



MECHBYTES

NEWSLETTER OF MECHANICAL ENGINEERING DEPARTMENT

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Editors (Faculty):

Mr. Tanay Rege

Editor (Student):

Mr. Masion Mascarenhas

VISION

To evolve as a Centre of Excellence in Mechanical Engineering with a strong Industry Connect, ensuring engineers with a global perspective and professional ethics, thus adding value to society

MISSION

- To ensure proficiency in academics with emphasis on fundamental concepts and problem solving leading to practical applications in the field of Mechanical Engineering
- To provide state of the art Training in collaboration with reputed industries and institutions focussing on interdisciplinary domains
- To engage in Research, Consultancy services and promote community outreach initiatives
- To promote Faculty Development through Quality Improvement Programs and Research

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- Graduates will apply Engineering Knowledge and demonstrate the requisite skills to meet challenges in the field of Mechanical Engineering.
- Graduates will adapt to the technological advances and relevant softwares in the industry.
- Graduates will acclimatize to real time Industrial Systems, Standards and Professional Engineering Practices.
- Graduate will exhibit Strong Values, Work Ethics, Positive Attitude, Managerial Skills and Team Work with concern for the society.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- Graduates will be able to demonstrate knowledge of Maintenance Engineering Practices, Industrial Automation Tools and standard Softwares in Mechanical Engineering and related areas.
- Graduates will be able to correlate knowledge of Mechanical Engineering and allied fields with Industrial Processes, Practices and Standards through field visits, Internships and other intervention

ACADEMIC ACTIVITIES

STUDENT CHAPTERS

IGNITRON 2024

“IGNITRON 2024”, a two-day Inter-Collegiate Technical event, was hosted by the Mechanical Engineering Students Hub (MESH) of Don Bosco College of Engineering, Fatorda, on March 21st and 22nd, 2024. The inauguration was graced by Mr. Kish Rego, Managing Partner at K2 Construction & Developers and an esteemed alumnus of DBCE. Joining him on the dais were Fr. Kinley D’ Cruz, the Director, Dr. Kala Nayak, Registrar, and Dr. Pravin Verekar, Head of the Mechanical Department.



Fr. Kinley D’Cruz elaborately dealt on the Ignitron motto of “Ignite, Clash, Conquer” and appreciated the efforts of the MESH office bearers. He also commended Mr. Rego for his dedication and perseverance. Mr. Shane Mendes, Secretary of MESH, provided insights into MESH and the events scheduled for IGNITRON 2024. Dr. Pravin Verekar, HOD of the Mechanical Department, extended a warm welcome to all attendees. Mr. Kish Rego, as the Chief Guest, shared his journey from being a DBCE student to becoming an entrepreneur, emphasizing that hard work is the “Key to Success”. Mr. Nimish Noronha, Treasurer of MESH, delivered the Vote of Thanks. The inaugural session was followed by a talk on Virtual Reality titled ‘Drishti’ by Mr. Akhilesh Bhise, Founder of Innovent 3D, based in FiiiRE, DBCE.





Various technical events including Robosoccer, RoboRace, Line Follower, and Pitch IT, as well as non-technical events like Futsal, FIFA 24, and Treasure Hunt, were organized. Participants from colleges across Goa enthusiastically took part in IGNITRON 2024.

The coordination of IGNITRON 2024 was led by Dr. Suraj Marathe and Professors Sanjeel Naik and Tanay Rege, along with the assistance of the MESH Committee.

WORLD ENGINEERING DAY CELEBRATION AND INSTALLATION OF THE IEI DBCE STUDENT CHAPTER WORKING COMMITTEE FOR THE ACADEMIC YEAR 2024-25

The World Engineering Day Celebration and Installation of the IEI DBCE Student Chapter Working Committee for the academic year 2024-25 was a momentous event organized jointly by the Institution of Engineers - Goa State Centre (IEI-GSC) and the Mechanical Department of Don Bosco College of Engineering (DBCE), Fatorda on 15th March 2024.



The occasion was graced by Chief Guest Mr. Anirudh Agrawal, MD of Agrawal Renewable Energy Pvt. Ltd & and Guest speaker Mr. Ashwani Rawat, Director of Transverse Technologies Pvt Ltd along with DBCE and IEI-GSC dignitaries.

The event commenced with the Indian National anthem followed by a brief introduction to World Engineering Day by Er. Benedicto Andrade, Convener, setting the tone for the day's proceedings. Dr. Suraj Marathe, officiating HOD of the Mechanical Department, DBCE, delivered a welcoming address, underlining IEI's role in fostering knowledge sharing and skill development among students. Prof. Ajit Salunke, the faculty advisor of the IEI DBCE Chapter, introduced the chapter, highlighting its accomplishments, objectives, and upcoming endeavors. Dr. Neena Panandikar, the Principal of DBCE, encouraged students to leverage IEI's resources and connect with engineering experts, commending the Mechanical Department for revitalizing the DBCE IEI Chapter.

