DEPARTMENT OF MECHANICAL ENGINEERING

MECHANIX G WORLD

TECHNICAL MAGZINE

2022-23, EDITION-3

A GRADE ACCREDITED BY NAAC NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

GANGA INSTITUTE OF TECHNOLOGY & MANAGEMENT

Kablana, Distt. Jhajjar (Haryana)

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GANGA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, KABLANA

GANGA INSTITUTE OF TECHNOLOGY AND MANAGEMENT

DEPARTMENT OF MECHANICAL ENGINEERING

CONTENT

DIRECTOR'S MESSAGE

DR. AMAN AGGARWAL
GITAM, KABLANA

"It gives me great pleasure to extend my warmest greetings to all the passionate individuals and engineering enthusiasts in the mechanical world, as we proudly present the latest edition of "Mechanix G World." I am thrilled to witness the incredible strides and innovations that our mechanical engineering department has achieved. With each passing day, our field evolves; pushing the boundaries of what is possible. I extend my heartfelt gratitude to the editorial team, authors, and reviewers for their unwavering commitment to maintaining the highest standards of content. Together, let us continue to explore, innovate, and advance the realm of Mechanical engineering. I encourage all readers to immerse themselves in the exciting world of Mechanical engineering and be inspired to shape the future."

HOD'S MESSAGE

MR. VIVEK

GITAM, KABLANA

Welcome to the latest edition of our "Mechanix G World" Magazine! We invite you to explore the forefront of mechanical engineering excellence. I am immensely proud of the passion and dedication demonstrated by our community. I encourage you to immerse yourselves in this enriching knowledge, insights, and inspiration collection. This magazine celebrates the relentless pursuit of knowledge, creativity, and problem-solving that define our field. Your passion and dedication make our department a centre of excellence. We hope this edition sparks your curiosity and fuels your drive to create a better, more innovative world.

VISION MISSION OF INSTITUTE

VISION

GITAM aims to be an outstanding Institue in India through academic excellence in the field of Technology and Management to fulfill the need of the Industry and serve the society.

MISSION

- To Provide healthy environment to our students as well as faculty members.
- To achieve excellence in technical education
- To promote holistic development of students through interaction with alumni, academia, Industry and expert lectures.
- To attract nurture and retain the best faculty and technical manpower.
- To promote research and development Initiatives.
- To contribute to the society by inculcating professional ethics in the students.

VISION MISSION OF DEPARTMENT OF MECHANICAL ENGINEERING

VISION

"To become a center of excellence in the field of Mechanical Engineering, committed to address societal challenges and evolving needs of industry."

MISSION

- To achieve excellence in mechanical engineering by providing outcome-based education an a healthy learning environment.
- To enhance the student's technical and entrepreneurial skills by providing advanced learning facilities and co-curricular activities.
- To inculcate professional ethics, leadership qualities, and moral and social values among students through interaction with alumni and experts from industry and academia.
- To encourage students to research and innovate through project works, workshops, conferences, training sessions, etc.

PROGRAM OUTCOMES

Engineering Graduates will be able to:

- **PO-1 Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization 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 IT tools including prediction and modeling to complex engineering activities with an understanding of the limitation.
- **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 Teamwork:** 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 the set to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary 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.

PEO (PROGRAMME EDUCATIONAL OUTCOMES

The students will be able to:

- **PEO-1** To produce competent Mechanical Engineers, capable of applying the knowledge of contemporary Science and Technology, to meet the challenges in Mechanical and allied Engineering fields.
- **PEO-2** To prepare the Mechanical Engineering graduates to work in diverse fields in different capacities involving individual and teamwork.
- **PEO-3** To inculcate among the students a sense of ethics, morality, creativity, leadership, teamwork, and professionalism.
- **PEO-4** To instill in the students, the ability to take up innovative research projects and to conduct investigations of complex Mechanical Engineering problems using research-based methods.

PSO (PROGRAMME SPECIFIC OUTCOMES

The students will be able to:

- **PSO-1** Solve the real life problems by integrating design, thermal and manufacturing areas of Mechanical Engineering.
- **PSO-2** Adapt to rapid changes in the field of Mechanical Engineering and excel in a multidisciplinary work environment.

PEO (PROGRAMME EDUCATIONAL OUTCOMES

"The Department of Mechanical Engineering was established in 2010 with the aim to provide the best knowledge and environment to ensure complete success in whatever field the students choose. This Department is one of the key strength of the Institute. It is making very sincere efforts to produce excellent Mechanical Engineering graduates to meet the present day needs of organizations and the Industry. The experienced and dedicated faculties along with its excellent facilities provide the necessary resources to keep the students updated with the latest industrial trends. The department has created state-of–the-art infrastructure in terms of Workshops, Laboratories and other facilities."

