

MECHATRONICS INSIGHTS

DECENNIAL YEAR ISSUE
2021-2022
VOL. 5

*Bi-Annual Newsletter of
The Department of Mechatronics,
School of Automobile, Mechanical &
Mechatronics Engineering*

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(199403037, Dept. of Mechatronics)

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(Professor & Director of SAMM)

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(Professor & HoD, Mechatronics)

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(Assistant Professor, Dept. of Mect.)

Dr. Mrinmoy Misra
(Assistant Professor, Dept. of Mect.)

Vision

Global excellence in Mechatronics domain to provide comprehensive solution for industrial advancements and societal challenges

Mission

M1: Impart value-based education to fulfil industrial needs by nurturing inter-disciplinary knowledge for enhancing academic and professional excellence.

M2: Provide with state-of-the-art academic and research facilities, fostering humanistic values and peer teaching-learning approach for enhancing employability and entrepreneurship skills.

M3: Encourage inter-disciplinary approach to foster research and innovative ideas for smart Mechatronics system by experiential learning.

M4: Provide opportunity to exhibit and enhance lifelong learning skills with ethical values and social relevance

M5: Provide opportunity to exhibit and enhance lifelong learning skills with ethical values and social relevance.

The Director's Message, Dr. HC Shivaprasad



I'm very happy to write the director's message for the Department newsletter being published by the Department of Mechatronics engineering. The year 2021 was filled with COVID cloud and our faculty members did not stop the spirit of their educational journey. It was our motto the year 2021 should be an appreciative year. I appreciate the Department of Mechatronics Engineering for its accolades and they have performed extremely well during this pandemic year. The department has received NBA accreditation for three years. The department has shown its growth in fulfilling its key performance indicators (KPI) by 10% incremental. The department also introduced the department advisory committee members, and these members are selected from the top leadership ladder from the reputed industry as mentors in our academic progression. On behalf of the SAMM, I am happy to welcome them in our academic exploration. Slow and steadily the department is going for a center of excellence in robotics & automation. Under the leadership of the headship of Dr. Shahbaz Ahmed Siddiqui, the department is doing has a niche and which is reflected in the listed events in this newsletter. I congratulate the newsletter team having taken this initiation of publishing the newsletter and wish them all the best.

The HoD's Message, Dr. Shahbaz Ahmed Siddiqui



It gives immense pleasure to write few words in the department newsletter. Mechatronics Engineering presently offers B. Tech in Mechatronics engineering and M. Tech in Industrial Automation and robotics programs. The B. Tech program of the department is accredited by the National Board of Accreditation (NBA) and provides platform for students to showcase their skills in the interdisciplinary field of engineering. The programs in Mechatronics Engineering are designed by considering the industrial requirements and to provide expertise in multidisciplinary skills. The department has got a team of extremely qualified faculty members, majority having PhD degree in Engineering from the top institutes/universities around the globe, to teach the most excellent minds of the nation. The department has advanced facilities and infrastructure, facilitating cutting edge research and development in a broad spectrum of scientific and technological areas. Department also provides exposure of the students to various state of art fields in mechatronics by organizing seminars, webinars, workshops, symposiums, and other co-curricular activities. It is a matter of great satisfaction that this newsletter presents a brief report of all such efforts undertaken by the department in the last year.

IN THIS ISSUE

STUDENTS' CLUBS

AUTOMATION AND DIGITALIZATION' by SIEMENS Ltd.

FDP ON 'INDUSTRIAL APPLICATION OF MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE'

WEBINAR ON 'AUGMENTED REALITY & VIRTUAL REALITY' by BOSCH

WEBINAR ON 'HOW TO WRITE A RESEARCH PAPER'

FACULTY DEVELOPMENT PROGRAM ON FEATURE-BASED PRODUCT DESIGN & DIGITAL MANUFACTURING

5TH INTERNATIONAL CONFERENCE EMERGING TECHNOLOGIES; MICRO TO NANO (ETMN-2021)

SOCIAL CONNECT EVENT

WEBINAR ON 'THE IMPORTANCE OF IPR IN ACADEMICS'

INDUSTRIAL TOUR TO JANGID STEEL TURNING, JAIPUR

CAMPAIGN ON ROAD SAFETY GUIDELINES AT OTS CHAURAHA, JLN MARG

FDP ON 'RECENT TRENDS AND CHALLENGES IN ROBOTICS AND AUTOMATION'

STUDENTS' ACHIEVEMENTS

DEPARTMENT IN RESEARCH

RESEARCH PUBLICATIONS

TESTIMONIALS

DEPARTMENT LABS

Overview

The Department of Mechatronics Engineering was established at Manipal University Jaipur in 2012. Mechatronics is a multidisciplinary field of engineering with a rich knowledge base formed by various disciplines of engineering. Hence an integrated curriculum is designed so to provide a broad-based education in the basic principles of electrical, electronics, computing, mechanical and control systems. Such a varied and diverse course is gaining much recognition and importance with every passing day and has become an engineering discipline high on demand.