A significant moment of the event was the release of the IEI Magazine, which was followed by an address by Er. Anwar Khan, Chairman of IEI- GSC, who emphasized that World Engineering Day serves as a reaffirmation of Engineer's dedication to innovation, technological advancement, transformation, and recognition of their accomplishments.

The Chief Guest, Mr. Anirudh Agarwal, recounted his transition from being a Mechanical Engineer to assuming leadership of one of the country's top renewable energy, motivating students to venture beyond their academic studies and explore broader horizons through his inspiring narrative.

The installation of the DBCE IEI Student Chapter Working Committee comprising of Mr. Abhishek Dias as convener along with the committee members Mr. Myron Fernandes, Mr. Anish Barreto, Mr. Marston Barbosa, Mr. Dev Kalangutkar, Mr. Chenoy Dos Santos and Mr. Denzil Godinho was conducted by Er. Simiao Da Cunha and Er. Siddanth Dubashi, Honorary Secretary of IEI- GSC, symbolizing a new beginning of the vibrant DBCE Chapter. Er. Dubashi delivered the vote of thanks, expressing gratitude to all participants and contributors.

An expert talk on "Data Analytics and Machine Learning" was delivered by the Guest Speaker, Mr. Ashwani Rawat, Director of Transverse Technologies Pvt. Ltd. In conclusion, Mr. Abhishek Dias thanked the speaker and office bearers of IEI Goa State Centre. The event served as a platform for knowledge exchange, inspiration, and the fostering of a vibrant engineering community.



WORKSHOPS/ SEMINARS / WEBINARS & EXPERT TALKS

IEI AND FSAI STUDENTS CHAPTER SEMINAR ON ‘BASIC FIRST AID’

On 18 April 2024, the DBCE IEI chapter in association with the FSAI student chapter hosted a seminar on “Basic First Aid” by Mr. Jovito Lopez from St John’s Ambulance, focusing on key lifesaving techniques and strategies. The session aimed to equip attendees with the fundamental skills necessary to respond swiftly and decisively to life-threatening situations and emergencies, particularly cardiac-related incidents.

Mr. Lopes elucidated the significance of pulse assessment as a vital sign indicative of cardiovascular health. He elucidated the normal pulse range and deviations that might indicate potential health concerns. Various scenarios of cardiac arrest were illustrated to familiarize participants with real-life situations. Case studies and simulations were employed to demonstrate the diverse manifestations of cardiac emergencies. A crucial aspect of the session involved clarifying the disparity between cardiac arrest and heart attack.

The speaker delineated the variances in symptoms, causes, and immediate responses required for each condition. Strategies to prevent cardiac arrest, such as Automated External Defibrillators (AEDs) and Cardio Pulmonary Resuscitation (CPR), were thoroughly expounded upon. Practical demonstrations were conducted to ensure participants grasped the proper utilization of these lifesaving tools. The AVPU (Alert, Voice, Pain, Unresponsive) test, a rapid assessment tool to gauge a person's level of consciousness, was taught. Its significance in determining the urgency of medical intervention was underscored. The interactive nature of the session, coupled with practical demonstrations, ensured an enriching learning environment for all participants.



DBCE MECHANICAL DEPARTMENT CONDUCTS A TALK ON “RESEARCH FUNDING & PROPOSAL WRITING”

On April 12th, 2024, the Department of Mechanical Engineering at Don Bosco College of Engineering, Fatorda, hosted a seminar titled "Securing Research Funding through Impactful Proposals." Dr. Anirudha Ambekar, Assistant Professor at IIT-Goa, served as the keynote speaker for the event.

Dr. Ambekar highlighted the significance of research, emphasizing its role in advancing scientific knowledge and tackling societal issues. He provided an overview of funding opportunities available from governmental, industrial, and private sources, stressing the importance of aligning research objectives with the interests of potential funders.

During the pre-proposal stage, Dr. Ambekar recommended conducting honest self-assessment and thorough literature reviews. He discussed the essential components of a successful research proposal, including defining research objectives and hypotheses, emphasizing the significance of the proposed work, outlining methodology and approach, and detailing expected outcomes and timelines. Additionally, he shared strategies for engaging reviewers, emphasized the value of collaboration and partnership, and discussed the importance of budget planning.

The seminar was organized by Dr. Avil Allwyn Dsa and Prof. Sharad Shanbhag. Dr. Dsa introduced the speaker to the audience, and Prof. Shanbhag delivered the vote of thanks. Faculty members from Don Bosco College of Engineering attended the session.



