of Digital Twins, Edge Computing, and AI-driven analytics. These technologies will enable real-time simulation, faster decision-making, and deeper insights into system behavior. As connectivity improves and sensor costs drop, IoT will become an integral part of every mechanical system—from design to disposal.

Conclusion:

IoT is transforming mechanical engineering by merging physical machinery with digital intelligence. The ability to monitor, analyze, and optimize mechanical systems in real time leads to smarter designs, improved efficiency, and sustainable operations. As mechanical engineers embrace IoT, they are shaping a new generation of intelligent, connected, and efficient machines that define the future of engineering.

Ransem Agnel J

3rd Year

Renewable Energy Systems and Mechanical Engineering

Abstract:

In the era of industrial growth and technological advancement, the demand for energy continues to rise exponentially. Traditional energy sources such as coal, oil, and natural gas are finite and contribute heavily to global warming and environmental degradation. Renewable energy systems offer a sustainable alternative by harnessing natural and replenishable resources like sunlight, wind, water, and biomass. Mechanical engineering plays a crucial role in the development, optimization, and implementation of these renewable systems. This article explores how mechanical engineers contribute to improving energy efficiency, reducing emissions, and creating innovative energy conversion technologies that ensure a sustainable future.

Introduction:

Energy drives the world's economy and underpins every aspect of human life, from transportation to manufacturing and communication. However, the heavy reliance on non-renewable fossil fuels has resulted in alarming levels of pollution and a drastic rise in global temperatures. The transition to renewable energy systems has therefore become a global necessity rather than a choice.

Mechanical Engineering applies fundamental principles of thermodynamics, fluid dynamics, heat transfer, and material science to design efficient systems for energy generation and storage. Mechanical engineers are instrumental in creating the machines, components, and processes that convert natural energy into usable power.

Role of Mechanical Engineering in Renewable Energy Systems

1. Solar Energy

Solar energy is one of the most abundant renewable resources on Earth. Mechanical engineers are responsible for designing and developing solar collectors, photovoltaic (PV) panels, and concentrated solar power (CSP) systems. The optimization of thermal storage, heat exchangers, and solar tracking mechanisms ensures maximum energy capture and conversion efficiency. Engineers also work on improving cooling systems for PV panels, as excessive heat can reduce their efficiency. Innovations such as parabolic troughs, solar towers, and evacuated tube collectors demonstrate the crucial role of mechanical design in solar energy utilization.

2. Wind Energy

Wind energy harnesses the kinetic energy of moving air to generate electricity using wind turbines. The design and efficiency of wind turbines depend heavily on mechanical engineering principles. Engineers analyze blade aerodynamics, material selection, and rotor dynamics to ensure stability and performance even under variable wind conditions.

Mechanical engineers also focus on the development of gearboxes, bearings, and generators to minimize energy losses and extend the lifespan of wind turbines. Offshore wind energy systems, which operate in harsh marine environments, require advanced mechanical solutions for corrosion resistance and structural integrity.

3. Hydro power

Hydro power converts the potential energy of water into mechanical and then electrical energy using turbines. Mechanical engineers design turbines such as Pelton, Francis, and Kaplan types based on site conditions and flow rates. Their expertise ensures efficient energy extraction with minimal mechanical wear and environmental impact.

Additionally, engineers are involved in maintaining the efficiency of pumps, valves, and other hydraulic components. Modern innovations such as micro-hydropower plants and tidal energy systems further demonstrate the evolving role of mechanical engineering in the water energy sector.

4. Biomass and Bioenergy

Biomass energy utilizes organic materials like agricultural residues, wood, and waste to produce heat or electricity. Mechanical engineers design gasifiers, biogas digesters, and combustion systems that convert biomass into usable energy. The process involves mechanical design for efficient combustion, heat recovery, and emission control.

Furthermore, engineers are working on improving the efficiency of combined heat and power (CHP) systems that use biomass, reducing the carbon footprint while enhancing energy output.

Challenges in Renewable Energy Systems:

Despite their potential, renewable energy systems face several challenges that hinder large-scale adoption and consistent performance.

Intermittency of Supply: Solar and wind energy depend on weather conditions and time of day, leading to inconsistent power generation.

Energy Storage Limitations: Efficient and cost-effective storage technologies are still in development. Mechanical engineers are researching advanced systems like flywheels and compressed air storage to address this issue.

High Initial Costs: Setting up renewable energy systems, especially wind farms and solar power plants, involves significant capital investment.

