FRANCIS XAVIER ENGINEERING COLLEGE
AN AUTONOMOUS INSTITUTION

Accredited BY NBA | AICTE Sponsored Margdarshan Mentor Institution
DST-FIST Supported Institution | ISO 9001:2015 Certified
Recognized under Section 2(f) & 12(B) of the UGC Act, 1950

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DEPARTMENT OF MECHANICAL ENGINEERING MONTHLY NEWS – AUGUST 2024

ABOUT DEPARTMENT OF MECHANICAL ENGINEERING

The department offers UG program in B.E Mechanical engineering from the year 2005. The department started a PG program M.E Industrial Safety Engineering from this academic year 2018- 2019. This course has wide range of job opportunity in the Industrial and Academic sector of India as well as abroad. The Department aims at providing the students with a perfect blend of intellectual and practical experiences with the support state-of the-art laboratories and well-defined academic structure. The UG program is accredited by National Board of Accreditation (NBA). The special feature of the Department has established three applied laboratories, in addition to the regular labs to support students to master skills to make each one industry-ready, with a solid grounding in the principles and practice of Mechanical Engineering. We also have a strong academy for training students to appear for GATE exam.

VISION OF THE DEPARTMENT

To produce competent Mechanical Engineers of excellent technical and managerial skills with profound morality for global, national and confront societal development.

MISSION OF THE DEPARTMENT

1. To provide quality education in Mechanical Engineering with an interdisciplinary approach, encouraging innovation, research, and Entrepreneurship through world-class infrastructure and proficient teachers.

2. To make the department self-reliant through multiple programs with excellent curricula, best practices, and industry exposure.

3. To inculcate technical, professional, and leadership skills, moral ethics, and lifelong learning.

Programme Educational Outcomes

The Bachelor of Mechanical Engineering curriculum is designed to impart Knowledge, Skill, and Attitude to the graduates to

PEO 1: Have a successful professional career in Mechanical Engineering and allied industries, either by employment or through entrepreneurship.

PEO 2: Establish competency in Design, Thermal, Materials, and Manufacturing system with ethics and social responsibility.

PEO 3: Have a continual receptiveness for leadership and social challenges.

Message from the Head of the Department

Dear Colleagues,

Greetings!

I have great pleasure and pride in announcing that the Department of Mechanical Engineering is publishing the newsletter for the month of August 2024. We are steadfast in our progress as it involved various activities that enabled the hidden talents of the department students and faculty members to be brought to light. Besides the lockdown, our faculty members are continuously attending various training programs, publishing research papers, and book chapters, and are also working on getting patents.

This newsletter is the reflection of department activities that showcase all the events held in the department, the contributions of faculty members, and students, and the best practices adopted. I would like to congratulate all the members of the editorial board for their sincere effort to realize this venture.

Dr. R. Samuel Hansen, M.E., Ph.D.
Professor & Head
samuel_hansen@rediffmail.com

Edited & Designed by Dr. K. Vinukumar, AP/Mech, FXEC SOCIAL MEDIA /FXEC Mechanical

GUEST LECTURE / SEMINAR / SKILL TRAINING

GUEST LECTURE REPORT ON PROBABILITY AND ITS APPLICATIONS

On August 8, 2024, Dr.V.Vijimon Moni, Coordinator of the Department of Humanities and Science at St. Xavier's College of Engineering, Chunkankadai, Nagercoil, delivered guest lecture on the topic "**Probability and its Applications**". The session, held for the second year students of Computer Science and Engineering. The lecture began with a review of key concepts such as probability distributions, expected values, and the law of probabilities. The speaker demonstrated how these principles are employed in practical scenarios, from risk assessment in finance and decision-making in business to predictive modelling in health care and artificial intelligence. The guest speaker known for his expertise in the subject, explored essential concepts such as probability distributions, statistical inference, and risk management, demonstrating their relevance through real-world applications and case studies. His lecture offered valuable insights into how probability informs decision-making and problem-solving in both academic and professional contexts.The concepts are easily understood by the student II CSE. The program was convened by Dr.V.Velmurugan and coordinated by Mr. A.Santiago Stephen ASP/ Maths and Mrs. A.Sivagami AP/ Maths and Dr.Ayyappan ASP/ Maths.


