



MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING

(Accredited by NAAC with A+ Grade)

(An ISO 9001: 2015 Certified Institution)

(A Unit of Rajalaxmi Education Trust®, Mangalore-575001)

Affiliated to V.T.U., Belagavi, Approved by AICTE, New Delhi.

Department of Mechatronics Engineering

Activities in the academic year 2021-22 for Annual Report

The Department of Mechatronics of Mangalore Institute of Technology and Engineering, and its forum, Mechatronics and Automation Club for Exploration (MACx) activities for this academic year was inaugurated on 26th November 2021 by Mr. M Krishna Hegde, Group General Manager, HR, MRPL Mangalore.

The Department of Mechatronics conducted following major activities for the students relevant to industrial and social exposure:

Technical Talk from Industry and Academic experts:

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1	Talk on Importance of Automation in Industries
2	Talk on Engineering Solutions for Rural Development
3	Talk on Process of Extraction of Gold and Role of Mechatronics in Hatti Gold Mines Co. Limited
4	Webinar on AI in Embedded Systems
5	Workshop on IoT and its applications.
6	Talk on How to Set-Up a Business Online & the Processes involved in successfully making a Racing cart
7	Webinar on Talk on Online Business Development in 5 Steps
8	Webinar on “Trends and opportunities in Aerospace Industry

MTR 01: Talk on “Importance of Automation in Industries”

A talk on ‘Importance of Automation in Industries’ was organized on 26th November 2021. The Talk was delivered by Mr. M Krishna Hegde, Group General Manager, HR, MRPL Mangalore. In his address to the students, Mr. M Krishna Hegde gave a brief overview of the following topics: the role of academic activities in placement; the importance of co-curriculum activities alongside the academy; the relationship between teachers and students; the recruitment criteria at Mangalore Refinery and Petrochemical Limited; the advantages of working for public sector companies over private sector companies; the transparency of these organisations; and the

contribution employees make to the advancement of industries after joining their organizations. Participants learned about the role of academic project work in industry, as well as how Gate scores affect MRPL employment and internship opportunities.



Presentation by the Resource Person



Felicitatation of resource person

MTR 02: Talk on “Engineering Solutions for Rural Development”

A talk on “**Engineering Solutions for Rural Development**” was held on 14, December 2021. The Resource person for the talk by Mrs. Manorama Bhat G.V, Consultant, PRESS ALTERNATIVE, TOKYO, JAPAN. The resource person briefed about the limited resources such as electricity, water, income for capital investment- and thus require appropriately designed

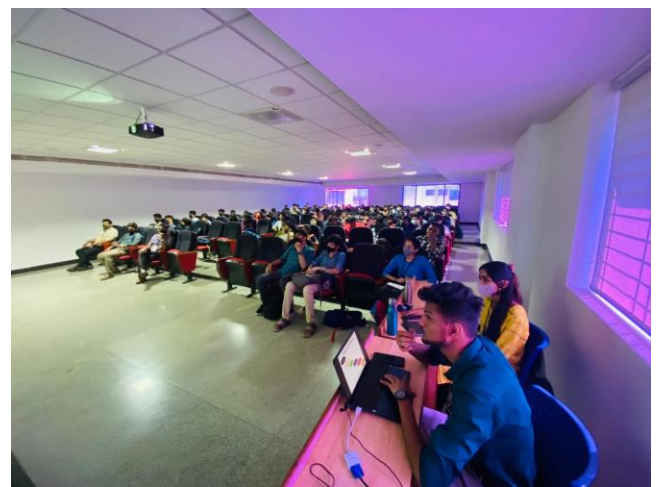
solutions to technological problems. Finally, she has concluded her talk with various opportunities for engineers in rural sector for startups as well employability which will play an vital role in nation building also.



Mrs.ManoramaBhat G.V delivering a session

MTR 03: Talk on “Process of Extraction of Gold and Role ofMechatronics in Hatti Gold Mines Co. Limited”