Maintenance and Durability: Renewable energy systems often operate in harsh environments (such as offshore wind farms), leading to wear, corrosion, and maintenance challenges.

Grid Integration: Integrating variable renewable energy sources into existing power grids without affecting stability remains complex and requires advanced mechanical-electrical coordination.

Future Prospects:

The future of renewable energy systems is bright and full of opportunities for mechanical engineers. As technology advances, the integration of smart technologies and IoT (Internet of Things) will enable real-time monitoring, predictive maintenance, and improved system efficiency. Engineers are increasingly employing artificial intelligence (AI) and data analytics to predict energy demand and optimize generation.

Hybrid energy systems, which combine solar, wind, and biomass power, are being developed to ensure continuous and reliable energy supply. Research in advanced materials such as composites and lightweight alloys is also improving the strength, durability, and efficiency of turbines, heat exchangers, and energy storage devices.

Moreover, innovations in 3D printing and additive manufacturing are allowing mechanical engineers to produce complex components with higher precision and lower waste. The focus on sustainable design and life-cycle assessment ensures that renewable energy systems not only generate clean power but also have minimal environmental impact throughout their lifespan.

Conclusion:

Mechanical engineering stands as a cornerstone in the evolution of renewable energy technologies. From the design of solar collectors and wind turbines to the development of efficient hydropower and biomass systems, mechanical engineers play a central role in shaping a cleaner and more sustainable energy landscape. The future of renewable energy depends on continued innovation, interdisciplinary collaboration, and a commitment to reducing environmental impact.

By integrating mechanical expertise with digital intelligence and sustainable design, engineers are paving the way toward a greener, more energy-secure planet.

