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DEPARTMENT OF MECHANICAL ENGINEERING MONTHLY NEWS – JULY 2023

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 to announce that the Department of Mechanical Engineering is publishing the newsletter for the month of July 2023. Amidst the Covid Pandemic situation, we strived hard to keep the students engaged, and utilize the time not only for quality education and for self-development. 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 into light. Besides the lockdown, our faculty members are continuously attending various training programs, publishing research papers, book chapters and are also working on getting patents.

This newsletter is the reflection of department activities which showcases all the events held in the department, contribution of faculty members, 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

EDITORIAL BOARD

Dr. Dr. R. Samuel Hansen, Professor & Head of Department, Editor – in – Chief.

Dr. S. Balakrishnan, Assistant Professor, Mechanical Department, Faculty In charge.

INITIATIVE SKILL TRAINING

Innovation and Product Development Applied Laboratory offered Special Initiative Skill training has conducted for IIIrd Students in the topic of “Geometric Dimensioning and Tolerancing”. During five days of training (03.07.2023 to 07.07.2023) the students were learned about basic concept of GD & T international language used on engineering drawings. By providing uniformity in drawing specifications and interpretation, geometric dimensioning and tolerancing reduces controversy, guesswork, and assumptions throughout the manufacturing and inspection process. Students are able to apply suitable tolerances to mating parts and features, to ensure assembly fit and functionality, correctly interpret technical drawings & understand the allowable variation in finished part size, as compared to the idealized form. At the end of each day training students were assessed by assignments and on the final day student submitted individual test projects. The training has conducted by Mr.S.Sheik Sulaiman, AP/Mech & Innovation and Product Development Applied Lab in-charge and Guided by Dr. K. Lakshmi Narayanan, Vertical Head/ Applied Labs.



SKILL TRAINING PROGRAMME - ANSYS FLUENT (PHASE – I)

A Skill Training Programme on Numerical Simulation using ANSYS Fluent (Phase – I) from 22.07.2023 to 31.07.2023 was organized by the Department of Mechanical Engineering under the support and guidance of Dr.S.Balaji, Professor / Training & Skill, Dr.R.Samuel Hansen, HOD/Mech and the Skill Trainers are Dr.K.Robinston Jeyasingh Swikker, Asso. Prof./Mech, Mr S.Thanumalaya Perumal, AP/Mech & Mr S.M.Sunder Rajan AP/Mech. Totally 104 students were undergone this mandatory training in three different venues. The ultimate goal of the initial skill training Programme was to equip the students to know the analysis of Fluent software inter-relate with industrial problems. ANSYS Fluent is a powerful computational fluid dynamics (CFD) software used for simulating and analyzing fluid flow, heat transfer, and other related phenomena in various engineering and scientific fields.

The training covered the different aspects of Fluent. Participants gained a strong understanding of CFD principles and their practical applications. Students became proficient in using ANSYS Fluent for various simulation tasks. Hands-on experience empowered students to create, simulate, and analyze CFD models independently. The training module deals with the theoretical sessions to explain fluid dynamics concepts and CFD theories, Practical demonstrations of CFD software tools and workflows and hands-on sessions where participants worked on CFD problems.

Group discussions to address questions, troubleshoot challenges, and share insights. Participants learned to interpret simulation results and present findings effectively. The ANSYS Fluent training for students successfully achieved its objectives of imparting fundamental CFD knowledge and practical software skills. Participants gained confidence in using ANSYS Fluent for simulating fluid dynamics scenarios, which can be leveraged for their academic pursuits and future careers.



EXPERT TALK

An “Expert Talk on Opportunities in Entrepreneurship” was organized by Entrepreneurship Development Cell & Institution’s Innovation Council in association with the Department of Mechanical Engineering on 11th July 2023 at 01:30 pm to 04.30 pm. The program was held via offline mode. Dr.R.K.A.Bhalaji, AP/MECH inaugurated the session with welcome address.

The resource person began by discussing the significance of cultivating an entrepreneurial mindset. This included traits such as resilience, adaptability, risk-taking and a strong passion for innovation. Students were encouraged to develop these qualities to thrive in the competitive business world. Next, he revealed the key highlights of entrepreneurship such as understanding the entrepreneurial mindset, identifying market gaps & trends, technological disruptions & innovation, access to funding & capital, importance of networking & collaboration, overcoming challenges & failures and scaling & global expansion. Resource person emphasized the importance of identifying market gaps and staying updated on emerging trends. Entrepreneurs who can pinpoint untapped opportunities and address evolving consumer needs are more likely to create successful and sustainable businesses. In addition to this, resource person said the road to entrepreneurship is riddled with challenges and failure is an inevitable part of the

journey. Students were encouraged to view failures as valuable learning experiences and to persist in the face of adversity. Regarding opportunities in entrepreneurship, he shared innovative ideas for students to start the business in both online and offline as per recent trends in world market. Finally, the expert talk served as a catalyst for fostering a thriving entrepreneurial community and exploring the limitless possibilities in the ever-evolving business landscape.

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Expert talk on Opportunities in Entrepreneurship

11 JULY 2023
02:20 PM - 03:30 PM

Resource Person

Dr. Lourdes Poobala Rayen,
IIC President,
Innovation Ambassador for Entrepreneurship,
Francis Xavier Engineering College.