“INTRODUCTION TO CNC MACHINING” IN ASSOCIATION WITH NDLI DBCE CLUB

Department of Mechanical Engineering in collaboration with the NDLI Club at Don Bosco College of Engineering to organized a session on 'Introduction to CNC Machining.' The event, held at the CNC Center from 3:00 PM to 4:00 PM, aimed to provide attendees with practical insights into the world CNC machines and their working.

The session was delivered by Prof. Sachin Turi, Prof. Gaurish Samant and Prof. Aniket Naik, Assistant Professors at Department of Mechanical Engineering. Dr. Rolando da Cruz, the college's librarian, and Mrs. Vanessa Fernandes, Library Assistant and Mr. Tanay Rege, Assistant Professor, provided valuable support as coordinators.

The session began with an insightful presentation detailing the evolution and significance of CNC technology in various industries. Students gained valuable insight into how CNC machines have revolutionized manufacturing by automating precision tasks.

Students were introduced to the intricate components of CNC machines. Each component, from the control panel to the spindle and axis, was explained in detail regarding its role in the

machining process. A notable highlight of the session was the demonstration of CNC machine programming and operation. Students observed first-hand how CNC machines are programmed to execute precise machining tasks. From tool selection to toolpath planning, every step in the machining process was carefully explained and demonstrated.

Students had the opportunity to engage in hands-on activities, where they learned how to set up tools, load materials, and initiate machining operations on a CNC machine. This practical experience not only reinforced theoretical concepts but also boosted students' confidence in tackling real-world machining challenges.

The event attracted 45 members of the NDLI Club of DBCE, and it was open to any student with an interest in the topic. The diverse audience encouraged an enriching exchange of ideas and promoted a collaborative learning environment.



AUDIT COURSE IN MAINTENANCE ENGINEERING

The audit course in maintenance engineering conducted by the Mechanical Engineering Department for TE Mechanical (6th sem) Engineering students at Don Bosco College of Engineering provides students with a comprehensive understanding of principles and practices in the context of maintenance activities. This course aims to equip students with the knowledge and skills necessary to effectively evaluate and improve maintenance processes within an industrial setting. Five audit course sessions were conducted throughout the semester by inviting speakers from industry and academia. Here is a very brief report of all the sessions conducted.

Session 1: Technical Talk on Maintenance of HVAC Equipment

This session was held on 2nd February 2024 and the resource speaker was Mr. Prakash Naik, Past President, ISHRAE Goa Chapter and Retired officer from Goa Shipyard Ltd.

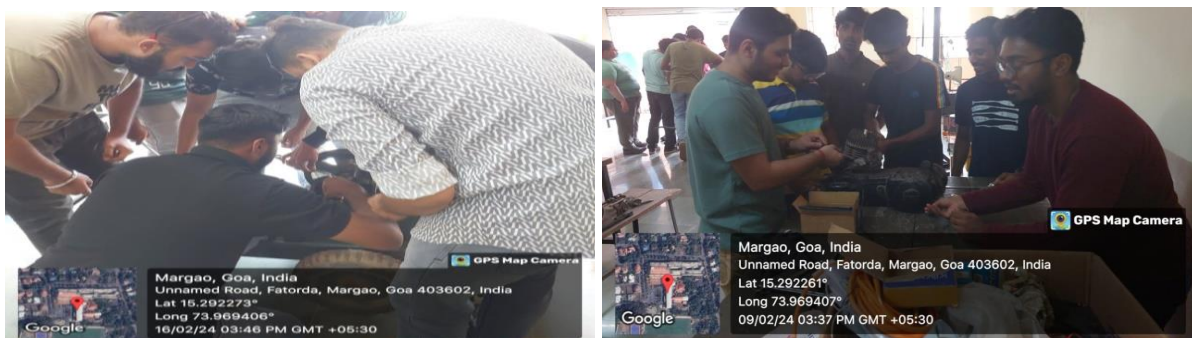
Mr. Prakash Naik provided insights on the need for Maintenance and various techniques; namely, Predictive, Preventive & Corrective techniques in maintenance engineering. He highlighted the importance of proper maintenance of HVAC systems as it is crucial for ensuring optimal performance, energy efficiency, and a comfortable indoor environment. He explained about the various maintenances activities like filter replacement; coil cleaning,

Inspection of refrigerant levels, testing Controls and Thermostats etc. He also showed and explained briefly about the various tools that are used in HVAC systems to carry out the maintenance activity. He said that the Maintenance of HVAC Equipment is not merely a routine but a commitment to excellence, sustainability, and efficiency.