Key Features

- One of its kind in the state of Rajasthan offering courses for UG as well as for doctoral studies
- Excellent infrastructure in terms of manpower, books, teaching aids & sophisticated equipment for producing excellent Engineers
- Exposure to industries through periodical industrial visits and ambient opportunities to take up industrial attachment or apprenticeship

Program Specific Outcomes - B.Tech

PSO-1: Apply the knowledge of basic sciences, analytical skills, and modern computing tools to design, perform and analyse experiments to meet desired goals within the given constraints.

PSO-2: Apply concepts of circuit analysis, analog and digital electronics, controls, electric drives, instrumentation, power systems, machine learning and artificial intelligence to design and automation of mechatronics systems.

PSO-3: Use the principles of solid mechanics, fluid mechanics, and strength of materials, advanced functional materials and manufacturing processes to design, manufacture, and commissioning of mechatronics systems.

Program Specific Outcomes - M.Tech

PSO 1: acquire advanced knowledge of Mechatronics domain to carry out research, design and development in the field of industrial automation and robotics

PSO 2: implement advanced concepts of designing, manufacturing and control of autonomous systems

PSO 3: provide advanced and creative solutions for industry and societal needs through lifelong learning, professionalism and remain continuously employable.

Program Educational Objectives

PEO-1: To understand, analyse, design, and develop the mechatronics system using modern tools and technologies to meet the industrial needs

PEO-2: Prepare graduates to pursue higher studies by enhancing analytical and problem-solving skills in inter-disciplinary engineering for research.

PEO-3: Graduates of the programme will exhibit life- long learning skills, entrepreneurship competencies and ethical values for a successful professional



Department Clubs & Student Chapters

IEI Mechatronics Students' Chapter MUJ



IEI MECHATRONICS
STUDENT CHAPTER - MANIPAL UNIVERSITY JAIPUR

The Institution of Engineers (India) [IEI] is a statutory body to promote and advance the engineering and technology, established in 1920 and incorporated by Royal Charter in 1935. It is the largest multi-disciplinary professional body of engineers encompassing 15 engineering disciplines with a Corporate membership of over 2 lakhs, and serving the nation for more than 9 decades. The IEI has its headquarters located in Kolkata with national presence through more than hundred Centres and several Overseas Chapters, Foras and Organ. The IEI Mechatronics Student Chapter MUJ is affiliated by IEI and aims to mentor young engineering minds, encouraging growth and development with them.

Faculty Coordinators

Mr. Nikhil Shrivastava
Assistant Professor, Dept. of Mect.

Mr. Ashok K. Kumawat
Assistant Professor, Dept. of Mect.

President

Samarth Salim, 3rd Yr, Mect.

General Secretary

Bhavya Sharma, 3rd Yr, Mect.

Treasurer

Madhup Juneja, 3rd Yr, Mect.

Technical Secretary

Sarthak Jain, 3rd Yr, Mect.

Head of Events

Aahan Birla, 3rd Yr, Mect.

Head of Promotions

Chirag Gupta, 3rd Yr, Mect.

ISA Chapter, MUJ



The International Society of Automation (isa.org) is a non-profit professional association founded in 1945 to create a better world through automation. ISA advances technical competence by connecting the automation community to achieve operational excellence.

ISA provides:-

- Access to our top-level technical library and research transactions;
- Exclusive access to specialized focus groups/divisions in specific fields including Robotics and Automation, Cybersecurity, and Education; and
- Networking and career-making opportunities with like-minded students as well as professionals.

Faculty Coordinator

Dr. Princy Randhawa
Assistant Professor, Dept. of Mect.

President

Akshet Patel, 4th Yr, Mect.

Vice President

Rahul Devkar, 4th Yr, Mect.

Secretary

Bhushan Chopda, 4th Yr, Mect.

Treasurer

Sarthak Jain, 4th Yr, Mect.

Program Chair

Hardhik, 4th Yr, Mect.

Marketing Chair

Manav Desai, 4th Yr, Mect.

Membership Chair

Vaibhav, 4th Yr, Mect.

AUTONOMOUS INITIATIVE



Autonomous Initiative is a club for all those Tech Enthusiasts whose interests lean towards the field of Robotics and Automation. The club is inclined to Strengthen the essence of Real Tech, Mechanical Design, Electronics Design, and Automation. We provide Hands-on-experience and Technical Support aimed to shape the future of Robotics here at Manipal University Jaipur. Various perks like One on one guidance, workshops, and tutorials along with tools, equipment, components, and workspace await you!