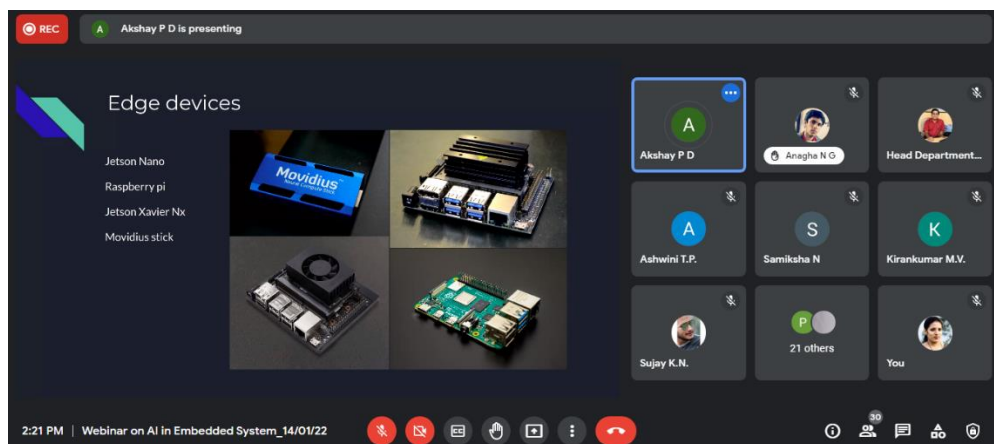
A talk on ‘Process of Extraction of Gold and Role ofMechatronics in Hatti Gold Mines Co. Limited’ was organized on 03rd January 2022. The Talk was delivered by Mr. GhanashyamBailur, Student, 7th Semester, Department of Mechatronics Engineering, Mangalore Institute of Technology & Engineering. Mr. GhanashyamBailur, final gave a talk on his internship experiences in Hatti Gold Mines. He gave an insight on gold extraction and the importance of Mechatronics Systems and the importance of Mechatronics Engineers in the field of gold extraction process. He discussed about the technologies used and also addressed the problems faced in the extraction of gold and how the problems can potentially be solved using Mechatronics Systems. He also shared his personal internship experiences in the gold mine and an idea on how to approach internships.

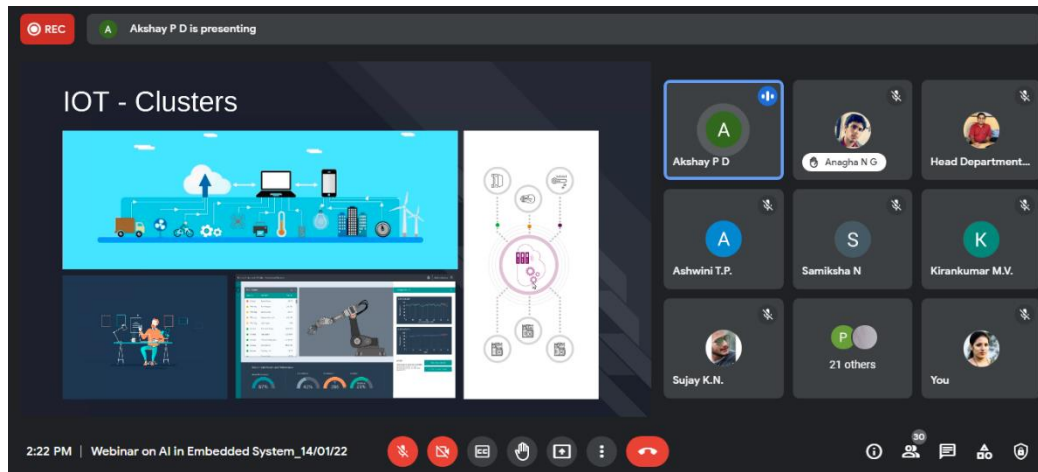


Presentation by Resource Person

MTR 04: Webinar on “AI in Embedded Systems”

A webinar on “**AI in Embedded Systems**” was held on 14, January 2022. The Resource person for the webinar was Mr. Akshay PD, Senior Research and Development Engineer, BOT AI ML Pvt. Ltd. The Speaker of the Session Mr. Akshay PD presented the keynote address on “AI in embedded systems”. He discussed with the students and explained to students that Embedded Systems are more common in day-to-day life than we know about. Such systems are used in various fields like Daily Appliances, Flight Control Auto Pilot, Crop Cutting Machines, Pharmaceutical and Medical Robotics etc. This programme was arranged with the motive of sharing the knowledge and practical experience of Mr. Akshay PD, who has lot of experience in embedded systems and Artificial intelligence. The overall organization and deliverance of the webinar was very helpful and satisfied the participants.

