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DEPARTMENT OF MECHANICAL ENGINEERING

MONTHLY NEWS – AUGUST 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 August 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. R. Samuel Hansen, Professor & Head of Department, Editor – in – Chief.

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

SKILL TRAINING PROGRAMME - SOLIDWORKS (PHASE – I)

A Skill Training Programme on Digital Prototyping Using SolidWorks (Phase – I) 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 Mr S.ThanumalayaPerumal, AP/Mech & Mr S.M.Sunder Rajan AP/Mech. Totally 47 students of II year were undergone this mandatory training in two different venues. Digital prototyping is a critical phase in product development that involves creating virtual representations of physical products using computer-aided design (CAD) software. SolidWorks, developed by Dassault Systems, is a widely used CAD software for designing, modeling, and simulating products. The process begins with conceptualizing the product idea and creating its initial design using SolidWorks. This includes defining dimensions, shapes, and basic features.

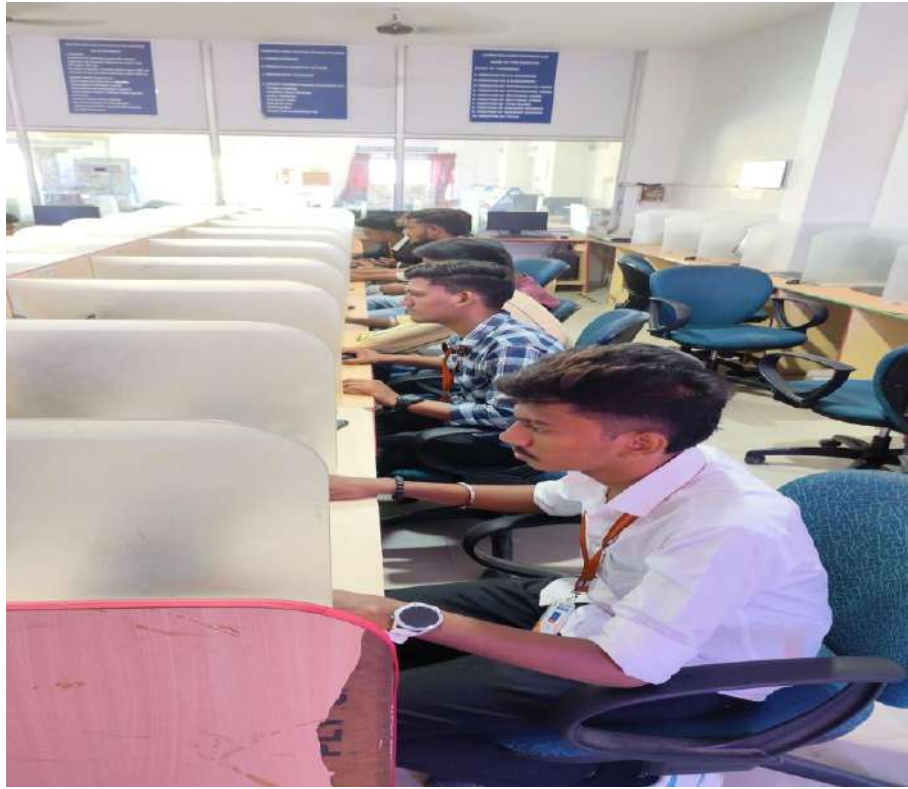
In modern product development, digital prototyping has emerged as a pivotal phase in the design process. Utilizing advanced Computer-Aided Design (CAD) software, such as SolidWorks by Dassault Systems, this approach revolutionizes how products are conceptualized, designed, tested, and refined.

Digital prototyping, harnessed through the potent capabilities of SolidWorks, represents a paradigm shift in product development. This process streamlines the journey from conceptualization to refinement, offering many benefits such as cost savings, enhanced collaboration, design optimization, and rapid iteration. By leveraging the prowess of SolidWorks, companies can elevate their product development endeavors while minimizing time-to-market.