Session 2 and 3: Practical sessions on dismantling and assembling different components

The 2nd and the 3rd sessions were conducted on 9th Feb and 16th Feb 2024 where the students were given components like air compressor, manual press machine, transformer coil winding machine, and 2-Stroke engine. The students were given the task to dismantle the given equipment and assemble it. The purpose of this activity was to gain practical experience and understanding of the internal workings of various parts, gathering the necessary tools and equipment for dismantling the component systematically, examining each part during the dismantling process and reassembling the components by verifying the correct alignment and positioning of each component ensuring each part is fitted correctly and according to specifications. By following proper procedures and guidelines, it was possible to dismantle and reassemble components effectively and efficiently.



Session 4: Technical 'Introduction to CNC Machining'

This session was held on 19th April 2024 at the CNC Center of the college from 3:00 PM to 4:00 PM, aimed to provide attendees with practical insights into the world CNC machines and their working. The session was delivered by Prof. Sachin Turi, Prof. Gaurish Samant and Prof. Aniket Naik, Assistant Professors at Department of Mechanical Engineering. The

session began with an insightful presentation detailing the evolution and significance of CNC technology in various industries. Students gained valuable insight into how CNC machines have revolutionized manufacturing by automating precision tasks.

Students were introduced to the intricate components of CNC machines. Each component, from the control panel to the spindle and axis, was explained in detail regarding its role in the machining process. A notable highlight of the session was the demonstration of CNC machine programming and operation. Students observed first-hand how CNC machines are programmed to execute precise machining tasks. From tool selection to tool path planning, every step in the machining process was carefully explained and demonstrated.

Students had the opportunity to engage in hands-on activities, where they learned how to set up tools, load materials, and initiate machining operations on a CNC machine. This practical experience not only reinforced theoretical concepts but also boosted students' confidence in tackling real-world machining challenges.



Session 5: Field Visit to Sanofi Goa Development Center

This field visit session was held on 25th April 2024. The visit was organized by Mr. Prasad Adpaikar, Manager Engineering & Operations. The visit started with a presentation by Mr. Prasad Adpaikar, which covered the overview of Sanofi, various machines, utilities in the plant, various maintenance practices followed for the various utilities and most importantly the role of engineers in pharmaceutical industries. A short video of the Sanofi R&D Goa development centre was also shown to the students.

After the brief overview the students were divided in to two groups and were taken to the various auxiliary units by Mr Prasad and his engineering team which helped the students exploring the powerhouse substation, Boiler & chiller section, Air handling Units, Compressor units, Diesel generators etc. During the visit, students were able to see the newly installed 1800KW solar PV plant which is one of the biggest in the state of Goa. They were briefed about the monitoring system, which tracks the panel's performance and the energy produced. The panels are capable of generating enough energy to power the entire facility on sunny days.



TECH – TALKS 2024

The Industry Institution Cell of Don Bosco College of Engineering, Fatorda in association with Mechanical Engineering Department organized Tech Talks on 27/3/24.

Dr. M. R. Ramesh Kumar, Chief Scientist (Retired), POD, National Institute of Oceanography (NIO), Goa delivered a talk titled “Antartica: A Natural Lab for study of Climate Change”. He spoke about the various Antartica Expeditions and dealt on reasons for climate change. He also elaborated on the adverse impact of climate change on future generations.

Mr. Mayur Shetti, Operations Manager, Shetti Group, Goa and Alumnus of the college spoke on the topic “Cryogenics and its Applications. He introduced the students to Cryogenics and dealt on the milestones in development of cryogenics and emphasized on the mechanical properties of material at low temperatures. He further elaborated on various applications in the field of medicine, mechanical, space and superconductivity.

The event was coordinated by the Department IIC Coordinators, Prof. Ajit Salunke and Prof. Sanjeel Naik.



FIELD VISITS

DBCE FSAI STUDENT CHAPTER VISITS ONGC IPSHEM, GOA FOR FIRE SERVICE WEEK- 2024 PROGRAM

The ONGC Advanced Training Institute commemorated April 14, 2024, as Martyrs Day to honor the courageous firefighters who sacrificed their lives in the line of duty, as part of Fire Service Week-2024 running from April 14 to April 20, 2024. Student members of the DBCE FSAI Chapter actively participated in the event, facilitated by the Fire and Security Association of India (FSAI) Goa Chapter. They were accompanied by Prof. Ajit Salunke, the Faculty Advisor of the Chapter, and Prof. Aniket Naik, the Faculty Coordinator.