GPS Map Camera
Tirunelveli, Tamil Nadu, India
103/G2, By pass Road, Vannarpet, Barani Nagar,
Tirunelveli, Tamil Nadu 627003, India
Lat 8.732094°
Long 77.723791°
08/08/24 11:24 AM GMT +05:30
Google


MISSION
Galaxy A23 5G

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME INAUGURATION

Edited & Designed by Dr. K. Vinukumar, AP/Mech, FXEC SOCIAL MEDIA /FXEC Mechanical

The inauguration event of the American Society of Mechanical Engineers (ASME) at Francis Xavier Engineering College was held on August 10, 2024, at 10:30 AM in the MBA Seminar Hall. Total around 68 students were participated in the inauguration event. Dr. M. Kannan, the ASME coordinator, commenced the event, setting the tone for an inspiring session. Dr. V. Velmurugan, Principal, Francis Xavier Engineering College, shared his insights and knowledge about ASME, highlighting its significance. Dr. K. Lakshmi Narayanan, Head of Applied Labs, motivated the students by discussing the latest technological advancements. Dr. R. Samuel Hansen, HOD/MECH, elaborated on the vision of ASME, while Dr. Lourdes Rayan, EDC Director, encouraged entrepreneurial thinking among students. The event's highlight was the announcement of an upcoming Ideathon by the Chief guest, Dr. Balaji Venkataraman, President of TVS Sensing Solutions Pvt Ltd., who also shared his valuable knowledge. The event concluded with a vote of thanks delivered by Mr. T. Esakki Selvam, Secretary of the ASME Student Section Chapter, marking a significant milestone for the college's engineering community.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME IDEATHON

Edited & Designed by Dr. K. Vinukumar, AP/Mech, FXEC SOCIAL MEDIA /FXEC Mechanical

IDEATHON 2.0, organized by the ASME Student Section of Francis Xavier Engineering College, was held at the MBA Seminar Hall with the theme “Function2Form”. The event, hosted by Design and Analysis Industrial Applied Lab drew participation from over 50 teams, including polytechnic institutions. The competition focused on transforming functional designs into aesthetically appealing and innovative forms. The event provided an exciting platform for students from different institutions to showcase their ingenuity and technical skills. Among the participants, a polytechnic team took home the first prize, highlighting their exceptional design approach. In addition, Francis Xavier Engineering College teams performed remarkably well, securing the first price Mr S Kaikondar and Mr S Regin and second prizes Mr S Sundarjee and Mr Thomas Goldwin in the main competition. Their projects stood out for their practicality and creativity, aligning perfectly with the theme of the event. A special appreciation prize was awarded to the team from Mother Theresa College of Engineering for their distinct and innovative approach to design. The event was a resounding success, with judges and participants praising the quality of submissions and the collaborative spirit of the competition. IDEATHON 2.0 proved to be an excellent opportunity for students to learn, innovate, and showcase their skills, further strengthening the college’s commitment to fostering technical excellence and creative problem-solving.

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Guest Lecture on Bridging the Gap: Transitioning from College to a Professional Engineering Role

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Second year Mechanical students. **Er. Sakthivel., Process Engineer., L & T., Chennai.,** delivered the guest lecture on **"Bridging the Gap: Transitioning from College to a Professional Engineering Role"**. Dr.K.Ariyanayagam., Associate Professor/Mech arranged the Resource person for the Guest Lecture. A heartfelt greeting to the resource person is extended by Dr. R. Samuel Hansen, HOD-MECH. The expert resource thanked the management for offering him this opportunity.

The speaker commenced the lecture transitioning from college to a professional engineering role marks a significant shift from a primarily theoretical and individual-focused environment to one that emphasizes practical application, teamwork, and client interaction. These roles demand not only technical expertise but also strong communication, project management, and problem-solving abilities. The real-world engineering environment involves managing projects with deadlines, budgets, and regulatory requirements, which contrasts with the more controlled academic setting.