PROGRAMME	DURATION	INTAKE
B.TECH MECHANICAL ENGINEERING	4 YEARS	120
B.TECH MECHANICAL ENGINEERING (LEET)	3 YEARS	12
M.TECH MACHINE DESIGN	2 YEARS	12
M.TECH MANUFACTURING AND AUTOMATION	2 YEARS	18

Why GITAM?	Why ME?	Aspirants often Made Mistakes While Choosing Engineering Branch
Best Academics and Results	Problem-solving opportunities in various industries.	Advised by Parents
State-of-the-art Laboratories	Versatility with a wide range of applications and specializations.	Advised by Relatives
Experienced and dedicated Faculty	Global demand, providing job stability and growth opportunities.	Advised by Friends
Best Placement	Collaboration with diverse engineering disciplines in interdisciplinary teams.	Do not see the Market Scenario after 3-4 Years
Best Infrastructure	Continuous learning and adaptation to new technologies.	Do not See Future Prospects of the Branches

JOB OPPORTUNITIES

PUBLIC SECTOR

PSU: DMRC, BEL, ISRO, ONGC, DRDO, ECIL,BHEL,BARC, NTPC, HPCL, NHPC,POWER GRID, CIL, IOCL, NALCO, VIZAG STEEL SJVNL, IFFCO, AAI, GAIL, SAIL, HAL, BPCL, Railways and many more.....
Defence-Sector: ARMY. NAVY, AIR-FORCE and Paramilitary Forces.

PRIVATE SECTOR

Tata Motors, Larsen & Toubro (L&T), Mahindra & Mahindra, Reliance Industries, Bajaj Auto, Hero MotoCorp, Maruti Suzuki, Godrej & Boyce, Ashok Leyland, Thermax, Suzlon Energy, TATA Power, Escorts Limited, TVS Motor Company

SPECIALISATIONS

» Aeronautical Engineer: Performs and supervises the design, development, manufacture and maintenance work of all types of flight vehicles.
» Automotive Engineer: design, manufacture and operate ground-based vehicles, such as motorcycles, automobiles, buses and trucks and their respective engineering subsystems.
» Consultant Engineer: undertake independent contract work for clients in a particular field. Consulting Engineers generally work on a project-by-project basis for a variety of clients.
» Engineering Project Manager: plan, administer and review engineering and technical projects.
» Manufacturing Systems Engineer: design and improve systems and equipment that complete tasks accurately and change raw materials into products with minimal time, materials and energy waste.
» Mechanical Design Engineer: design new machines, equipment or systems taking into account cost, availability of materials, strength and maintenance requirements.
» Mining Engineer: plan and direct the engineering aspects of extracting mineral resources from the earth.

ENTREPRENEUR

Nuts and Bolts Manufacturing, Solar Panel Installation, Product Assembly Service, Mechanical Engineering Consultancy Firm, Supply Chain Management, Chemical Industry Machines Designing, CNC Machining Business, E-waste Recycling, Machinery Designing, Machinery Distribution, Water disposal machine, Aluminium doors and windows manufacturing unit, Scrap metal business, Manufacturing household gadgets, Mechanical industry machines, Manufacturing of defence weapons, CCTV manufacturing, Mining equipment lease, Generator maintenance services, Fitness equipment manufacturing, Metal sign boards, Outdoor bicycle rack, Teach CAD/CAM/CAE, Repair of automobiles, Manufacturing 3D printers, Training school, Customization of automobiles

FACULTY EDITOR'S

MR. PRADEEP

STUDENT EDITOR'S

PALLAVI DEVI	19ME015	2022-23
MOHIT	20ME007	2022-23
VINIT	20ME010	2022-23

POETRY

"The roar of engines, the hum of turbines spinning, Efficiency and power, in harmony, they're winning. From bridges to airplanes, structures that stand tall, Mechanical marvels, conquering challenges, one and all.

Bridges of steel span vast divides, Connecting lands with soaring strides. Airplanes soar with grace and might, Carrying dreams on wings of flight."

INTRODUCTION TO VIRTUAL REALITY

MR. PRADEEP KUMAR
AP (ME)

Over the last four decades Dassault Systèmes has led the world in the application of 3D technology in design and engineering. From its origins in aerospace, it now supports a myriad of manufacturing disciplines. 3D design is central to Dassault Systèmes' philosophy and a primary feature of its entire software portfolio. This focus has made them a natural partner for the HTC VIVE Pro. By using its CATIA Natural Sketch platform Dassault Systèmes is upending traditional processes of design, manufacturing, and testing—improving collaboration and reducing time to market.

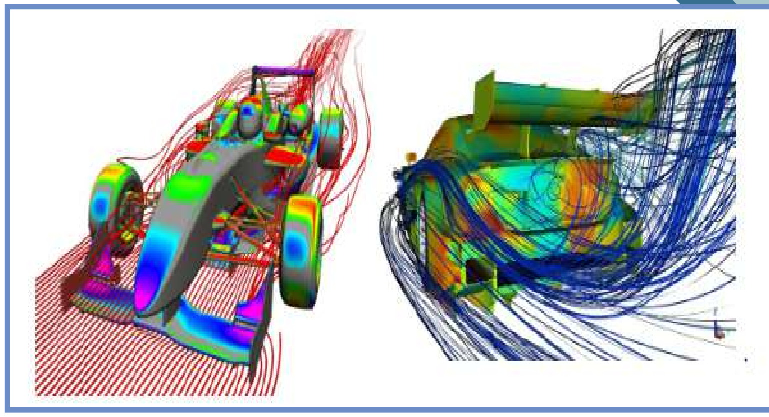
Design workflows are typically linear. They begin with sketches, then design, followed by computer-aided design (CAD), industrialization, and eventually full production. By the time the product assumes its first 3D existence, the original concept on which it was based might be lost in multiple iterations. Meanwhile, in the time it takes for the design to reach its first physical form, consumers' evolving tastes—as well as competitors' offerings—may have moved on. Additionally, the conventional sketched concept approach does not lend itself easily to collaboration. It also limits output to the creative and technical abilities of a single designer. With the help of the HTC VIVE Pro, these conventions and their limitations are being challenged by Dassault Systèmes—reinventing how complex design and engineering concepts are brought to life.