The program commenced with a solemn tribute to the Martyrs, followed by speeches from distinguished guests and a collective Fire Safety pledge by all attendees. Mr. Sanjeev Singhal, Executive Director & Head of the Institute of Petroleum Safety, Health, and Environment Management (IPSHEM), graced the occasion as the Chief Guest. Fire officers conducted a demonstration on BLEVE (Boiling Liquid Expanding Vapor Explosion). Subsequently, the students were guided through the State-of-the-Art Sea Survival Center for advanced training. The Centre stands as India's deepest training facility, offering simulated experiences to aid personnel in successfully exiting a helicopter cabin in the event of a crash. The facility boasts the country's deepest pool and is equipped to replicate realistic scenarios including mist, waves, darkness, and rain. It can generate eight different types of waves up to two meters in height, with four significant wave chambers integrated into the pool. Additionally, the facility includes a full-scale simulation of a helicopter cabin.

Mr. Dipin S Pradeep, Manager at IPSHEM, ONGC, elucidated on the various real-time simulators employed and the rigorous training participants undergo to survive adverse climatic and environmental conditions in the field. Mr. Alok Kumar, Manager of Fire Services at IPSHEM, ONGC, along with Dr. Ganesh Hegde, President of the FSAI Chapter, coordinated the visit.



SECOND YEAR MECHANICAL STUDENTS OF DBCE VISIT AVIZA TECHNOLOGIES

On May 13th 2023, the second-year Mechanical students from Don Bosco College of Engineering, Fatorda embarked on a field trip to Aviza Technologies located in Kundaim Industrial Estate. This educational excursion was facilitated by the Mechanical Engineering Student Hub (MESH) and coordinated by Dr. Avil Allwyn Dsa, Assistant Professor in the Department of Mechanical Engineering.

Aviza Technologies specializes in precision sheet metal design and manufacturing for the electronics and telecommunication industries. Notably, they supply sheet metal panels to prominent companies like Commscope and Siemens. During the tour, Mr. Umesh Polji, Head of Stores and Procurement, guided the students through the shop floor, providing insights into various manufacturing operations on sheet metal panels. The students gained a firsthand understanding of Aviza Technologies' commitment to meeting customer needs for Quality, Price, Delivery, and Services. The visit commenced with an introduction to the raw materials utilized by Aviza Technologies, namely Aluminum and Steel. Students were then introduced to different types of CNC punching machines, which were demonstrated performing operations tailored to customer requirements. The intricate processes of punching tools and sheet metal bending machines were elucidated to the students. Additionally, various Inspection Tests were showcased to emphasize the importance of accuracy and quality control in the manufacturing process. The students also had the opportunity to observe the powder coating process, gaining insights into the different stages involved in metal powder coating.

The field trip proved to be highly interactive, with students displaying eagerness and curiosity to learn about the inner workings of a manufacturing plant. Overall, it was a profoundly enlightening experience for the second-year Mechanical students, providing valuable insights into real-world industrial practices.



TRAINING & PLACEMENT

Don Bosco College of Engineering is committed to nurturing a culture of strong work ethics and effective corporate leadership within its student body. Through collaborations with prominent industry figures, the college continuously enhances opportunities for career growth. The recent placement season saw participation from prestigious companies, highlighting our commitment to grooming future leaders in the industry.

Nitesh Kumar Singh secured a position at Ceat Tyres, Mumbai, a leading manufacturer in the segment renowned for its commitment to innovation and quality in producing a diverse range of tires for cars, motorcycles, trucks, and agricultural vehicles.



Sushant Pradeep Kumar Maurya and Nash Raul Gomes were placed at IFB India, known for its innovative designs and advanced technology in producing a wide range of home appliances

Akhilesh Arun Mahabal and Aditya Dilip Lotlikar landed positions at Buoyancy Consultants & Engineering LLP, a consultancy firm specializing in engineering and consultancy services for new builds, retrofits, Brownfield, and Greenfield marine projects.



Abhijit Anil Pulikkal, Aden Gomes, Akshay Madan Naik, Ayres Alroy Pascoal Pereira, Bosco John Medeira, Trish Immaculate Dourado, Savio Franky Medeira, and Pranav Uday Anklekar received job offers from ACE Centro Enterprises based in the UAE. ACE offers engineering products, technical services, and rental solutions to clients in the Petrochemical, Marine, Civil Construction, Quarrying, and Mining sectors.



FACULTY INITIATIVES

PAPER/ JOURNAL PUBLICATIONS

Sr. No.	Author Name	Title of Paper	Details of Journal name, volume, series, year/ Conference Details	National/ International
1.	Gaurish Samant	Investigating Mechanical Properties and water absorption behavior of composites developed from locally available agro-waste	International Conference on Sustainable Materials for Engineering Applications (ICSMEA 2024)	International Conference held at IIT, Madras
2.	Chetan Gaonkar	Advances in Muffler Acoustics : From Conventional Material to Acoustic Metamaterial	1 st International Conference on Advanced Materials Manufacturing & Structures ICAMMS-24	International Conference held at RIT, Chennai.