Activity Code : ACT/23-24/001982

Programme : DIGITAL PROTOTYPING USING SOLIDWORKS

Date : 07-08-2023 to 12-08-2023 (PHASE – I)



ASME SCHOLARSHIP

The American Society of Mechanical Engineering (ASME), a globally recognized organization, has awarded a scholarship to Praveen, a final-year student of mechanical engineering at Francis Xavier Engineering College. The students of the college, earlier, prepared the projects under the guidance of Professor Kannan M, through the design and applied laboratory center. Praveen was awarded a grand of thousands dollars to encourage him to develop better ideas and projects.

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ASME Foundation Variable Scholarship

ASME[®] FRANCIS XAVIER ENGINEERING COLLEGE STUDENT SECTION

\$ 1000 USD

PRAVIN P, IV B.E Mech
Chairman, ASME – FXEC Student Section

Congratulations!

DEPARTMENT OF MECHANICAL ENGINEERING
Design and Analysis Industrial Applied Lab

competition success review
Top Prominent and Well-known Engineering Colleges of India

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2023

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5 stars
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ALUMNI INTERACTION

Activity Code: ACT/23-24/001639

Programme: Role of Mechanical Engineers in Piping Design

Date: 07-08-2023

Resource Person : Mr.S.Krishnamoorthy (2018 Batch),Quality Engineer, G&W Ready-Mix PTE Ltd, Singapore

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Third year Mechanical students. Mr.S.Krishnamoorthy (2018 Batch Alumni), Quality Engineer, G&W Ready-Mix PTE Ltd, Singapore delivered the guest lecture on “Role of Mechanical Engineers in Piping Design”. A hearty greeting is extended by Dr. R. Samuel Hansen, HOD-MECH, who also introduces the resource person. The resource person expressed his gratitude to the management for giving him this chance.

Piping systems are essential parts of many different industries, such as the oil and gas, petrochemical, and power generation sectors. These systems' design, construction, and operation are complicated and difficult since they convey fluids and gases. By combining their knowledge of mechanical engineering concepts with a thorough understanding of fluid dynamics, materials, codes, and standards, mechanical engineers play a crucial role in assuring the successful design and implementation of these piping systems.

As a Piping Design Engineer will be responsible for contributing to the design, analysis, and implementation of complex piping systems in various industries. Role will encompass a range of tasks, including: Collaborating with cross-functional teams to develop optimal piping layouts and designs; Conducting stress analysis and ensuring structural integrity of piping systems; Ensuring compliance with industry codes and standards, such as ASME B31.3 and API 570; Specifying and integrating necessary equipment, such as pumps, valves, and heat exchangers; Analyzing fluid dynamics to optimize system performance and efficiency and Incorporating safety measures and environmental considerations

into the design.



Overall, the guest lecture gave the students to integral the successful design, implementation, and operation of piping systems. Their expertise spans various aspects, from system layout to stress analysis, ensuring that piping systems are safe, efficient, and reliable within a range of industries.

Activity Code: ACT/23-24/ 001808

Programme: The Impact of Technology on Mechanical Engineering

Date: 08-08-2023

Resource Person: Mr. A.Alban Santhosh., Founder – Life Changers Academy

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Second year Mechanical students. Mr.A.Alban Santhosh.,Founder – Life Changers Academy delivered the guest lecture on “The Impact of Technology on Mechanical Engineering”. Dr. R. Samuel Hansen, Head of the

Mechanical Engineering Department, extended a warm welcome to all participants and introduced the esteemed resource person. The resource person expressed gratitude for the opportunity to share insights on the topic.

A notable development discussed was the advent of digital twin technology. By creating virtual replicas of physical machinery and systems, engineers can monitor, analyze, and optimize real-world performance in real time. The impact of advanced materials on mechanical engineering was also underscored. Engineers now have access to cutting-edge materials such as lightweight alloys and composites that offer superior properties compared to traditional materials. It also covered the field's growing focus on sustainability and energy efficiency.

In order to address environmental issues and build a more energy-efficient future, mechanical engineers are playing a crucial role in the development of green technologies and the adoption of sustainable practices. The function of the Internet of Things (IoT) in mechanical engineering. IoT connectivity enables real-time data sharing between mechanical systems and centralized control hubs and providing data-driven insights that guide decision-making.