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GUEST LECTURE ON HOW DO YOU BUILD YOUR CARRER AS A MECHANICAL ENGINEER IN IT SECTORS

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Second year Mechanical students. **Er. S.Sivahari., System Engineer., Kronos Analyst., TCS Siruseri., Chennai.,** delivered the guest lecture on **"How Do You Build Your Carrer As A Mechanical Engineer in IT Sectors"**. A heartfelt greeting to the resource person is extended by Dr. R. Samuel Hansen, HOD-MECH. The expert resource thanked the management for offering him this opportunity.0

Building a career as a mechanical engineer in the IT sector requires a strategic approach that leverages your engineering expertise while acquiring relevant IT skills. Initially, it's crucial to develop a strong foundation in mechanical engineering, gaining experience in areas like design, manufacturing, or maintenance. Simultaneously, begin learning key IT concepts such as programming, data analysis, and software development, which are increasingly important in today's tech-driven industries.

Networking is essential; connect with professionals in the IT industry and join relevant groups or forums. Pursuing certifications in IT-related fields, such as coding languages (Python, C++), data science, or

cloud computing, can also make you more competitive. Internships or projects that bridge mechanical engineering and IT can provide practical experience and demonstrate your versatility to potential employers.

Guest Lecture on OPPORTUNITIES FOR MECHANICAL ENGINEERS IN IT

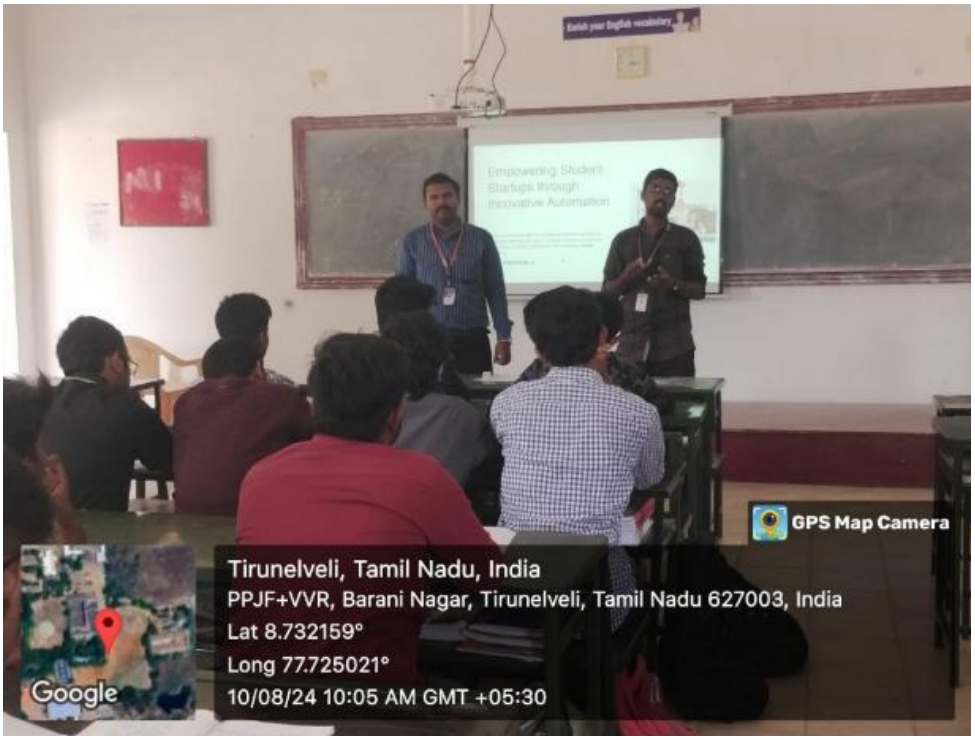
Department of Mechanical Engineering conducted a guest lecture on Role of Mechanical Engineering in IT for II Year Mechanical Engineering students. 47 students were attended the program. Mr.J.Jeyaneel Prince, Site Reliability Engineer, TSYS Card Tech Services India LLP, Noida have served as the Resource Person in delivering the guest lecture portrays the necessity of Mechanical Engineers in IT Sectors. The necessary arrangements for this lecture were made at Metrology Lab of Mechanical Block. Dr.R.Samuel Hansen HoD/Mech have welcomed the Resource Person. He gave a quick overview of his professional journey in the IT industry, from his first job to his present one. He also offered his advice on how to obtain better packages within a short span of time. Additionally, he discussed his understanding and experiences on an individual's function in a team is crucial, in order to assess himself the best among the others in this competitive world. He also narrated the various skillsets required to compete for placement chances in the top industries. The event was organized by Mr.J.Jeremy Jeba Samuel AP/Mech and Mr.S.David Blessley AP/Mech. Finally the program was wind up with the closing note given by Mr.S.David Blessley AP/Mech.