Faculty Coordinator

Dr. Shambo Roy Chowdhury
Assistant Professor, Dept. of Mect.

President

Aryan Bhatia, 2nd Yr, Mect.

General Secretary

Yash Mathur, 2nd Yr, IT

Head of Administration

Lalith Bhaskaran, 2nd Yr, Mect.

Technical Head

Aditya patel, 2nd Yr, Mect.

Head of Workshops

Sarthak Nandanwar, 2nd Yr, EEE

Head of Promotions

Kushagra Srivastava, 2nd Yr, CSE

Head of Graphic Design

Pranav Mohan Sharma, 2nd Yr, ME

Head of Finance and Logistics

Amogh Konkar, 2nd Yr, Mect.

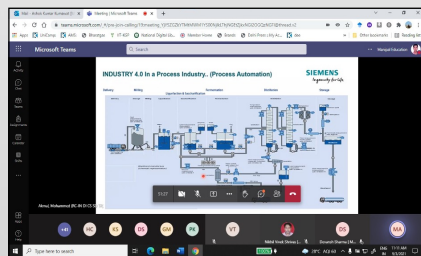
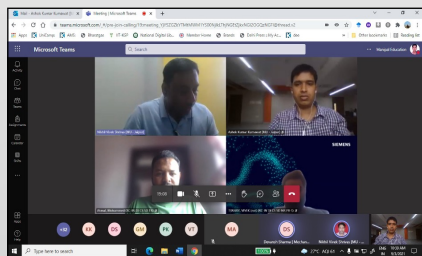
Head of Teaching

Jayant Jha, 2nd Yr, IT



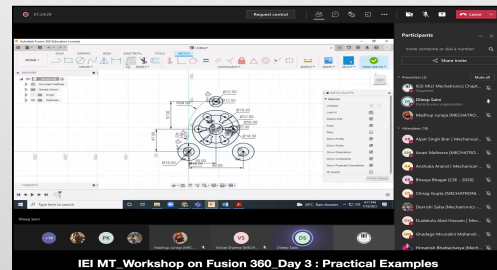
WEBINAR ON 'AUTOMATION AND DIGITALIZATION' by SIEMENS Ltd. September 03, 2021

The webinar was organised by IEI Mechatronics Students' Chapter MUJ in collaboration with Siemens Ltd. It was commenced with a welcome address by Mr Nikhil Vivek Shrivastava, our club faculty coordinator followed by Mr. Mohammad Akmal from Siemens Ltd. briefing the participants about Automation and Digitalization at Siemens. This webinar helped the participants to gain the core knowledge about automation pyramid, sequential control logic, machine control possibilities, program logic control, etc. It also gave us the knowledge about Industry 4.0 and its impact on production technology. This webinar witnessed the active participation of 46 + participants. At last, it ended with the vote of thanks by Mr Ashok Kumar Kumawat, (Assistant Professor, Dept of MECT) representing the Mechatronics Department towards the industrial experts from Siemens Ltd. and Ms. Pallawi Kaushik (Jr. Head of Workshop and Event, IEI MECT) representing IEI MECT Schap towards SAMM Director – Dr. HC Shivprasad, HoD Mechatronics – Dr. Shahbaz Ahmed Siddiqui, Our Faculty Coordinator – Mr. Nikhil Shrivastava, and Mr. Ashok Kumawat for allowing us to conduct this event.



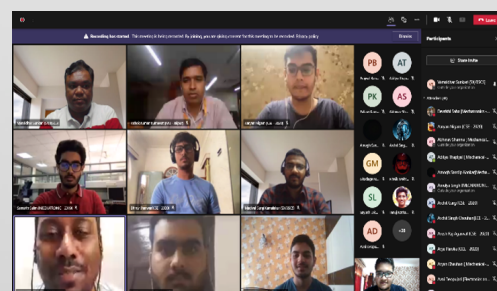
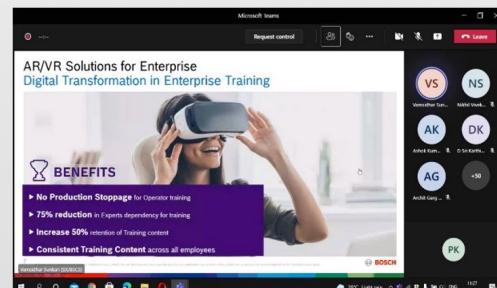
WORKSHOP ON 'AUTODESK FUSION 360' July 17 - 21, 2021

IEI Mechatronics Students' Chapter MUJ in collaboration with CAD DESK Pvt. Ltd; Jaipur organised workshop on Autodesk Fusion 360. The event witnessed the active participation of 35+ students.