Organized by
Entrepreneurship Development Cell &
Institution's Innovation Council

In association with
Dept. Mechanical Engineering

Co-ordinator
Dr. R.K.A. Bhalaji,
Assistant Professor / MECH

Sponsor
Dr. Lourdes Poobala Rayen,
Director EDC and IIC President.

Dr. K. Jeyakumar
General Manager - Development

Dr. V. Velmurugan
Principal

GPS Map Camera

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PPJF+FWW, kodaikanal, Barani Nagar, Tirunelveli, Tamil Nadu 627003, India
Lat 8.731251°
Long 77.724718°
11/07/23 02:21 PM GMT +05:30

ALUMNI INTERACTION

Activity Code: ACT/23-24/001640

Programme: Expert Talk on Safety in Construction Sites

Date: 22 - 07- 2023

Resource Person: Mr.T.Abraham Jebamani Raj., Safety Supervisor., Kudankulam Nuclear Power Plant

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Third year Mechanical students. Mr.T.Abraham Jebamani Raj (2023 Batch Alumni), Safety Supervisor., Kudankulam Nuclear Power Plant delivered the guest lecture on "Expert Talk on Safety in Construction Sites". Dr.R.Samuel Hansen HOD-MECH welcomed and introduced the resource person. The resource person thanked the management for giving this

opportunity. The expert talk on safety in construction sites was organized with the aim of raising awareness and promoting best practices in ensuring the safety of construction workers and mitigating potential hazards on construction sites.

The resource person talked about the safety observations, incident data, and recommendations to improve safety practices at construction sites. He highlighted the key findings and emphasize the significance of prioritizing safety in construction operations. The expert talk on safety in construction sites proved to be highly informative and engaging. Attendees left with a deeper understanding of potential hazards and best practices to ensure the safety of everyone involved in construction projects. The event succeeded in promoting a safety-conscious culture within the construction industry, and participants expressed their commitment to implementing the lessons learned in their respective workplaces.

The expert talk also featured interactive sessions where attendees actively participated in discussions, shared their experiences, and asked questions. This encouraged open dialogue and allowed for practical problem-solving regarding safety challenges faced on construction sites.

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nif RANKINGS 2023
INDIA
51-100 BAND

FX ALUMNI

Alumni Guest Lecture

Topic
**Expert Talk on
Safety in Construction Sites**

Resource Person
Mr. T. Abraham Jebamani Raj
Safety Supervisor
Kudankulam Nuclear Power Plant.

Organised by
FX Alumni Association

In association with
Dept. of Mechanical Engineering

Organized by
Mr. S.M. Sunder Rajan
Assistant Professor / MECH

Convener
Dr. R. Samuel Hansen
HOD / MECH

22nd
JULY, 2023
1.30 - 2.30 pm

Mr. S. Krishnakumar
Director, FXAA

Dr. K. Jeyakumar
General Manager (D)

Dr. V. Veimurugan
Principal, FXEC

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for Innovation and Entrepreneurship Activities

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Long 77.724702°
22/07/23 01:46 PM GMT +05:30

The attendees alike expressed their gratitude to the expert for sharing valuable insights and fostering a greater sense of responsibility towards safety in

construction. It was decided that similar events would be organized periodically to reinforce safety practices and address emerging safety concerns in the industry.

Activity Code: ACT/23-24/001639

Programme: Expert Talk on Introduction to Ansys Workbench

Date: 31-07-2023

Resource Person: Mr.K. Kathiresan., Assistant Technical Engineer Trainee, Tata Consultancy Services, Chennai.

FX Alumni Association organized a guest lecture in association with the Department of Mechanical Engineering for the Third-year Mechanical students. Mr.K.kathiresan (2023 Batch Alumni), Assistant Technical Engineer Trainee, Tata Consultancy Services, Chennai delivered the guest lecture on “Expert Talk on Introduction to Ansys Workbench”. Dr.R.Samuel Hansen HOD-MECH welcomed and introduced the resource person. The resource person expressed gratitude to the management for providing this chance.

The guest lecture on the Introduction to ANSYS Workbench provided an insightful overview of the software's capabilities, its applications in engineering and simulation, and its role in modern product development. The presenter highlighted key features, benefits, and use cases to give the audience a comprehensive understanding of ANSYS Workbench.

The lecture commenced with an explanation of ANSYS Workbench as a comprehensive simulation platform that enables engineers and designers to perform various types of simulations, such as structural analysis, fluid dynamics, electromagnetic simulations, and more. The intuitive graphical interface of Workbench was emphasized, making it accessible to both novice and experienced users.

Overall, the guest lecture gave the students a solid fundamental grasp of ANSYS Workbench's capabilities and importance in contemporary engineering and design. The talk was interesting and educational because it included both theoretical justifications and real-world examples. Attendees learned important things about simulation-driven design and how it affects different sectors.

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FX ALUMNI

Alumni Guest Lecture
Expert Talk on
Introduction to Ansys Workbench

Mr. K. Kathiresan
Assistant Technical Engineer Trainee,
Tata Consultancy Services,
Chennai.

Resource Person

31st
JULY, 2023
10:00 AM - 11:00 AM

Organised by
Department of Mechanical Engineering

Co-ordinator
Mr. S.M. Sunder Rajan
Assistant Professor, / MECH
Francis Xavier Engineering College.

Convener
Dr. R. Samuel Hansen
HOD / MECH
Francis Xavier Engineering College.

Mr. S. Krishnakumar
Director
FX Alumni Association

Dr. K. Jeyakumar
General Manager
Development

Dr. V. Velmurugan
Principal

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