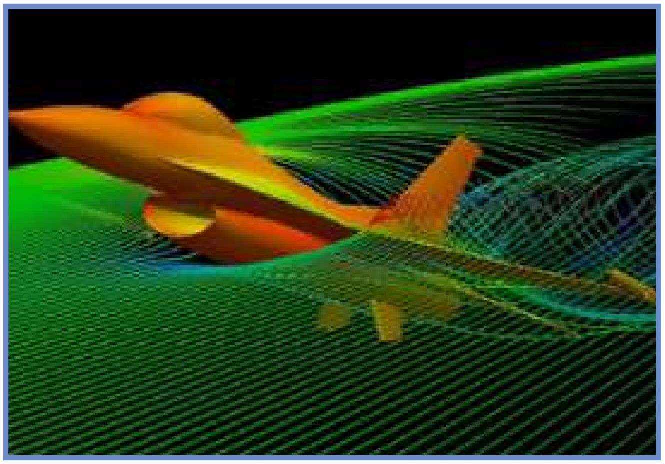
INTRODUCTION TO CFD

MR.VIVEK
HOD (ME)

Computational fluid dynamics (CFD) is a science that, with the help of digital computers, produces quantitative predictions of fluid-flow phenomena based on the conservation laws (conservation of mass, momentum, and energy) governing fluid motion.

The basis of CFD is rooted in the Navier-Stokes equations, which were finalized by Sir George Stokes when he added the viscous terms in the mid-19th century. Using these equations, along with computers, Los Alamos National Lab developed many modeling techniques for fluid flow in the 1950s and 1960s





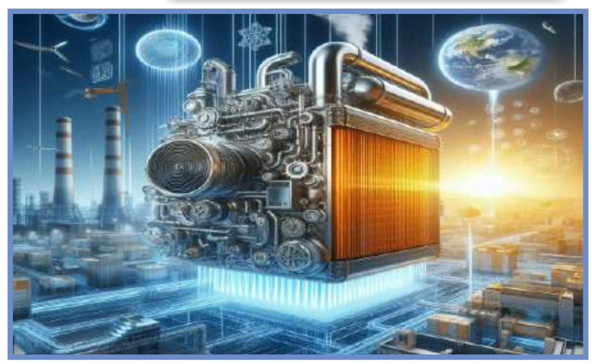
Main advantages of the use of Computational Fluid Dynamics (CFD):

- Cost savings. ...
- Increased accuracy. ...
- Enhanced understanding. ...
- Virtual prototyping. ...
- Improved safety. ...
- Increased design options. ...
- Better visualization.

"Advances in Heat Exchanger Technology: Improving Energy Efficiency."

DR. DEVENDER SINGH PUNIA
AP (ME)

Heat exchangers play a pivotal role in optimizing energy usage and improving performance in various industries. According to Yash Sharma, Assistant Manager, Sales cum Development, Spirotech Heat Exchangers, recent innovations in compact designs, nanotechnology, and sustainable materials are shaping the future of heat exchange technology. These advancements are set to drive energy efficiency and sustainability across various applications.



Challenges: Engineers and designers face several hurdles when choosing the right heat exchanger for specific tasks. These challenges encompass understanding the project's needs, selecting the appropriate refrigerant, accommodating spatial limitations, ensuring sustainability, and adhering to regulatory requirements. Precisely determining the system's temperature and pressure criteria is paramount, as different heat exchangers are suitable for distinct temperature and pressure ranges. Additionally, calculating the necessary heat transfer rate aids in selecting a heat exchanger with the right surface area and fluid flow rate.In light of the growing need to reduce reliance on factors contributing to global warming, selecting a refrigerant that complies with environmental laws and mitigates the impact of climate change is increasingly important.

Advancements in Soft Robotics: Paving the Way for Innovations in Healthcare and Industry

MR.MANMOHAN
AP (ME)

The field of robotics has witnessed a paradigm shift with the emergence of soft robotics—a subfield that diverges from traditional rigid robotic structures, mimicking the flexibility and adaptability found in natural organisms. This article explores the recent advancements in soft robotics and its groundbreaking applications in healthcare and industrial settings, highlighting how this innovative technology is reshaping the future of mechanical engineering.

Understanding Soft Robotics: Soft robotics involves the design and construction of robots using compliant and deformable materials. Unlike their rigid counterparts, soft robots can bend, stretch, and conform to their surroundings. This characteristic makes them exceptionally well-suited for applications where traditional robots may struggle, such as in unstructured environments or tasks requiring delicate interactions.

Soft Robotics in Healthcare:

Robotic Surgery: Soft robotic systems are increasingly being integrated into surgical procedures. Their flexibility allows for more precise and minimally invasive surgeries. Surgeons can use soft robotic tools to navigate complex anatomical structures with enhanced dexterity, reducing patient recovery times.