YOUR IDEAS, YOUR RIGHTS: A STUDENT'S PATH TO PATENTING

An “Your Ideas, Your Rights: A Student's Path to Patenting” was organized by Entrepreneurship Development Cell & Institution’s Innovation Council in association with the Department of Mechanical Engineering on 20th August, 2024 at 9:30 am to 12.30 pm. The program was held via offline mode. Dr.K.Vinukumar, AP/MECH inaugurated the session with welcome address. The session was handled by Dr.J.Sangilimuthukumar, AP/Mech, Department of Mechanical, Francis Xavier Engineering College, Tirunelveli. 45 students and one faculties participated in the program. This event was coordinated by Dr. K. Vinukumar AP/MECH. This event was conducted with the guidance of Dr. Lourdes Poobala Rayen, EDC Director. The resource person delivered a comprehensive overview of understanding patents and the different types of patents. There are three main types of patents: Utility Patents, Design Patents, and Plant Patents. Patents provide protection for new inventions by granting inventors exclusive rights to their creations. The session included a detailed explanation of assessing patentability, documenting your invention, and the application process. To qualify for a patent, an invention must meet the criteria of novelty and utility. Additionally, it is important to be aware of the Indian Patent Agent Examination, which is a key certification

for professionals in the patent field. The session concluded with a Q&A segment, where clear and helpful answers were provided to address participants' questions.

“Empowering Student Startups through Innovative Automation”



Empowering student startups through innovative automation can create transformative opportunities for young entrepreneurs. By leveraging automation, student startups can streamline operations, reduce costs, and focus more on their core business. Apply AI for data analysis, predictive insights, and personalized customer experiences. The 4M method, which traditionally focuses on Man, Machine, Material, and Methods, gains a new dimension with technology. Empowering student startups through innovative automation involves harnessing new technologies to revolutionize industries; for example, integrating advanced automation in the food industry to streamline supply chains, or leveraging AI-driven innovations in the automobile sector to enhance manufacturing efficiency and vehicle performance.

ORIENTATION PROGRAM ON GATE2025 AND CORE PLACEMENTS

Orientation program on GATE2025 and core placements session was conducted by the Training and Skills Development on 09-08-2024 from 11.00 am to 1.00 pm. The resource person for the session was Er. B. Ebenezer, Certified Career Analyst, and a Career Development Coach Helping Stone - Life & Career Discovery from Nagercoil. Firstly, Dr.John Kennady, the Director, Admissions, SCAD Group of Institutions, described the importance of preparation for GATE exams and the awareness about the Placement of Government sectors. Then the resource person spoke to the students about the importance of GATE as syllabus, question pattern and getting priority in employment. He explained the different stragies to crack GATE exam. He also outlined in details about the curriculam of each departments. GATE orientation program was very helpful for getting job easily in public sector companies. Students felt that GATE exam is also helpful for students for working in various multinational organizations.

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How to crack your First Interview

On August 30, 2024, a highly informative and engaging session titled "How to Crack the First Interview" was conducted at the Mechanical Seminar Hall. The event took place from 11:00 AM to 12:30 PM and was attended by students eager to gain insights into acing their first job interviews.

The session was led by Mr. Praveen, a seasoned expert from the Association of Intellectual Managers at ISSM B School, Tharamani, Chennai. With his extensive experience in corporate recruitment and human resources, Mr. Praveen shared valuable tips and strategies tailored to help fresh graduates prepare for and succeed in their first interviews. Mr. Praveen began the session by outlining the typical structure of a job interview. He emphasized the importance of understanding each stage, from the initial screening to the final interview, and how candidates should approach each phase with confidence and preparedness.