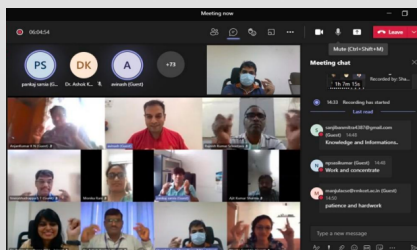
WEBINAR ON 'AUGMENTED REALITY & VIRTUAL REALITY' by BOSCH September 17, 2021

The webinar was organized by IEI Mechatronics Students' Chapter MUJ in collaboration with BOSCH on the topic Augmented and Virtual Reality. It was commenced with a welcome address by Ms. Pallawi Kaushik our Jr. Head of workshop followed by Mr. Vamsidhar Sunkari from BOSCH briefing the participants about AR and VR. The event witnessed the active participation of over 56+ students. The webinar was ended with a vote-of-thanks by Mr. Samarth Salim (President), SAMM Director - Dr. HC Shivprasad, Mechatronics HOD - Dr. Shahbaz Siddiqui and club faculty coordinator - Mr. Nikhil Shrivastava and Mr. Ashok K. Kumawat.



FACULTY DEVELOPMENT PROGRAM ON 'INDUSTRIAL APPLICATION OF MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE' September 06-10, 2021

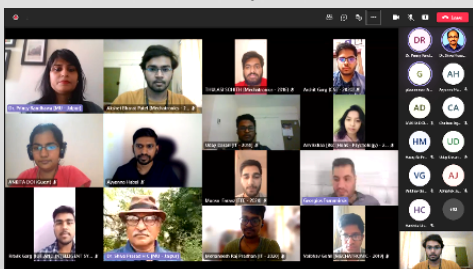
Industrial Application of Machine Learning and Artificial Intelligence 5-Days AICTE sponsored Faculty Development Program was conducted from 6th to 10th September 2021 in which around 130 participants from different parts of the country participated. In this program 200 faculty members from various pioneered institutes are registered from 25 states of India from Karnataka, Kerala, Kashmir, Bihar, Madhya Pradesh, Gujarat, Tamil Nadu etc. This FDP was inaugurated by President-Manipal University Jaipur. Dr. Princy Randhawa-Coordinator and Dr. Shambo Roy Choudhury-Co-Coordinator of the FDP program started the program with the lamp lighting and curtain raising ceremony. Dr. G.K Prabhu, President, Manipal University Jaipur said, "Artificial Intelligence and Machine Learning are the buzz words nowadays and it is applicable to all the engineering domains". Dr. Jagannath Kordoy-Dean, Faculty of Engineering underlined the job opportunities in various fields as a machine learning Engineer. Dr. Santanu Chaudhary- Director, IIT Jodhpur was invited as chief guest for the inaugural program. . This FDP will comprise of a total 14 technical sessions including session on "Fit INDIA Program Mediation and Wellness which is aligned with the mission of "The Art of Living". Dr. Ravi Kumar Gupta also mentioned the details of the resource persons from various industry and academics who are using this knowledge in real world applications.



WEBINAR ON 'HOW TO WRITE A RESEARCH PAPER'

October 16, 2021

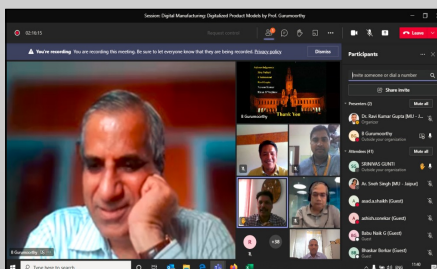
This event on How to write a research paper was organized by ISA MUJ Student chapter in collaboration with Department of Mechatronics engineering MUJ by Dr. George Tsaramirsis. The purpose of this event was to provide students to gain knowledge on how to write a successful research paper and how to get them published. Students were the main beneficiary of this event as it helped them to gain knowledge on how to write a good research paper and how should we get them published. The duration of the session was 2 hrs and the participants had learned a lot about the topic, Expansion of the Current Body of Knowledge, and how to work with it. The event witnessed the active participation of over 50+ students. The webinar was ended with a vote-of-thanks by Mr. Akshet Patel (president), SAMM Director - Dr. HC Shivaprasad, club faculty coordinator – Dr. Princy Randhawa.