Assistive Devices: Soft robots are playing a pivotal role in the development of assistive devices for individuals with mobility impairments. Wearable soft exoskeletons, for example, provide support to users, enhancing their mobility and quality of life.

Rehabilitation Robotics: Soft robotic devices are being utilized in rehabilitation settings to assist patients in regaining motor functions. These devices can adapt to the specific needs of individual patients, providing tailored assistance in the recovery process.

Soft Robotics in Industry:

Human-Robot Collaboration: Traditional industrial robots are often kept behind safety barriers due to their rigid structures. Soft robots, however, can work collaboratively with humans, facilitating a safer and more efficient interaction in shared workspaces.

Material Handling and Gripping: Soft robotic grippers are ideal for handling delicate or irregularly shaped objects. These grippers can conform to the shape of the object being handled, providing a gentler and more adaptable approach in manufacturing and logistics.

Inspecting and Manipulating Fragile Objects: In industries like electronics and food processing, where delicate handling is crucial, soft robots excel in inspecting and manipulating fragile objects without causing damage.

Challenges and Future Directions:

While soft robotics presents numerous opportunities, challenges persist, including control complexity and material limitations. Researchers and engineers are actively working on addressing these challenges to further unlock the potential of soft robotics in diverse applications.

Conclusion:

Soft robotics represents a transformative shift in the field of mechanical engineering, offering innovative solutions to longstanding challenges. As advancements continue, the integration of soft robotics in healthcare and industry is poised to redefine how we approach surgery, rehabilitation, manufacturing, and more. The collaborative efforts of researchers, engineers, and practitioners in this field will undoubtedly lead to even more groundbreaking applications, shaping the future of robotics and its impact on society.

CERTIFICATE COURSE

The Department of Mechanical Engineering conducted a five days certificate course on "INDUSTRIAL ROBOTICS" from 30/09/2022 to 28/10/2022. Mr. Parveen Kumar was the resource person of this interactive session.

Objective: This course is designed to develop student's skills in kinematics analysis of robot systems, trajectory planning and robot control.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DEPARTMENT OF MECHANICAL ENGINEERING
Certificate
"INDUSTRIAL ROBOTICS"
Coordinator
Head of Department

Course Outcomes:

- **Demonstrate an ability to apply spatial transformation to obtain forward kinematics equation of robot manipulators.**
- **Demonstrate an ability to solve inverse kinematics of simple robot manipulators.**
- **Demonstrate an ability to obtain the Jacobian matrix and use it to identify singularities.**

CERTIFICATE COURSE

The Department of Mechanical Engineering conducted a five days certificate course on "CNC MACHINING" from 30/01/2023 to 03/02/2023. Mr. Anand Tyagi was the resource person of this interactive session.

Objective: This course covers Fundamentals and concepts of CNC Machining and offers more hands on experience through which the participants will be developing CNC programs and machining complicated shapes by using the CNC machine tools.


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GANGA INSTITUTE OF TECHNOLOGY AND MANAGEMENT
DEPARTMENT OF MECHANICAL ENGINEERING
Bahadurgarh-Jhajjar Road, Kablana (Jhajjar)-Haryana
Certificate
This is to certify that Mr/Ms. Chetan
S/D/o Sh. Vinod Kumar of B.Tech (ME)
bearing Roll no. 21ME001 has successfully completed the course on CNC Machining.
Dated
Coordinator
Head of Department

Course Outcomes:

- **Have knowledge of work and tool holding devices on CNC Machines.**
- **Job setting and simple programming on CNC Machines.**
- **Simulate tool movements programs using software.**
- **Perform machining operations on CNC Machines.**
- **Checking the quality of machined components**

INDUSTRIAL VISIT AT "EVEREST BLOWERS PVT LTD"

Objective: The visit was organized by the college in M/s Everest Blowers Private Limited to provide basic knowledge of operation and experience the working environment of the production unit. So that students are capable enough to correlate the theoretical knowledge with practical knowledge.

The product range of includes:

- Twin & Tri Lobe Roots Blowers (Positive Displacement).
- Heli-Hybrid ® range of Helical Blowers for Energy Efficiency and Low noise..
- Gear-Less Turbo Blowers (Air Bearing Design).
- Integrally Geared Turbo Blowers for high volume and Differential pressure requirement.

INDUSTRIAL VISIT AT "MEDI PLUS INDIA LTD"

Objevtive: Purpose of visit was to provide an opportunity to the students to have real insight into Moulding processes and experience the working environment of the production unit. So that students will be able to compare their theoretical knowledge with the practical one.

CONCLUSION: This industrial visit will benefit the students in terms of learning working culture & various machining processes like Injection Moulding, Automatic Assembling and Design & Development. During plant visit, students passionately interacted with the workshop supervisor to learn all the basics of concerned processes and cleared their doubts. Overall it was nice and fruitful to visit MediPlus India Ltd.

INDUSTRIAL VISIT AT "KORUS ENGINEERING SOLUTION PVT LTD"

Objective: Purpose of visit was to provide an opportunity to the students to have real insight into machining processes and experience the working environment on the shop floor area. So that students will be able to compare their theoretical knowledge with the practical one.