INTERNSHIP/ PLACEMENT/ FUNDING/ INDUSTRIAL VISIT

Industrial Visit: Kerala Automobiles Ltd

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On 14/08/2024, Totally 44 number of IV Year Mechanical Engineering Students from Francis Xavier Engineering College had the opportunity to visit the Kerala Automobiles limited, Trivandrum, Kerala. The purpose of the visit was to gain insights into the assembly of the Kerala Automobiles limited.Kerala Automobiles Limited (KAL) was incorporated in 1978 as a Government of Kerala undertaking. It is set up 16 kilometres south of Thiruvananthapuram, in a tiny village called Aralumoodu in Neyyattinkara Taluk. The Company manufactures Electric Three Wheelers suitable for passenger and goods traffic in the brand name of KERALA NEEM G which are considered as Eco-friendly vehicles. The present product range comprises of Pollution Free Electric Auto rickshaws.

Electric Tipper Van KAL Tipper available in Electric model. Overall Length: 2515 mm, Overall Width: 1375 mm, Wheel Base: 1870 mm, Ground Clearance: 120 mm, GVW: 750 Kg Kerala Neem GSwing Arm Suspension at the front and Leaf Spring Suspension at the rear. Dual Hydraulic Circuit with TMC, Single control acting on all wheels. Thus the several auto rickshaws assembled here are studied briefly also 5s housekeeping and kaizen techniques involved in quality management also were observed. The visit to Kerala Automobiles Limited provided valuable insights into the operations of the Automobile industry as well as 5S concepts of housekeeping. We express our appreciation for the warm hospitality extended by the industry authorities and look forward to further collaboration and engagement with the plant in the future. The visit is scheduled for the total Quality Management subject in the seventh semester. Dr.M.Ayyappan, ASP/Maths and Mr.R.Rahesh, AP/Mechanical Engineering Department, organized the event.

INDUSTRY INSTITUTE INTERACTION

MAC Industries, a pioneering company in the field of mechanical engineering, specializes in the design and development of innovative gym and fitness equipment. With a strong commitment to quality and innovation, MAC Industries aims to revolutionize the fitness industry by introducing cutting-edge solutions that enhance the way people engage in physical fitness. The company's dedication to excellence has positioned it as a

leader in the industrial sector, consistently pushing boundaries and redefining traditional approaches to fitness equipment design. Today 24.08.2024 – Mechanical Engineering Faculty Mr.J.Jeremy Jeba Samuel & Dr.S.Sheik Sulaiman have visited Alumni student Entrepreneur Company (Mr.Selva Boaz/MD), Mac Industries, V.M.Chatram, and Tirunelveli. They are doing manufactures of fitness equipment & industrial machine services, products are selling through Amazon and Blue dart companies an annual turnover of 1.5 core. Two of our alumni's are working there as design and service engineers. The industry fabrication shop floor having MIG Welding, milling, drilling, pipe cutting, bending and other machineries setup with 15+ employees. May our students can get training / learning in sheet metal fabrication, advanced welding techniques, design and service related activities for their job placements.

NPTEL / FDP / ONLINE COURSES

JOURNAL PUBLICATION :

We are thrilled to announce the publication of a new journal article titled "Industrial Crops and Products" by Dr. Sangilimuthukumar. This insightful paper explores the latest developments and applications of industrial crops, offering a comprehensive analysis of their impact on various industries. Congratulations to Dr. Kumar on this significant contribution to the field of agricultural and industrial research!

MOU SIGNING :

We are excited to announce the successful signing of a Memorandum of Understanding (MOU) between the Mechanical Department and CRI Pumps Industry. The event was attended by 30 enthusiastic students, marking a significant step towards fostering industry-academia collaboration. This partnership promises valuable opportunities for practical learning and future career growth. Congratulations to everyone involved!

CARSIM WORKSHOP :

The Mechanical Department recently hosted a workshop in collaboration with **CARSIM Technologies**, attended by a total of 15 participants, including both staff and students. The workshop provided valuable insights into advanced simulation technologies and their applications in mechanical engineering. A big thank you to all attendees for their participation and engagement!