Aswin J

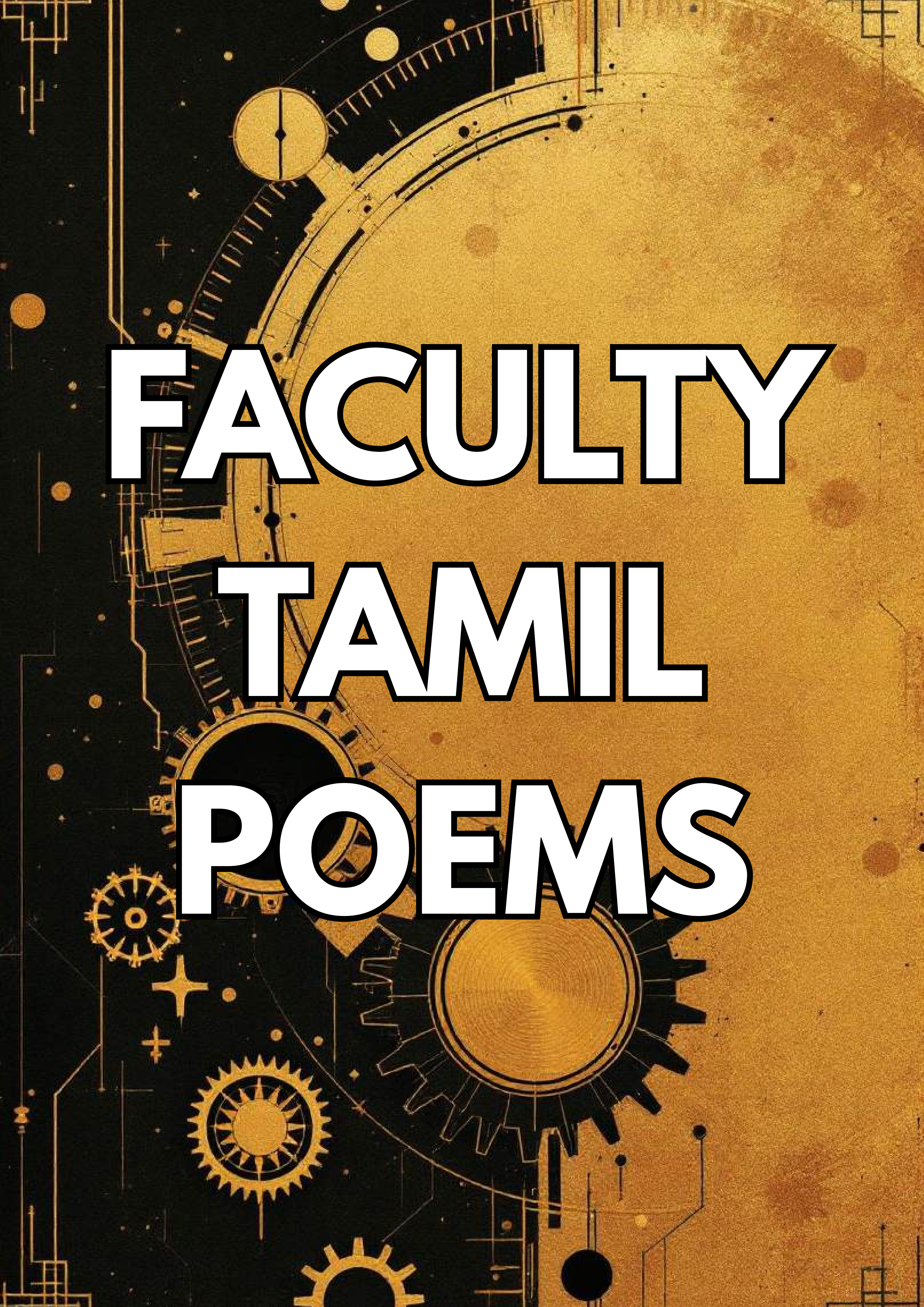
3rd Year

student Tamil poems

அழகு

கண்ணுக்கு அழகு விண்
விண்ணுக்கு அழகு மீன்
மீனுக்கு அழகு கடல்
கடலுக்கு அழகு அலை
அலைக்கு அழகு ஓசை
ஓசைக்கு அழகு இசை
இசைக்கு அழகு இயற்கை
இயற்கைக்கு அழகு என்ன!

Krishnakumar R S
ME - 1st Year


FACULTY
TAMIL
POEMS

கலித்துக் கற்றுக்க, ஓர்விட்டு முன்னேறுவோம்,
தோல்வி என்றால் தள்ளல், வெற்றி என்றே நாமே.
மாணவர் வாழ்வு சோலை, கனவுகள் நிறைந்தது,
என்றும் துடிப்புடன் போகும் வழி இதுதானே