About Korus Engineering Pvt Ltd: KORUS Engineering Solutions is associated with the development of the steel industry, products of which touch everyday life. In the company, there are a team of more than 200 highly qualified and experienced professionals in all the relevant Technical and Engineering Disciplines.

CONCLUSION: This industrial visit will benefit the students in terms of learning working culture on shop floor area & various machining processes like turning, taper turning, drilling, welding, boring , working in piping industry,Automatic Assembling and Design & Development. During plant visit, students passionately interacted with the Senior retired engineer from various PSUs (SAIL, JINDAL STEEL,L&T) to learn all the basics of concerned processes and cleared their doubts. Overall it was very nice, knowledgeable and fruitful to visit Korus Engineering solutions Pvt Ltd.

INDUSTRIAL VISIT AT "JAGGA FOOTWEAR PVT LTD"

Objective: Purpose of visit was to provide an opportunity to the students to have real insight into manufacturing processes and experience the working environment on the shop floor area. So that students will be able to compare their theoretical knowledge with the practical one.

India is the second largest global producer of footwear after China, accounting for 13% of global footwear production of 16 billion pairs. India produces 2065 million pairs of different categories of footwear (leather footwear - 909 million pairs, leather shoe uppers - 100 million pairs and non-leather footwear - 1056 million pairs).India exports about 115 million pairs. Thus, nearly 95% of its production goes to meet its own domestic demand.

CONCLUSION: This industrial visit benefit the students in terms of learning working culture in a footwear manufacturing unit. The students understand the basics of design and manufacturing steps in making footwear's. During plant visit, students passionately interacted with the senior retired engineer to learn all the basics of concerned processes and cleared their doubts. Overall it was very nice, knowledgeable and fruitful to visit Jagga Footwear Pvt Ltd.

EXPERT LECTURE ON "3D PRINTING & ADDITIVE MANUFACTURING"

Expert Lecture on "3D printing'' was organized for students of the Mechanical department on 20th of Oct 2022. Dr. Deepak Chhabra (Assistant Professor UIET, MDU) was invited as the expert.

Dr. Deepak Chhabra explained various types of 3D printers, their working principle, the advantages and disadvantages of various printers and the variety of applications of 3D printers. The expert also demonstrated some 3D printed models. The curiosity among the students was at a very high level and they were quite excited to know more about this advanced technology. The students asked many questions and the expert answered them up to their satisfaction level and cleared all the doubts. After completing of lecture, the students were given a chance to see the one more live demo of 3D printing and also to see some 3D printed objects.

EXPERT LECTURE ON "ERGONOMICS"

Expert Lecture on "Ergonomics in Design" was organized for students of the Mechanical department on 17th of Nov 2022. Dr. Sandeep Singh Kharb (Assistant Professor, Ch. Ranbir Singh State Institute of Engineering and Technology) was invited as the expert.

Table of Content:

- **Ergonomics basics and its domains**
- **Design approach**
- **Elements of product design**
- **Ergonomics in machine tool design**
- **Ergonomics in m/c tool safety**
- **Ergonomic factors for advanced manufacturing systems**
- **Ergonomics problems in new technologies i.e. Industry 5.0**

"The study of the physical interaction of workers with their tools, machines, and materials so as to improve the worker's performance while minimizing the risk of musculoskeletal disorders."

EXPERT LECTURE ON "SOLID WORKS"

Expert Lecture on "SOLID WORKS" was organized for students of the Mechanical department on 23rd of November 2022. Mr. Pankaj Bhatia was invited as the expert. Solid Works is a solid modeling computer-aided design (CAD) and computer-aided engineering (CAE) application published by Dassault Systems.

Objective :

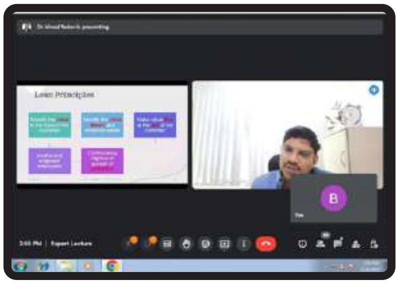
- **To Bridge the gap between Academic and Industrial Practice regarding 3D Modeling and Analysis in Design of components.**
- **To Explore Computer Aided Designing.**
- **To describe the fundamentals of Sketching, Part Modeling, Assembly, Detailing and Basic of Static Analysis.**
- **To make the participants aware about the concept of SolidWorks 3D modelling software.**
- **To provide experience to the participants making the topic more clear.**

Outcomes:

- **Mr. Pankaj Bhatia, explained basics of CAD and how to create a sketch, part, prepare assembly and detailing (drawing sheet work).**
- **Mr. Pankaj Bhatia, explained how to apply material to components, how to check mass properties in software. Also show one demonstration of static analysis on components.**

After completing the lecture, the students were given a chance to ask doubts regarding Solid Works.

EXPERT LECTURE ON "LEAN MANUFACTURING"



Expert Lecture on "Lean Manufacturing" was organized for students of the Mechanical department on 24th of February 2023. Dr. Vinod Yadav (Assistant Professor, School of Automobile, Mechanical & Mechatronics Engineering, Manipal University, Jaipur) was invited as the expert.