FACULTY DEVELOPMENT PROGRAM ON 'FEATURE-BASED PRODUCT DESIGN & DIGITAL MANUFACTURING'

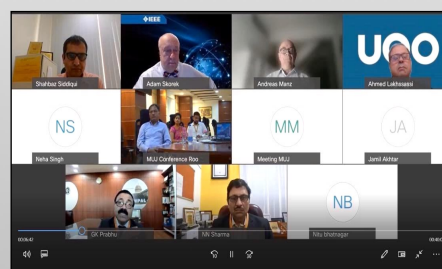
September 20-24, 2021

Feature-based Product Design, Digital Manufacturing 5-Days AICTE sponsored Faculty Development Program was conducted from 20th to 24th September 2021 in which around 105 participants from different parts of the country participated. This FDP was inaugurated by President-Manipal University Jaipur. Dr. Ravi Kumar Gupta-Coordinator and Mr. Mahipal Bukya- Co-Coordinator of the FDP program started the program with the lamp lighting and curtain raising ceremony. Dr. G.K Prabhu, President, Manipal University Jaipur said "Feature-based Product Design, Digital Manufacturing are the buzz words nowadays and it is applicable to all the engineering domains". Dr. Jagannath Kordoy- Dean, Faculty of Engineering underlined the job opportunities in various fields as a Engineer. Prof. B. Gurumoorthy Professor & Chief Executive of SID, IISc Bangalore was invited as chief guest for the inaugural program. He emphasized on digital product design and relate to the different engineering domain. Various examples have been cited from day to day digital product application to use of it in different fields. FDP Coordinator- Dr. Ravi Kumar Gupta introduced the theme of the FDP. This FDP will comprise of a total 14 technical sessions including session on "Yoga session". Dr. Ravi Kumar Gupta also mentioned the details of the resource persons from various industry and academics who are using this knowledge in real world applications. Mr. Mahipal Bukya- Co-coordinator of the FDP delivered the vote of thanks to all the AICTE officials for providing this opportunity to host the Faculty Development Program.



5TH INTERNATIONAL CONFERENCE EMERGING TECHNOLOGIES; MICRO TO NANO (ETMN-2021) OCTOBER 08-09, 2021

Manipal University Jaipur and University of Quebec Outaouais, Canada had successfully organized 5th international conference on Emerging Technologies; Micro to Nano (ETMN-2021) on 08-09 October 2021 at Manipal University Jaipur in virtual mode. ETMN is a series of an international conference being jointly organized by MUJ Jaipur, BITS Pilani and CSIR-CEERI in past and is organized biennial from 2013. ETMN conference series is one of the prestigious conferences in the field of Micro & Nano technologies. The inaugural function of the conference was organized online in virtual mode on October 08, 2021 with more than 100 participants attending the function from different countries. Conference was inaugurated in the presence of Prof Ashutosh Sharma as Chief Guest of the program, Ex-Secretary DST Government of India and Institute Chair professor IIT Kanpur, Prof Adam Skorek as Guest of Honour from University of Quebec Trois Rivieres, Canada. The program was also attended and addressed by Prof G K Prabhu President MUJ, Prof N N Sharma Pro-President & Conference Chair, Prof Ahmed Lakhssassi UQO, Prof Jamil Akhtar, MUJ Jaipur and Organizing Chair Dr. Shahbaz A Siddiqui. There were more than 100 delegates & participants from different countries like Canada, Russia, Singapore, Australia, Morocco, Germany, France etc. attended different sessions. Participants have presented and discussed their research outcomes in 09 different technical sessions of Nano and Micro technology domains. The conference is sponsored by Council of Scientific and Industrial Research, Rajasthan.



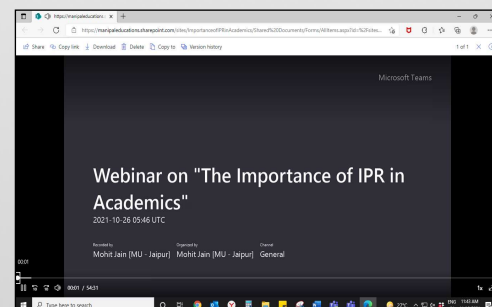
SOCIAL CONNECT EVENT October 22, 2021

The school of Automobile, Mechanical and mechatronics engineering in collaboration with the directorate of student welfare Manipal University Jaipur and Aperture Club organized a student social connect event titled social awareness extension and outreach on 22nd October 2021 from 1:15 PM to 6:00 PM. The vision of Aashray Care homes is to let every HIV infected & affected child & women to live with dignity and courage. Children living in Aashray Care homes are groomed to be responsible, civilized, and empowered citizen at par with the mainstream society. Women sheltered in Aashray Care homes are provided safe and conducive environment to learn & enhance life skills. The students and faculty members along with Dr Shiva Prasad HC, Director, SAMM visited the Aashray Care Home which is a special care home for children. The social connect event began with a brief introduction of everyone present there (more than 40 kids of different age groups from 4 years to 16 years) and telling them about Manipal University Jaipur. The students of the department of Automobile presented a PPT on cars and their history along with a fun game and a competition. The students of the Mechanical department conducted a quiz on general topics related to India and the winners were given a prize. The students of the Mechatronics department talked about the recent trends in technology around the world and shared some information about Mechatronics and Robotics. The kids performed dances, songs and had a lot of fun.