WORKSHOPS/SEMINARS/EXPERT TALKS ATTENDED

Sr. No	Seminar/Workshop/ Short Term Courses/ Conferences/ Training Programmes etc.	Date	Duration	Organization	Name of the Staff Participated
1.	One day workshop on 'Fundamentals of CNC Programming' organised by Forum for Innovation Incubation Research and Entrepreneurship (FiiRE) in association with Mechanical Engineering Department	9 th Feb 2024	1 day	DBCE	Prof. Gaurish Samant Prof. Aniket Naik Mr. Diptesh Naik Mr. Johnson Vaz
2.	A short discourse on Funded Research titled "Obtaining Research funding through impactful proposals" by Dr. Anirudha Ambekar, Assistant Professor, IIT Goa	12 th April 2024	1 hr	Mech Dept	All Faculties

3.	NPTEL course on Energy Resources, Economics, and Sustainability	Feb-April 2024	8 week	IIT Roorkee	Prof. Sharad Shanbhag
4.	NPTEL course on Supply Chain Digitization	Jan-April 2024	12 week	IIT Mumbai	Prof. Sachin Turi Prof. Sanjeel Naik
5.	One week ISTE approved STTP on Six Sigma for Improved Quality Management in association with IEI Goa State Centre and sponsored by DST & Waste Management, Govt of Goa	13 th – 17 th May 2024	1 week	DBCE	Prof. Chetan Gaonkar Prof. Aniket Naik Prof. Sharad Shanbhag Prof. Gaurish Samant Prof. Tanay Rege
6.	NPTEL course on Principles of Industrial Engineering	Jan-April 2024	12 week	IIT Roorkee	Prof. Sharad Shanbhag
7.	NPTEL course on Industrial Hydraulics and Automation	Jan-April 2024	12 week	IIT Madras	Prof. Tanay Rege

FACULTY INITIATIVES

“ROLE OF SIMULATION IN INDUSTRY 4.0 “AT VIDNYAN DHARA 2024 BY DR. SURAJ MARATHE

Dr. Suraj Marathe, Associate Professor from the Mechanical Department at DBCE, recently delivered an engaging lecture on the Role of Simulation in Industry 4.0 to the students of Shri Kamashi High School, Shiroda on 17th February 2024. This insightful session was part of Vidnyan Dhara 2024, a dynamic science series dedicated to nurturing scientific inquiry among young minds.



Dr. Marathe interacted extensively with the students, captivating their attention and igniting their curiosity about the role of simulation in Industry 4.0. He delved into the importance of simulation in the context of Industry 4.0, shedding light on its applications and implications in various industries. Dr. Marathe inspired students to explore the realms of science and technology with enthusiasm and passion. The session successfully achieved its objectives of promoting scientific inquiry and exposing students to cutting-edge advancements in science and technology. Dr. Marathe's expertise and engaging presentation style contributed to the overall success of the event.

Science teacher Miss Poorva Naik extended her gratitude to Dr. Suraj Marathe for his insightful session, emphasizing the enriching experience it provided to the students. The session concluded on a positive note, leaving students with enhanced knowledge and insights into the role of simulation in driving innovation across various industries.

TALK ON "3D PRINTING IN HEALTHCARE" AND "SMART FARMING TECHNOLOGIES FOR THE FUTURE," AT VIDNYAN DHARA 2024 BY PROF. AJIT SALUNKE

Professor Ajit Salunke, an Associate Professor in the Mechanical Department at DBCE, delivered two enlightening lectures as part of Vidnyan Dhara 2024, a captivating science series organized to inspire scientific curiosity among young minds.

The lecture "3D Printing in Healthcare" at Popular High School, Margao, on February 21, 2024, showcased various 3D printing processes in healthcare, including implants, prosthetics, and surgical instruments. Professor Salunke also discussed advancements like 3D bioprinting and Reverse Engineering techniques.

The second lecture, "Smart Farming Technologies for the Future," at Shishu Vikas High School, Margao, on February 23, 2024, highlighted Agriculture 4.0's integration of 3D Printing, robots, drones, AI, and IoT. Professor Salunke emphasized their roles in tasks from ploughing to farm management, showing videos to engage the audience.



In both lectures, Professor Salunke captivated the audience with his expertise and passion for the subjects, leaving a lasting impression on the attendees and furthering the mission of Vidnyan Dhara 2024 to foster scientific curiosity and knowledge dissemination among the youth.