Lean manufacturing: **Lean manufacturing is a production process based on an ideology of maximizing productivity while simultaneously minimizing waste within a manufacturing operation. The lean principle sees waste is anything that doesn't add value that the customers are willing to pay for.**

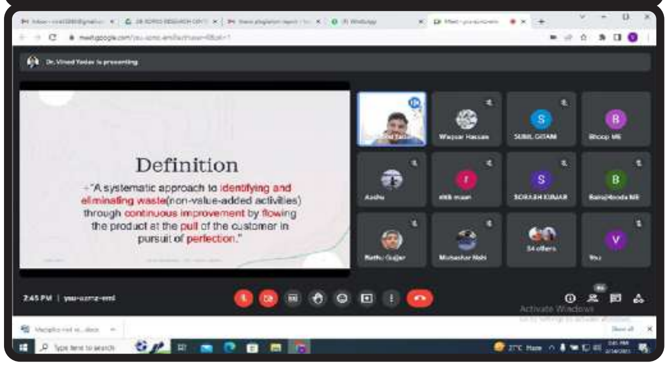
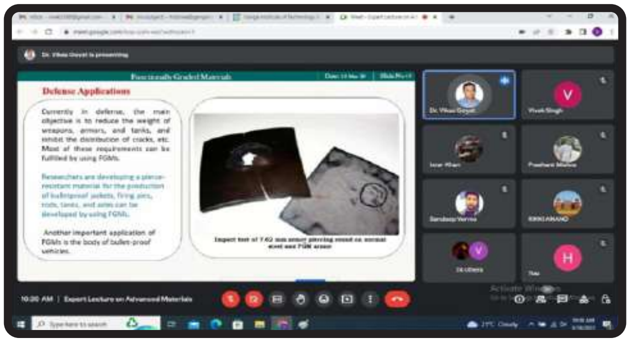


Table of Content:

- Lean Manufacturing basics and its domains
- Evolution of Lean Manufacturing
- Lean Philosophy
- Guiding Principles of Lean Manufacturing
- Wastes Associated With Lean Manufacturing
- Basics of TPS 14 Principles
- Lean Manufacturing Tools (5S, Value Stream Mapping, Kaizen, Kanban, SMED, Poka Yoke, Six Sigma etc.)

EXPERT LECTURE ON "ADVANCE MATERIALS"



An Expert Lecture on "Advanced Materials" was organized for students of the Mechanical department on 18th of March 2023. Dr. Vikas Goyat (Assistant Professor, SRM University, Gaziabad) was invited as the expert.

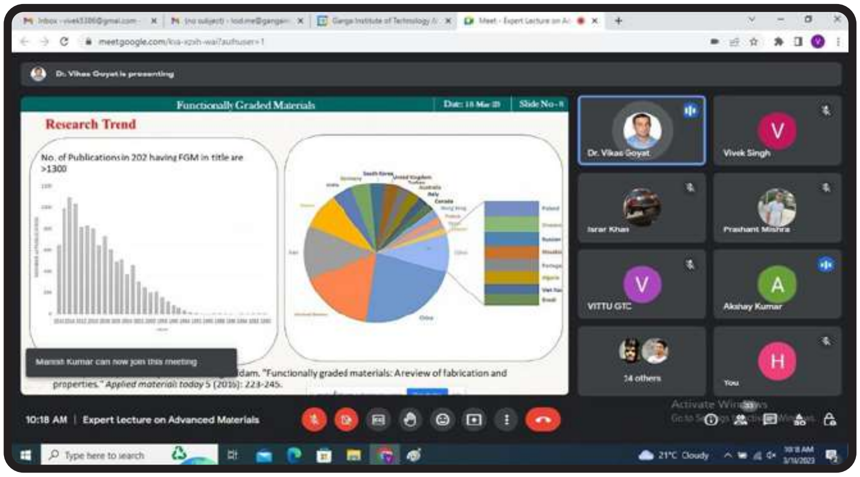


Table of Content:

- Introduction to Functionality Grade Material (FGM).
- Applications.
- Advantages.
- Design & Processes.
- Manufacturing Techniques

EXPERT LECTURE ON “RENEWABLE ENERGY”

An Expert Lecture on “Renewable Energy” was organized for students of the Mechanical department on 21th of April 2023. Dr. Pardeep Sharma (Assistant Professor, MRIEM, Rohtak) was invited as the expert.

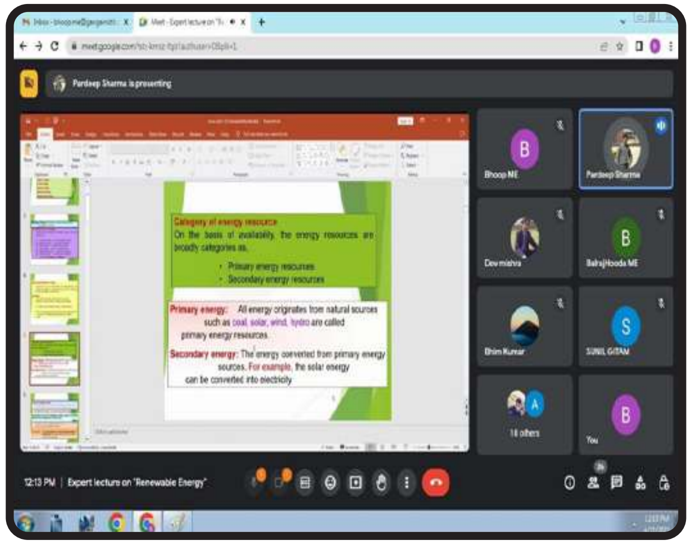


Table of Content:

- Introduction
- Resource Base
- Renewable Electricity Generation Technologies
- Economics of Renewable Electricity
- Environmental Impacts of Renewable Electricity Generation
- Deployment of Renewable Electric Energy

WORKSHOP ON “INDUSTRIAL DESIGN & DEVELOPMENT WITH SMART MANUFACTURING TECHNOLOGY”

Workshop on “Industrial Design & Development with Smart Manufacturing Technology” was organized for students of the Mechanical Engineering Department on 24th of March 2023. Mr. Kailash was invited as the expert.

Table of Content:

- What is industry 4.0
- Skill required for industry 4.0
- Smart manufacturing development.
- Advance manufacturing department.
- Industrial manufacturing scenario.

Purpose of this workshop is to understand:

- Industrial design and related software technology used in industry.
- Design & prototype development.
- Current industrial need.
- Requirement of industry 4.0

CONCLUSION: Workshop on industry 4.0 in smart manufacturing was arranged for mechanical engineering students for enhancing their technical skill to give them the awareness of industry technology currently in use.

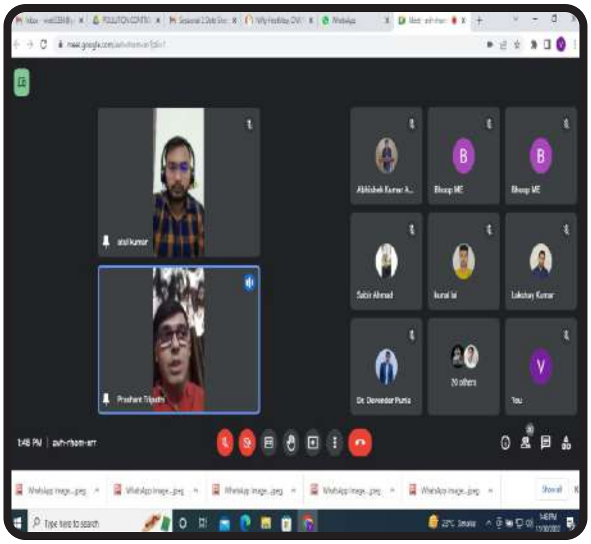
ALUMNI TALK

An Alumni Talk was organized for students of the Mechanical Engineering Department on 24th of November 2022. Mr. Satyam Sharma and Mr. Bashir Miya were invited for Alumni Talk. They interacted with the students and gave career guidance regarding higher studies and jobs in mechanical engineering field. The alumni provided course-specific information to the students.

Objective: Alumni talk helps the student to better understand their curriculum and the use of curriculum during their job. Alumni talks become an eye opener for the students on how to enter a company after completion of their course and use their skill for better performance.

ALUMNI TALK

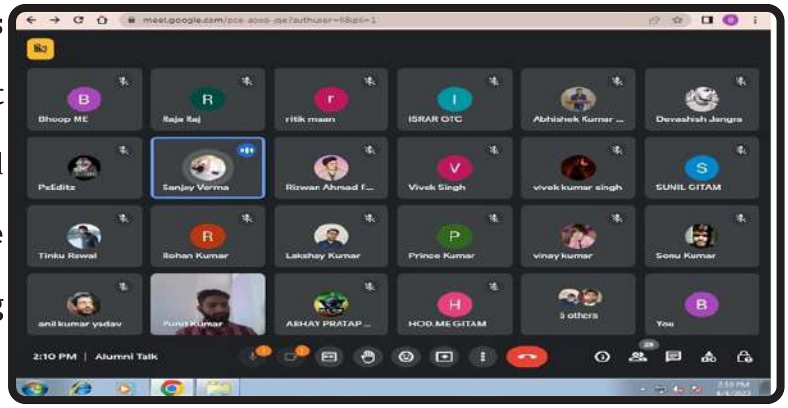
An Alumni Talk was organized for students of the Mechanical Engineering Department on 30th of November 2022. Mr. Prashant Tripathi and Mr. Atul Kumar were invited for Alumni Talk. They interacted with the students and gave career guidance regarding higher studies and jobs in the mechanical engineering field. The alumni provided course-specific information to the students.

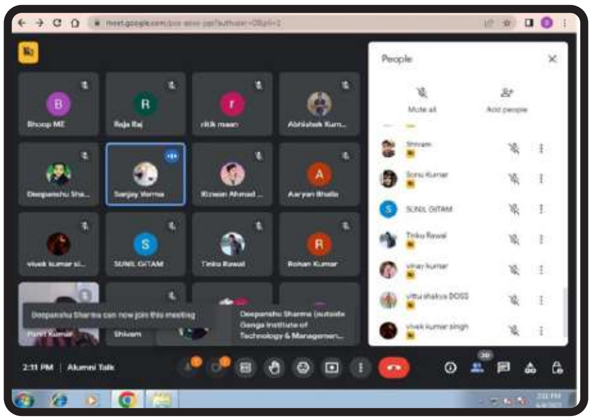


Objective: Alumni talk helps the student to better understand their curriculum and the use of curriculum during their job. Alumni talks become an eye opener for the students on how to enter a company after completion of their course and use their skill for better performance.