வேண்டாம் சோம்பேறி மனசு, வேண்டும் வலிமை,
கற்றல் ஓர் கரிசல், விளக்கே நம் எதிர்காலம்.
பாடம் என்பதே நம் சிங்காரத்தைத் தழைக்க,
மாணவரே நீ முன்னேறு, உன் திறமை வெளிப்படட்டும்!

நேர்மை கொண்ட மனதில் வெற்றி மலர்த்திடும்,
புத்தகம் அடி, அறிவு குடியேறும் இதயம்.
சிரமம் என்பதே பயிற்சி, கற்கும் செல்வம்,
கல்வி என்ற ஆற்றலை கொண்டு நம் வாழ்வு செழிப்பே.

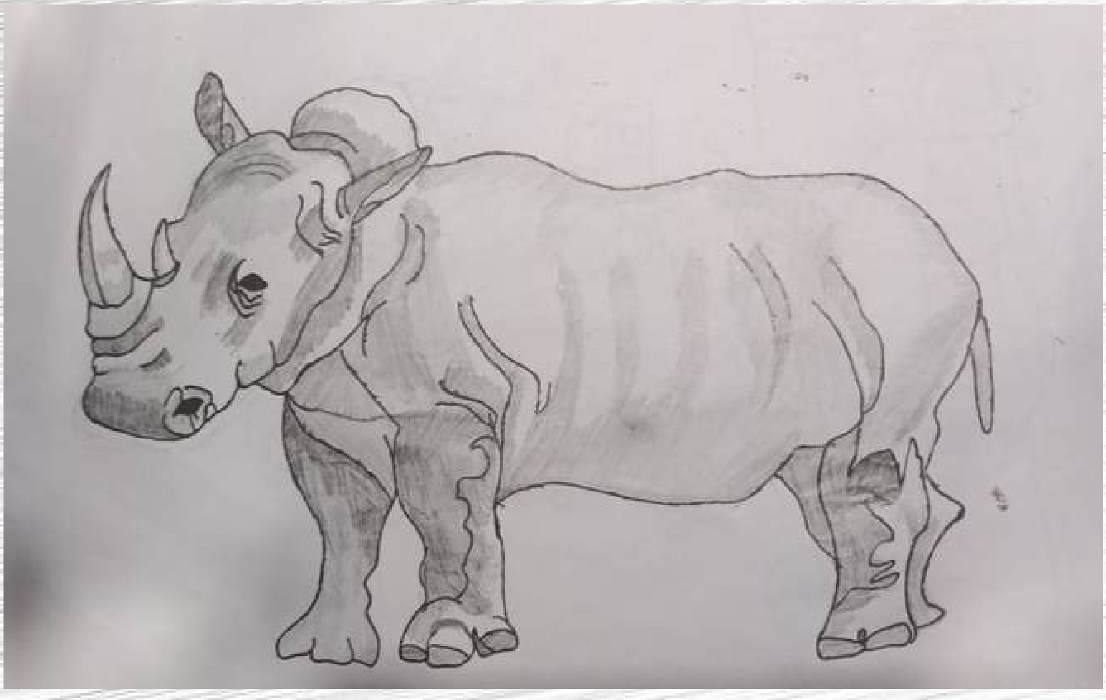
சின்னவனாக வந்தாலும் மனசு பெரியவன்,
ஆற்றல் கொண்ட மாணவன் தான் உலகை மாற்றுவான்!