TALK ON ‘BIOMIMETICS: LEARNING FROM NATURE’ AT GOVERNMENT HIGH SCHOOL ZAMBAULIM UNDER VIDHYAN DHARA 2024 BY MR. TANAY REGE

The Government High School Zambaulim hosted a captivating talk on 'Biomimetics: Learning from Nature' on February 28, 2024. Presented by Mr. Tanay Rege, Assistant Professor at Don Bosco College of Engineering, the session was part of Vidnyan Dhara 2024, a science series dedicated to fostering scientific inquiry among students.

During the talk, 60 students from Classes 6 to 8 explored nature's influence on technology. Examples included Japan's bullet trains inspired by the kingfisher bird's beak for speed and quietness, and Velcro, mimicking burrs' hooks. The discussion covered airplane designs based on bird flight patterns, ultrasonic sensors inspired by bats' echolocation, and their applications in robotics, cars, and aiding the blind.

Students also learned how robots imitate animal movements like elephants and octopuses, and about adhesives modeled after gecko feet. Aircraft designs like the B2 bomber borrow from birds' flight mechanics, and wind turbines are inspired by whale fins.

The session concluded by encouraging students to closely observe nature and contemplate how its designs could inspire future inventions. Overall, the talk promised to spark curiosity and inspire students to think creatively about the world around them



TALK ON “ROLE OF SIMULATION IN INDUSTRY 4.0” AT GOVERNMENT POLYTECHNIC BICHOLIM BY DR. SURAJ MARATHE

Dr. Suraj Marathe, Associate Professor from the Mechanical Department at Don Bosco College of Engineering delivered a guest lecture on the “Role of Simulation in Industry 4.0” to the students of the Mechanical Department of Government Polytechnic Bicholim (GPB) on 13th March 2024. This insightful session emphasized the recent developments in the industry and was organized by the Mechanical Department of GPB.

Faculty member, Mr Ashish Prabhu introduced and set the tone of the talk throughout the session Dr. Marathe interacted extensively with the students, captivating their attention and igniting their curiosity about the role of simulation in Industry 4.0. He delved into the importance of simulation in the context of Industry 4.0, shedding light on its applications and implications in various industries. Dr. Marathe inspired students to explore the realms of science and technology with enthusiasm and passion. The session successfully achieved its objectives of promoting scientific inquiry and exposing students to cutting-edge advancements in science and technology.

Mr Vivek Narvekar HOD- Mechanical, GPB, extended his gratitude to Dr. Suraj Marathe for his insightful session, emphasizing the enriching experience it provided to the students.. The session concluded on a positive note, leaving students with enhanced knowledge and insights into the role of simulation in driving innovation across various industries.



PROF. AJIT SALUNKE RECEIVES FELLOWSHIP FROM THE INSTITUTION OF ENGINEERS (INDIA)

Prof. Ajit Salunke has been enrolled as a Fellow of the Institution of Engineers (India) and placed in the Mechanical Engineering Division. The Institution of Engineers (India) is the largest multi-disciplinary professional body of engineers, established in 1920. The Institution has been serving the engineering fraternity through 125 Centres spread all over India, 6 Overseas Chapters, 7 Fora and an Organ namely Engineering Staff College of India (ESCI), Hyderabad. The Institution encompasses 15 (fifteen) engineering disciplines with a Corporate membership of over 2 lakhs.

Fellow is the highest grade amongst the IEI Corporate Members category and is awarded based on the knowledge, contribution, and experience of the person in the respective engineering field after due scrutiny of the application by a board of eminent personalities.

STUDENT CORNER

STUDENT ACHIEVEMENTS

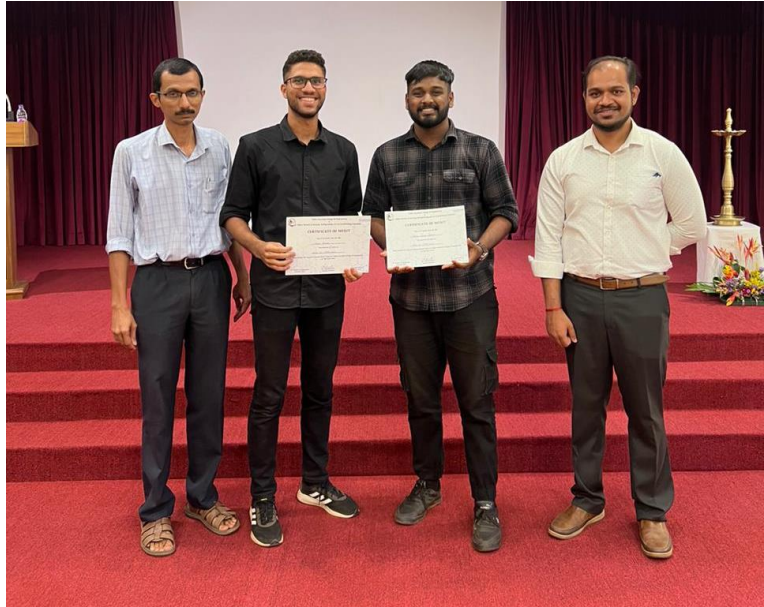
SECOND YEAR MECHANICAL STUDENT, VASANT NAIK SHOWCASES HIS TALENT AT KAAVI ART WORKSHOP AT RAJ BHAVAN