ALUMNI TALK

An Alumni Talk was organized for students of the Mechanical Engineering Department on 04th of April 2023. Mr. Sanjay was invited for Alumni Talk. He interacted with the students and gave career guidance regarding jobs in the mechanical engineering field..





Objective: Alumni talk helps the student to better understand their curriculum and the use of curriculum during their job. Alumni talks become an eye opener for the students on how to enter a company after completion of their course and use their skill for better performance.

EXTENSION ACTIVITY ON "POLLUTION CONTROL AWARENESS PROGRAM"

Hazardous air pollutants can affect human health in a number of ways including skin, throat and eye irritation, headaches, nerve and organ damage, and increased risk of cancers etc. This usually happens when the pollutants are breathed in over long periods of time as they can accumulate in our bodies. However some hazardous air pollutants can have a more immediate effect.

Under the program, we discussed about "How to control Pollution"

1. Using public transport.
2. Turn off the lights when not in use.
3. Recycle and Reuse.
4. No to plastic bags.
5. Reduction of forest fires and smoking.
6. Use of fans instead of Air Conditioners.
7. Use filters for chimneys.
8. Request Avoid usage of crackers.
9. Avoid using products with chemicals.
10. Implement forestation.

EXTENSION ACTIVITY ON "DIGITAL PAYMENT AWARENESS PROGRAM"

An extension activity on Digital Payment Awareness Program was organized by Mechanical Department on 30.11.2022 at Govt. Senior Secondary School, Kablana. Knowledge about digital payments (i.e. what is digital payments, what are various modes of digital payments, benefits and losses) was shared with the students. For this activity Mr. Pardeep Kumar and Mr. Rinku from Mechanical Department were main speakers.

The students enjoyed a lot and gained knowledge about digital payments. At the last, a thanks note was given by Principal (Mr. Ajay Khokhar) to the department of Mechanical Engineering, GITAM, Kablana.

EXTENSION ACTIVITY ON "POLLUTION CONTROL AWARENESS PROGRAM"

Hazardous air pollutants can affect human health in a number of ways including skin, throat and eye irritation, headaches, nerve and organ damage, and increased risk of cancers and premature death. This usually happens when the pollutants are breathed in over long periods of time as they can accumulate in our bodies. However some hazardous air pollutants can have a more immediate effect.

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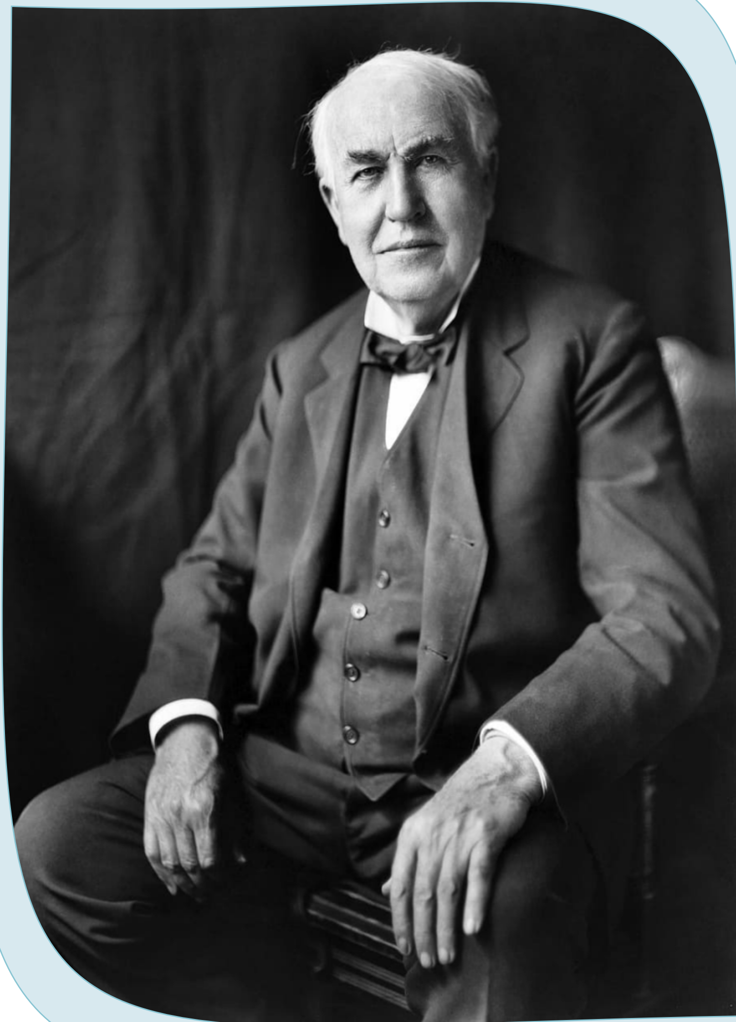

"Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time."

Thomas Edison

PROGRAMMES OFFERED

- M. TECH
- B. TECH (LEET)
- MCA
- B. TECH
- MBA
- BCA
- BBA

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