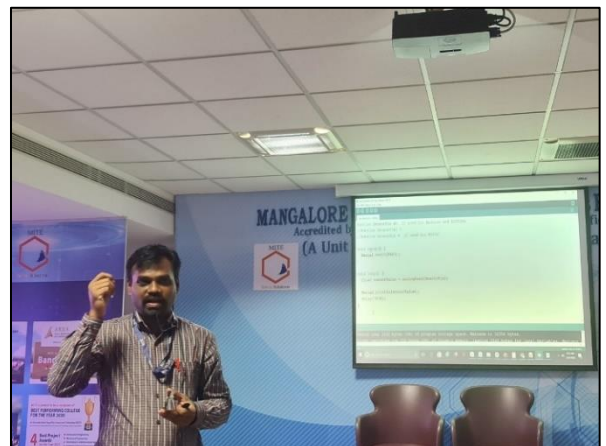
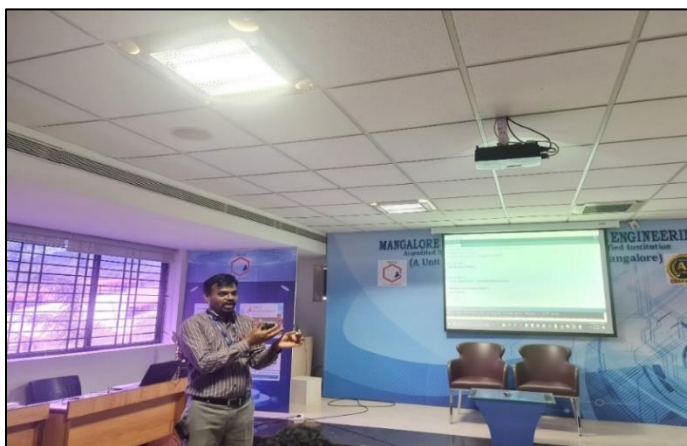




Presentation by Resource Person

MTR 05: Workshop on “IoT and its applications.”

A workshop on “**IoT and its applications**” was conducted on 24, May 2022. The Resource person for the workshop was Dr. Sunil Kumar, Senior Assistant Professor, Department of Computer Science and Engineering, Mangalore Institute of Technology and Engineering, BadagaMijar, Moodbidri. The objective of this workshop to provide Importance of Arduino, Nodemcu, Firebase and Things Board Software. The workshop covered the basics of Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. The workshop continued with a task to read the moisture content of soil and send those contents to the real-time database and display those values using Things Board. Here, he took Arduino as project equipment to demonstrate the IOT concept.



Explanation of Project task

MTR 06: Talk on “How to Set-Up a Business Online & the Processes involved in successfully making a Racing cart”

A talk on “**How to Set-Up a Business Online & the Processes involved in successfully making a Racing cart**” was held on 27, May 2022. The Resource person for the talk was Mr. Ramesh K Mahadev, Chief Operating Officer & Director, AghastyaElectrotech Private Limited, Tumakuru and CEO & Co-Founder, Trividtrans Private Limited, Tumakuru. Mr Ramesh shared experiences of setting up a business online. He briefed the students on the methods that can be used to set-up businesses. He then shed light on the marketing practices that an entrepreneur must employ to make even the smallest of the products reach the target consumers. He also made it clear to have a determined consumer base while setting up the business itself.



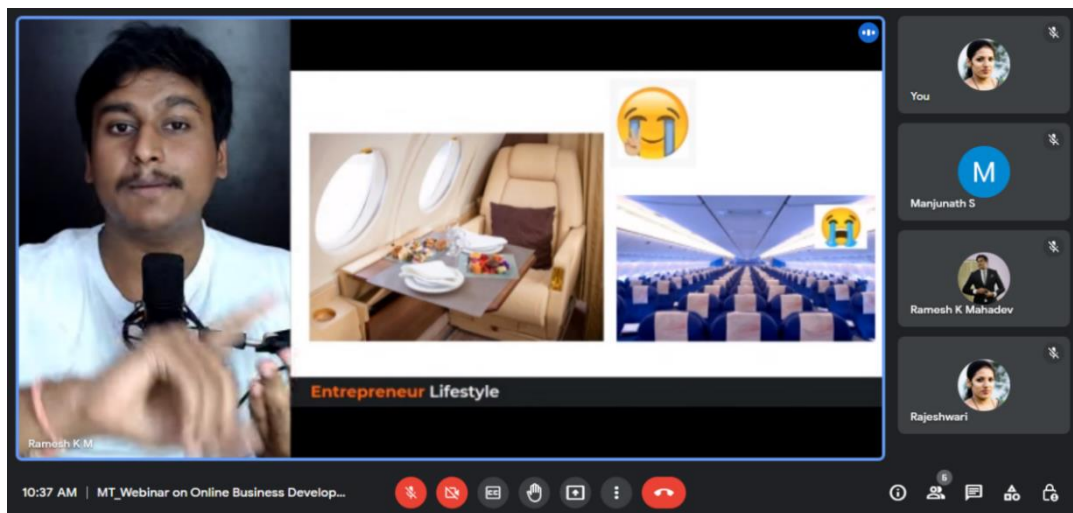
Speaker interacting with students

MTR 07: Webinar on “Talk on Online Business Development in 5 Steps”