WEBINAR ON 'THE IMPORTANCE OF IPR IN ACADEMICS' October 26, 2021

Directorate of Research (DoR) in collaboration with Department of Mechatronics, School of Automobile, Mechanical and Mechatronics organized an online webinar on "The importance of IPR (Intellectual Property Rights) in Academics" on In this webinar, Ms. Pooja Kumar, Director & Founder: Innove Intellects, shared the details and process overview of filing patent and its importance in academics. The webinar started on the said time at scheduled date. In total 31 attendees have been registered. And total 9 faculty members and 22 students have joined the session. The invited speaker informed about the intellectual property rights and its importance in academics. Speaker also inform about the procedure of filing of patent and its complete process.



INDUSTRIAL TOUR TO JANGID STEEL TURNING, JAIPUR November 20, 2021

The Mechatronics Engineering department, Manipal University Jaipur organized an industrial tour at the JANGID STEEL TURNING, VKI Industrial Area, Jaipur on 20th November 2021. Jangid Steel Turning is one of the leading manufacturer and supplier of forged bearing races and automotive components across the world. Students gained a practical knowledge about various processes like machining, forging and heat treatment. Their doubts and queries were addressed by Himanshu Jangid, COO, JST. The Mechatronics Engineering department, Manipal University Jaipur organized an industrial tour at the JANGID STEEL TURNING, VKI Industrial Area, Jaipur on 20th November 2021. Jangid Steel Turning is one of the leading manufacturer and supplier of forged bearing races and automotive components across the world. Students gained a practical knowledge about various processes like machining, forging and heat treatment. Their doubts and queries were addressed by Himanshu Jangid, COO, JST. Objectives of the event were

- Get acquainted with and exposure to industry and its functioning
- Learn about the different processes in manufacturing from raw materials to finished goods.
- Observe the quality assurance labs



CLUB UNVEILING IEI MECHATRONICS STUDENTS' CHAPTER MUJ November 24-30, 2021

After the official online unveiling ceremony of all MUJ clubs on 23rd November 2021, Institution of Engineers (India) Mechatronics Students' Chapter Manipal University Jaipur started with preparations for the official offline unveiling of our club that started from 24th November 2021 till 30th November 2021. We showcased all stunning projects made by our club's alumni, along with a projector that projected a short video on our achievements, talents, and numerous online events. Students were very intrigued by it and were eager to be a part of this amazing club to get an outstanding experience in their journey ahead. We had 40+ registrations and were overly amazed to see the response.



CAMPAIGN ON ROAD SAFETY GUIDELINES AT OTS CHAURAHA, JLN MARG December 04, 2021

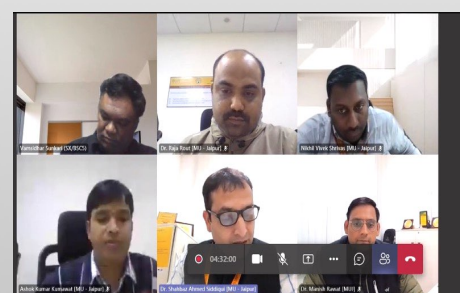
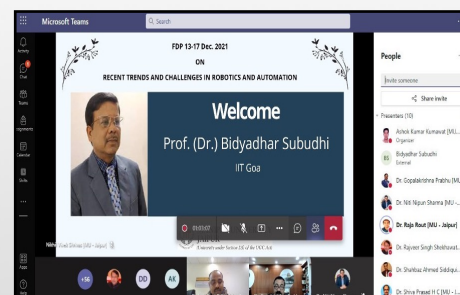
DSW and Department of Mechanical & Mechatronics along with Muskaan NGO conducted a campaign on Road Safety Guidelines at OTS Chauraha, JLN Marg (Jaipur) on 04 December 2021. It was a physical activity involving the students from Department of Mechanical & Mechatronics and the Muskaan NGO members. This campaign involved MUJ students, MUJ faculties and Muskaan NGO members. First, MUJ students were trained by Muskaan NGO members regarding things to do in campaign. Then, campaign members checked helmets and quality standard of helmets used by people on road. They motivated public to follow proper road safety guidelines in order to avoid road accidents. Foundation for Road Safety is a registered not-for-profit trust committed to building a culture of safety on roads through Awareness, Education, Training and Advocacy. It was registered as a charitable Trust in the year 2001. As road safety is a shared responsibility the NGO uses an integrated, community-centric approach to the complex issue of road safety. The NGO started in year 1999 in the wake of the death of 17-year-old Durva Bhasin, who lost her life in a road accident. She is the daughter of the founder member couple, Mr. Pramod Bhasin and Dr. Mridul Bhasin. Though a personal tragedy catalyzed the beginning, MUSKAAN is not a family trust.