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Alumni Event

Topic
The Impact of Technology on Mechanical Engineering

Organised by
Francis Xavier Alumni Association

In association with
Department of Mechanical Engineering

Resource Person
Mr. A. Alban Santhosh
Founder
Life Changers Academy

08th AUGUST 2023
11.00 AM - 12.00 NOON

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

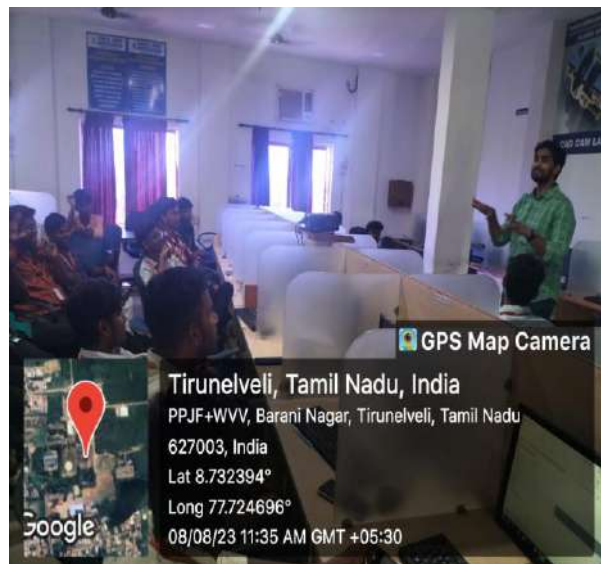
Dr. R. Samuel Hansen
HOD / Mech

Dr. R.K.A. Bhalaji
Assistant Professor / MECH

Mr. S. Krishnakumar
Director, FXAA

Dr. K. Jayakumar
GM, Development

Dr. V. Velmurugan
Principal



Overall, the seminar underscored the collaborative and cross-disciplinary nature of modern mechanical engineering. By integrating technology, materials science, AI, and more, engineers are poised to create innovative solutions that push the boundaries of what's possible in various industries. The insights shared during the seminar

inspired participants to embrace these advancements and apply them effectively in their professional endeavors.

Activity Code: ACT/23-24/001808

Programme: How to seek an Education Abroad

Date: 11-08-2023

Resource Person: Mr.J.K.Robinson.,M.S, Germany

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Second year Mechanical students. Mr.J.K.Robinson.,M.S, Germany delivered the guest lecture on “How to seek an Education Abroad”. Dr. R. Samuel Hansen, HOD-MECH extends a cordial greeting and introduces the resource person, who thanks management for the opportunity.

Pursuing education abroad is a life-changing decision that offers individuals the opportunity to gain a global perspective, immerse themselves in different cultures, and receive quality education. Seeking education abroad is a significant step for individuals looking to enhance their academic and personal growth. The steps and considerations involved in seeking education abroad are as follows.

Financial Planning: Education abroad comes with financial implications. Calculate the total cost of tuition, accommodation, living expenses, travel, and insurance. Research scholarships, grants, and financial aid options available to international students.

Language Proficiency: Many institutions require proof of English language proficiency through standardized tests like IELTS or TOEFL. If necessary, prepare for and take these exams to demonstrate your language skills.

Admission Process: Prepare necessary documents, such as transcripts, letters of recommendation, a well-crafted statement of purpose (SOP), and standardized test scores (GRE, GMAT, etc.). Pay close attention to application deadlines and submit your application well in advance.



Overall, the guest lecture gave the students to seeking education abroad requires meticulous planning, research, and preparation. By setting clear goals, conducting thorough research, understanding financial implications, meeting admission requirements, and adapting to new cultural environments, you can embark on a transformative journey that enriches your personal and academic growth.

Activity Code: ACT/23-24/002029

Programme: Scope of Mechanical Engineers in the Design Field

Date: 14-08-2023

**Resource Person: Mr.M.Essaki., Front Developer (REACT JS),
Accubits Technologies, Bangalore**

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Third year Mechanical students. Mr. M.Essaki (2023 Batch Alumni), Front Developer (REACT JS), Accubits Technologies, Bangalore delivered the guest lecture on “Scope of Mechanical Engineers in Design Field”. Dr.R.Samuel Hansen., HOD-MECH extends a warm welcome and introduces the resource. The resource person thanked the management for giving him this opportunity.