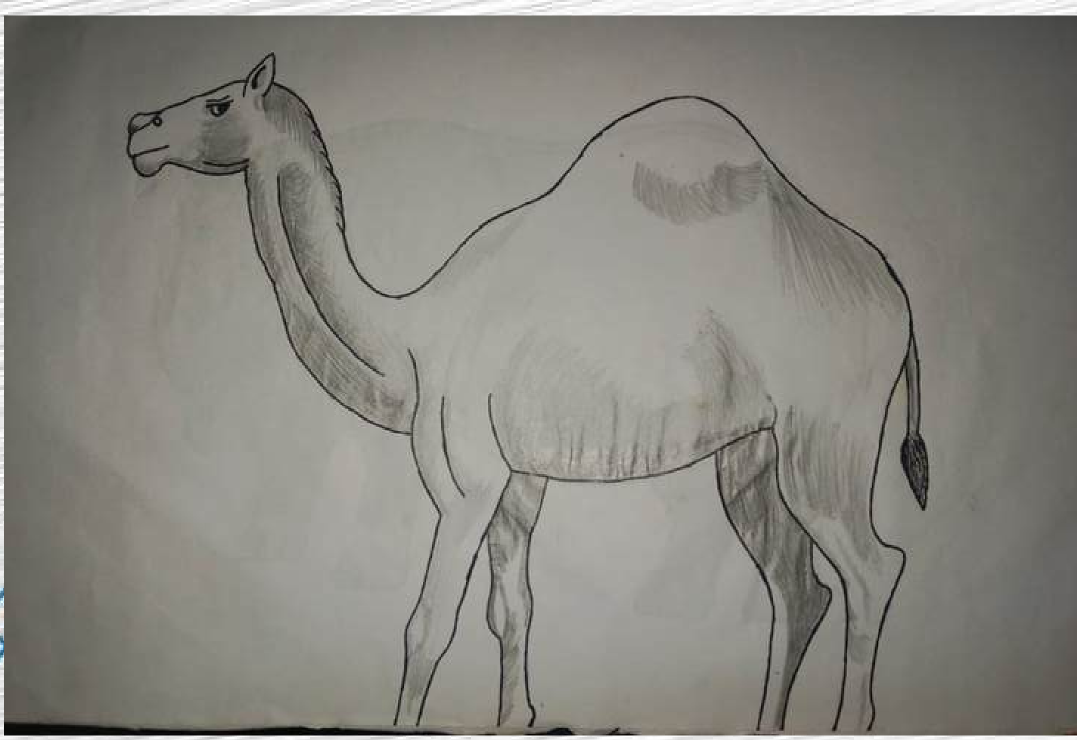
Professor
Mr.V. P. PRAWYN JEBA

Drawings

Dhananjayan S M

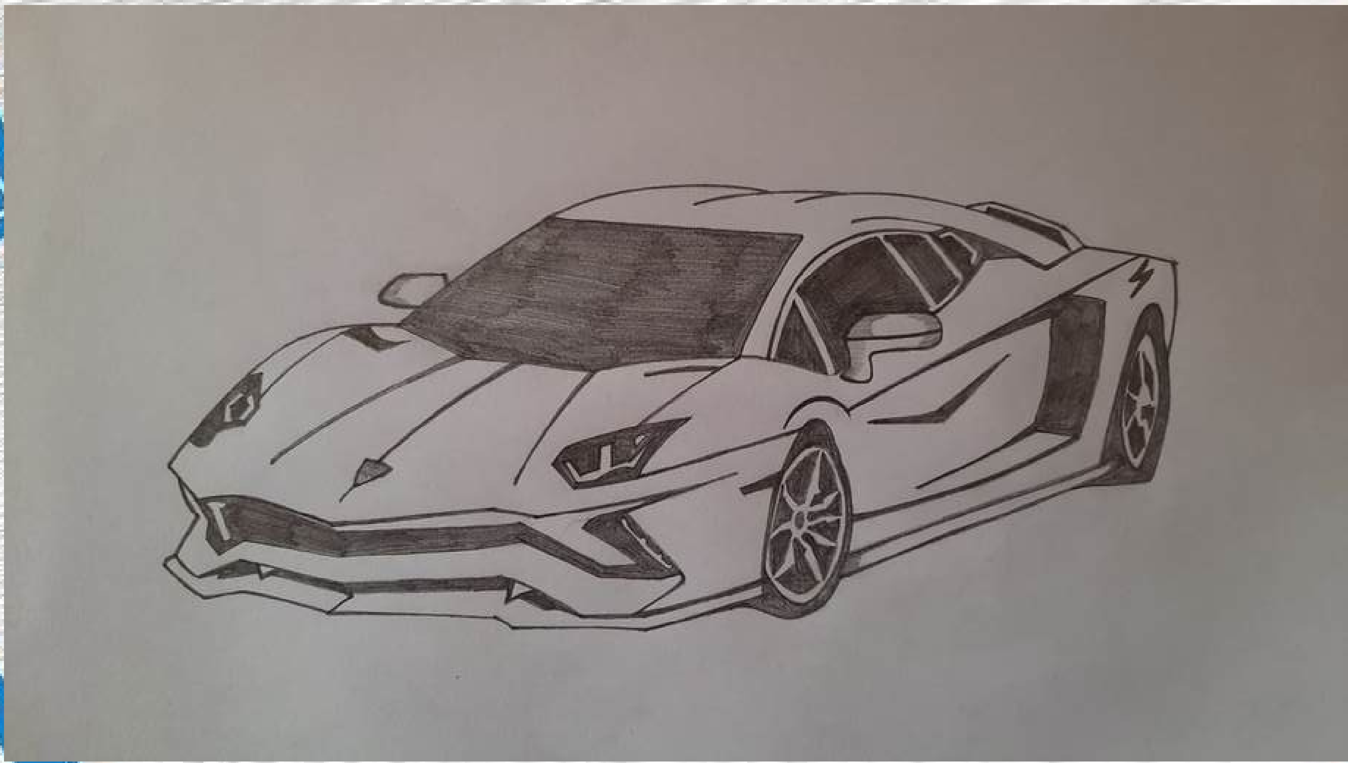
3rd Year





Esakki Arasan S

3rd Year



Sajin Raj T

3rd Year

Karthick T

4th Year - B

Aswin J

3rd Year

ROHINI
COLLEGE OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)

NAAC A+ | NBA NATIONAL BOARD OF ACCREDITATION

Approved by AICTE & Affiliated to Anna University | NBA Accredited for BE (ECE, EEE, MECH) | Accredited by NAAC with A+ Grade

Near Anjugramam Junction, Kanyakumari Main Road, Kanyakumari Dist - 629401, Tamil Nadu.

COURSES OFFERED

COUNSELLING CODE 4670

DIPLOMA
- Electrical And Electronics Engg
- Petrochemical Engineering
- Mechanical Engineering

B.E / B.Tech
- B.Tech-Agricultural Engineering
- B.Tech-Artificial Intelligence and Data Science
- B.E-Biomedical Engineering
- B.E-Civil Engineering
- B.E-Computer Science and Engg
- B.E-Computer Science and Engg (AI & ML)
- B.E-Electronics and Communication Engg
- B.E-Electrical and Electronics Engg
- B.E-Mechanical Engineering

M.E
- M.E-Communication Systems
- M.E-Computer Science and Engineering
- M.E-Thermal Engineering
- M.E-Const. Engineering and Management
- M.E-Embedded System Technologies
- M.E-Industrial Safety Engineering

M.B.A
- M.B.A-Operations Management
- M.B.A-Marketing Management
- M.B.A-Financial Management
- M.B.A-Systems Management
- M.B.A-Human Resource Management
- M.B.A-Logistics & Supply Chain Mgmt

M.C.A
Master of Computer Applications

ADMISSION HELPLINE +91 85310 88888 | +91 98942 98888