FACULTY DEVELOPMENT PROGRAM ON 'RECENT TRENDS AND CHALLENGES IN ROBOTICS AND AUTOMATION' December 13-17, 2021

This FDP on "Recent Trends and Challenges in Robotics & Automation" to be held on 13-17 December 2021 in online mode. Robotics and automation are the future of industries and businesses across the world with increasing demand. There are many challenges in robotics and automation implementation for newer drives. Significant research in design is to be made to have cost effective and economical robotics and automated applications. Over the last few years, significant amount of research and development is in progress to implement advanced technologies for robotics and automation developments. In the proposed FDP, it has been planned to offer the participants, a comprehensive approach for the development in robotics and automation such as advanced controller design and network analysis, smart sensors and finding the right solutions for the application specific challenges. Over the last few years, a significant amount of research and development is in progress to implement advanced technologies for robotics and automation. In the proposed FDP, it has been planned to offer the participants, a comprehensive approach for the development in robotics and automation such as advanced controller design and network analysis, smart sensors, and finding the right solutions for the application specific challenges. Through this FDP, we will try to discuss more about the recent trends and challenges faced by the research community. For this FDP, we have received 148 requests for participation from all over the country and few from outside also. Industry personnel from Bosch Rexroth, Resolve Diagnostics.

1. Understand the fundamentals of the future based robotic systems and design of advanced control system for it.
2. Explain the role of network control in Industrial automation.
3. Designing advance sensor and applications using MEMS technology.



Students' Achievements

- Akshet Patel, Pranav Sharma and Vaspan Motafram, students of final year Mechatronics and members of the International Society of Automation (ISA) MUJ Chapter won the technical call for papers all over India and got an opportunity to present their paper titled "NurseBot- Automating the Health Care Industry" on an international level at ISA's mega event "Tomorrow's Opportunity with Today's Automation Leaders (TOTAL-2021)".
- Under the guidance of Dr Princy Randhawa, Pranav Sharma and Akshet Patel from final year Mechatronics co-authored the conference paper that has been accepted at the IEEE 9th International Conference on Reliability, Infocom Technologies and Optimization (ICRITO'2021).
- Akshet Patel, a final year Mechatronics engineering student co-authored this paper along with research scholars from Iraq and UAE that has been accepted at the conference "Intelligent Computing Techniques for Smart Energy Systems (ICTSES-2021)".
- Akshet Patel and Akruti Sinha, final year students of Mechatronics and CCE, co-authored this paper that has been accepted at the 3rd International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS 2022).
- Under the guidance of Dr. Princy Randhawa, Bhushan N Chopda, Sarthak Jain, Yashwarshan Kaushik, Mayank Manchanda of final year Mechatronics co-authored this paper that has been accepted at the 3rd International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS 2022)
- Under the guidance of Mr. Mahipal Bukya, Bhushan N Chopda, Yashwarshan Kaushik, Mayank Manchanda co-authored this paper that has been accepted at the ICRITO'2021.
- Ishaan Bohra, 2nd Year; Wrote a Science Fiction Novel in 2018, which was his debut novel. Currently he is writing another Dystopian / Thriller Novel.
- Under the guidance of Dr Princy Randhawa, Bhushan N Chopda, Sarthak Jain, Yashwarshan Kaushik, Mayank Manchanda of final year Mechatronics co-authored this paper that has been accepted at the 3rd International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS 2022)
- Akshet Patel and Akruti Sinha, final year students of Mechatronics and CCE, co-authored this paper that has been accepted at the 3rd International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS 2022).