The guest lecture on Scope of Mechanical Engineers in Design Field provided mechanical engineers wield a profound influence on the

trajectory of technological advancement. Their adeptness at fostering product innovation, employing simulation techniques, creatively surmounting challenges, and championing sustainable design principles establishes them as pivotal contributors across diverse industries. The expansive scope of mechanical engineering further augments the promising horizon for professionals deeply committed to nurturing creativity, intricate problem-solving, and the relentless pursuit of technological evolution.

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FX ALUMNI

Alumni Guest Lecture
Scope of Mechanical Engineers in Design Field

Mr. M. Esakki
Front End Developer (REACT JS),
Accubits Technologies,
Bangalore. **Resource Person**

14th AUGUST, 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.

Convenor
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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for Innovation and Entrepreneurship Activities



Overall, the guest lecture gave the mechanical engineers in the design field a remarkable influence over the trajectory of technological development. Their proficiency in product innovation, simulation, creative resolution, and sustainable design embeds them as principal contributors across industries. The expansive scope of mechanical engineering augments the promising future of professionals committed to nurturing creativity, problem-solving, and technological advancement.

Activity Code: ACT/23-24/002238

Programme: Role of Engineers in Digital Marketing

Date: 25-08-2023

Resource Person: Mr. J. Ajin Benitto., Hackwit Technologies, Chennai

FX Alumni Association organized a guest lecture in association with department of Mechanical Engineering for the Third year Mechanical

students. Mr. J. Ajin Benitto (2023 Batch Alumni), Hackwit Technologies, Chennai delivered the guest lecture on “Role of Engineers in Digital Marketing”. Dr.R.Samuel Hansen., HOD-MECH extend a warm and heartfelt welcome to resource person. The resource person expressed his gratitude to the management for giving him this chance.

In the contemporary landscape of digital marketing, engineers are assuming a pivotal role due to their technical prowess and analytical aptitude. The multifaceted role engineers play in the realm of digital marketing are as follows.

SEO and Technical Optimization: Engineers contribute to the technical aspects of digital marketing, particularly Search Engine Optimization (SEO). They work on website optimization, ensuring that websites are responsive, load quickly, and provide a seamless user experience.

Content Management Systems (CMS): Engineers are adept at managing and customizing Content Management Systems (CMS), which form the backbone of websites. Engineers ensure that the technical aspects of the CMS facilitate easy content updates and maintenance.

Data Privacy and Security: Engineers are implement encryption, authentication protocols, and security measures to protect customer data from breaches and unauthorized access.

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Alumni Event

Topic
Role of Engineers in Digital Marketing

Organised by
Francis Xavier Alumni Association

Resource Person
Mr. J. AJIN BENITTO
Hackwit Technologies,
Chennai

In association with
Department of Mechanical Engineering

25th AUGUST 2023
11.00 AM - 12.00 NOON

FX ALUMNI

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

Dr. R. Samuel Hansen
HOD / Mech

Mr. S. Krishnakumar
Director, FXAA

Dr. K. Jeyakumar
GM, Development

Dr. V. Velmurugan
Principal



Overall, the guest lecture gave the students to bring their technical

expertise and problem-solving skills to the realm of digital marketing. Their contributions span data analysis, technical optimization, automation, security, and the integration of innovative technologies. By harnessing their capabilities, businesses can create effective digital marketing strategies that drive growth and success in today's technologically advanced landscape.

PATENT PUBLISHED

Professors of Dr. R.K.A. Bhalaji, Dr. V.T. Vimalananth, Dr. R. Samuel Hansen, and Mr. A. Alban Santhosh S, PG Students, published a patent on 18.08.2023. The title of the invention is SMART BLADELESS FAN, and the application number is 202341042324 A.

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202341042324 A

(19) INDIA

(22) Date of filing of Application :24/06/2023

(43) Publication Date : 18/08/2023

(54) Title of the invention : SMART BLADELESS FAN

(51) International classification :A61B 173200, F04D 250800, F04F 051600, F04F 054400, F04F 054600
 (86) International Application No :PCT//
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 (87) International Publication No : NA
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