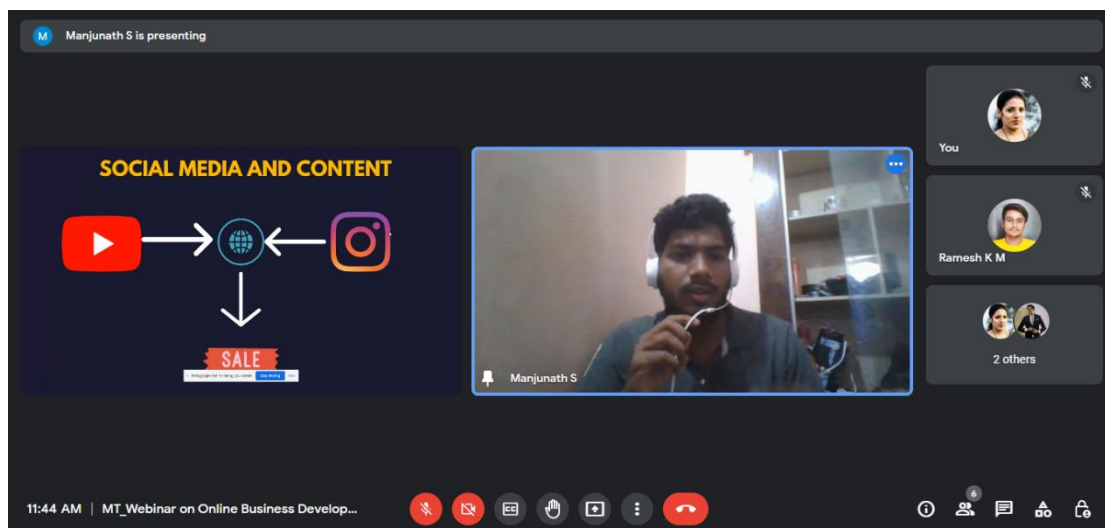
A webinar on “**Talk on Online Business Development in 5 Steps**” was held on 07, July 2022. The Resource person for the webinar was Mr. Ramesh K Mahadev, Chief Operating Officer & Director, AghastyaElectrotech Private Limited, Tumakuru and CEO & Co-Founder, Trividtrans Private Limited, Tumakuru and Mr. Manjunath S, Co-Founder, Crafter visuals: Bengaluru North, Karnataka. Mr Ramesh shared experiences of setting up a business online. He briefed the students on the methods that can be used to set-up businesses. He then shed light on the marketing practices that an entrepreneur must employ to make even the smallest of the products reach the target consumers. He also made it clear to that one must have a determined consumer base while setting up the business itself.

The next session was then handed over to Mr Manjunath S, Alumnus of the College. He was the captain of the Hybrid formula racing team which won almost all the awards in the competition held at Noida. He was also the Team Captain of Octon Racing 3 & 4. He shared how he gained

knowledge and implemented it smartly into the existing work-frame, which brought out splendid results. He informed us about the opportunities available for Mechatronics Engineers in the current industry as start-ups.