FOLLOWING STUDENTS OF MECHATRONICS ENGINEERING DEPARTMENT HAVE COMPLETED THEIR RESEARCH/INTERNSHIPS AT VARIOUS NATIONAL/INTERNATIONAL ORGANIZATIONS

NAME OF THE STUDENT	REGISTRATION NUMBER	NATIONAL/ INTERNATIONAL	ORGANIZATION
Akshet Patel	189403031	National	CSIR - National Institute of Oceanography (NIO), Goa, India
Akshet Patel	189403031	International	Nanyang Technological University (NTU), Singapore
Manav Desai	189403032	International	The University of Jordan, Queen Rania St, Amman, Jordan
Samarth Salim	199403037	National	National Institute of Technical Teachers' Training & Research (NITTTR), Govt. of India Chandigarh, India
Samarth Salim	199403037	International	National University of Bangladesh College of Aviation Technology, Dhaka, Bangladesh

DEPARTMENT IN RESEARCH

IPR ENTRY TYPE	FILING OFFICE	IPR NUMBER	DATE	TITLE	INVENTORS	STATUS
PATENT	IP AUSTRALIA	2021105713	17/08/2021	IoT ENABLED RETRACTABLE URINAL SYSTEM AND A METHOD THEREOF	DR. MANISH RAWAT MR. VIJAYPAL SINGH DHAKA, MR. MANOJ KUMAR SHARMA	GRANTED
PATENT	IP AUSTRALIA	2021106249	20/08/2021	AN ADJUSTABLE SINGLE TOOTH GEAR TEST FIXTURE	DR. SANTOSH PATIL MR. MOHIT JAIN MR. SAMARTH SALIM	GRANTED
PATENT	INDIAN PATENT OFFICE	202011000805	08/01/2020	CONDUCTIVE HYDROGEL NANOCOMPOSITE AND PROCESS OF PREPARATION THEREOF	DR. SANCHITA B GHOSH MS. SEEMA RANI	GRANTED
COPYRIGHT	INDIAN PATENT OFFICE	129642021	13/06/2021	UPASTHITI	DR. MANISH RAWAT GARV MAGGU, RAJDEV KAPOOR, KSHITIJ SINHA, SANDEEP CHAURASIA	REGISTERED



Research Publications

- Kumawat, A. K., Kumawat, R., Rawat, M., & Rout, R. (2021). Real time position control of electrohydraulic system using PID controller. *Materials Today: Proceedings*.
- Kumawat, A. K., Rawat, M., Kumawat, R., & Rout, R. (2021). A Review of Nonlinear Control for Electrohydraulic Actuator System in Automation. *Manufacturing and Industrial Engineering: Theoretical and Advanced Technologies*, 229.
- Gupta, A., & Randhawa, P. (2020, December). The Next Step Is Nanotechnology: Application and Recent Advancement. In *International Conference on Information Systems and Management Science* (pp. 171-183). Springer, Cham.
- Bansal, D., & Randhawa, P. (2020, December). Detecting Presence of Masks and Violation of Social Distancing. In *International Conference on Information Systems and Management Science* (pp. 67-73). Springer, Cham.
- Agarwal, K., Jain, M., & Kumawat, A. (2020, December). Comparing Classification Algorithms on Predicting Loans. In *International Conference on Information Systems and Management Science* (pp. 240-249). Springer, Cham.
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TESTIMONIALS



Dhruv bansal
2016-2020

“Professors from the Department of Mechatronics have always been by my side and supported me in discovering my true potential. They were always available to assist me with my issues, whether they were academic, project-related, or internship-related. They give it their best and motivate you to stand out from the crowd, to work hard, and to never give up.”



Garima Danidhariya
2017-2021

“My professors were always there to navigate me through tough situations. The mini projects performed under their guidance really helped me learn different skills and gain practical knowledge. I feel my bachelors in Mechatronics has helped me grow as person and added a lot to my personality. Recently, I have been accepted in the University of Southern California in the course Biomedical Data Analytics for my Masters and I can’t wait to begin this new journey.”



Anish Nair
2016-2020

“The Professors at the Department of Mechatronics were always easily approachable. They would always be willing to help with any queries. There was a personal touch that made a big difference. They stayed in touch with me through my internship, during my applications for my Masters and have always been a huge source of confidence and reassurance.”

NEW AR/VR LAB SETUP

Virtual Reality (VR) refers to a computer-generated simulation in which a person can interact within an artificial three-dimensional environment using electronic devices fitted with sensors. In this simulated artificial environment, the user is able to have a realistic-feeling experience. Augmented Reality is different from VR, in that AR enhances the real world as it exists with graphical overlays and does not create a fully immersive experience. As an industry this AR-VR grew 17% in 2017, and the rate of growth is projected to continue to increase over the coming five years, as practical uses for the technology continues to be developed and existing uses move into further maturity.



NEW ROBOTICS LAB SETUP

Welcome to the Robotics Laboratory in the Department of Mechatronics Engineering at Manipal University Jaipur. In the year 2021, this robotics laboratory was established as part of curriculum as well as research laboratory. It is established to validate advanced robotics concepts, and it also provides a research-focussed environment for undergraduate students and research scholars. Few faculties and students work here to gain the concept of robotics and its related areas. Major thrust areas are Mobile Robotics, Manipulators, and Underwater Robots.