Mr Ramesh interacting with the students

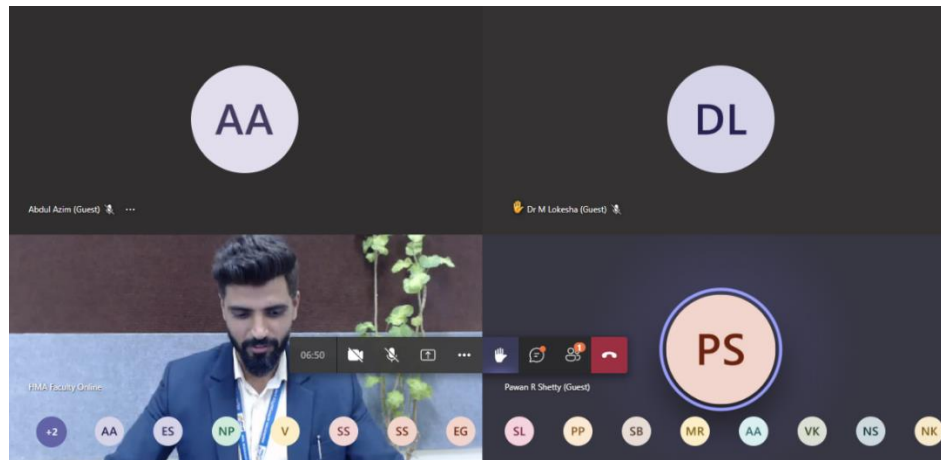


Mr Manjunath interacting with the students

MTR 08: Webinar on “Trends and opportunities in Aerospace Industry”

A webinar on “Trends and opportunities in Aerospace Industry” was held on 19, July 2022. The Resource person for the webinar was Mr. Vinay Tiwari, Head of Industry Relations, Hindustan Aeronautics Limited, Bangalore, India. Resource person briefed that In India, the aerospace industry is growing significantly with the rising activities from both the defence and civil aviation sector. Opportunities for aerospace industries are Strong industry support, Rising initiatives by industry players and Cost-effective environment. The government is taking several

measures to boost domestic manufacturing and growth across industries. He briefed about the Aerospace industries initiatives like *Aero India 2021*, *Foreign Direct Investment*, *Research and Development – Promoting start-ups under ‘Aatmanirbhar Mission’* and **‘Make in India’ initiatives**. India has the competitive advantage over other countries due to low-cost production of components. With low labour cost, presence of resources and supporting government regulations, the country provides huge growth opportunities in the aerospace industry. The sector, backed by the government’s “Make in India” policies, promotes global players to invest in the manufacturing process and optimise it.



Presentation by Resource Person

Faculty Development Programme On ABB IRB1520ID Industrial Robot

A one-day faculty development programme on “**ABB IRB1520ID Industrial Robot**” through Hydac India Pvt Ltd was held at the Department of Mechatronics Engg, MITE, Moodabidri on **16th December 2021**. The resource person for the FDP was Mr. Parashuram, Engineer-IA Projects, Madox Technologies. The resource person covered the basics of the ABB Robot Training Cell, by providing technical information about the axes and rotational capabilities of IRB 1520ID robot. The concept of flex pendant and its key in programming and debugging was explained to participants which was prerequisite for programming. The participants were told to jog the robot through flex pendant, to familiarize themselves with the human-machine interface. The FDP aims to provide opportunities to faculty members and staff to enrich their teaching skill and research in the field of Industrial Robots. The resource person, delivered an interactive presentation on the control characteristics of the robotic work cell and the modes of operation.



Resource person interacting with the faculties

Students' achievements:

1. Three Students of of Mechatronics Engineering Department, **Mr.Sabith Ahamed Manegar,N Suraj** and **Mr. Varun S L** secured **2nd, 3rd and 6th** rank respectively in VTU level.
2. The project titled " PRODUCTION OF HYBRID COMPOSITE USING WASTE GLASS PARTICLES TO ANALYSE ITS MECHANICAL CHARACTERISTICS AND FREQUENCY RESPONSE" was funded by Karnataka State Council for Science & Technology, Govt. of Karnataka organized by IISc Bengaluru, guided by Mr. CHENNAKESHA.V.R, Senior Assistant Professor. The team comprises of PUNEETH MORE, PRAMOD V MOOLYA, ALAN JOEL FERNANDES and KARTHIK SHETTY.
3. The project titled " HYDROXY GAS ASSISTANCE FOR INTERNAL COMBUSTION ENGINE" was funded by Karnataka State Council for Science & Technology, Govt. of Karnataka organized by IISc Bengaluru, guided by Mr. SHRAVANA KARANTH, Assistant Professor. The team comprises of GHANASHYAM BAILUR, YASH S JOGI, LIKITH M J and NIHAL.
4. The project titled " Automated agriculture in Hydroponic System by IoT " was funded by Visvesvaraya Technological University, Belagavi, guided by Mr. CHENNAKESHA.V.R, Senior Assistant Professor. The team comprises of Ananthakrishna M S, Sujay K N, VicksanGurjao.
5. The project titled " Central AGV Navigation System using Real Time Image Processing " was funded by Visvesvaraya Technological University, Belagavi, guided by Mr. SHRAVANA KARANTH, Assistant Professor. The team comprises of Nikhil S, Vishwas Vashishta, HrisheekeshaShettigar, MohdwaseemJinabade.