Vasant Naik, a second-year student in the Mechanical Engineering Department at Don Bosco College of Engineering, took part in the KAAVI Art workshop held at Raj Bhavan in the new Durbar Hall, Dona Paula. This workshop, organized by Raj Bhavan, showcased Kaavi Art, a traditional mural art form prevalent in the Konkan region, particularly in temples, churches, and heritage homes along the coastal areas of Goa. Vasant had the honor of being recognized and felicitated by the Hon. Governor of Goa, Shri. P. S. Sreedharan Pillai. Collaborating with leading artists from the state made the event a highly rewarding and memorable experience for Vasant.



DBCE FINAL YEAR MECHANICAL STUDENTS TRIUMPH AT TAPAS 2024

Mr. Ayres Pereira and Mr. Aden Gomes, Final Year Mechanical Engineering students of Don Bosco College of Engineering, won first place in the quiz competition at TAPAS 2024; a one-day program on Energy Conservation, Renewable technologies, and Sustainable Engineering organized by ISHRAE Students chapter of Padre Conceicao College of Engineering on 3rd April 2024. The event featured enlightening talks delivered by industry experts as part of a comprehensive lecture series centered around the aforementioned themes, followed by a highly competitive quiz competition, where students from different engineering institutions in Goa vied for top honors. Despite facing stiff competition from seven other teams representing various engineering institutions across Goa, the duo showcased their exceptional grasp of the subject matter, emerging triumphant at the competition.



DBCE MECHANICAL FINAL YEAR STUDENTS SWEEP TECHNIX 2024 WITH INNOVATION AND SKILL

The Final Year Project Quality Assurance Committee, Department of Electronics and Computer Science Engineering in association with Don Bosco Electronics and Telecommunication Society (DBEATS), successfully organized Technix 2024 from April 13th to May 3rd, 2024. The esteemed jury, featuring Mr. Anand Lokapure, Senior Scientist at CSIR-NIO, Marine Instrumentation Department, and Mr. Thejus Joseph, Interim CEO at FiiRe-Goa, lent their expertise, enriching the evaluation process. The competition attracted participation from over 30 teams across colleges and universities from Goa and other states. Out of these, 15 abstracts were shortlisted for the final presentation, spanning diverse domains such as Augmented Reality, Robotics, Embedded Systems, Signal Processing, Machine Learning, Artificial Intelligence, Biomedical Engineering, Communication Engineering, 3D printing, and Mechatronics.

The Mechanical Department distinguished itself with notable achievements. The winners of Technix 2024 are as follows:

- First Place: Ayres Alroy Pereira, Aden Gomes, Adriel Ansel Rebelo Bosco John Medeira, and Savio Franky Medeira, guided by Prof. Gourish Samant, secured first place with their project, "Indigenous Lightweight Bulletproof Jacket."
- Third Place: Aadarsh Chodankar, Adler Vaz, Aditya Lotlikar, and Sifan Siraj Sayed, under the mentorship of Dr. Suraj Marathe and Prof. Tanay Rege, impressed the judges with their project, "Design and Development of a Robotic Knee Exoskeleton for Rehabilitation and Mobility Assistance Based on Motion Intention Sensors"

Technix 2024 showcased the talent and ingenuity of students from Don Bosco College of Engineering. The event provided a platform for innovation, collaboration, and the exchange of ideas, contributing to the advancement of technology and engineering solutions.

FAREWELL

BE MECHANICAL FAREWELL 2024

The farewell ceremony for the Mechanical Engineering students of Don Bosco College of Engineering was held on 3rd May 2024 in the college auditorium. The event marked the conclusion of the students' academic journey and provided an opportunity to bid farewell to the outgoing batch.

Kicking off with a jubilant atmosphere, the ceremony commenced with a blend of fun-filled games and nostalgic reflections, capturing cherished moments from the students' college life. Juniors presented energetic dance performances, while a musical gig featuring lively Konkani songs added a touch of local flair to the proceedings.

The Head of the Mechanical Engineering Department, Dr. Pravin Verekar, delivered a warm address, reminiscing on the growth and accomplishments of the outgoing students. Following suit, the Principal Dr. Neena Panandikar shared inspiring words, acknowledging the significance of the students' contributions to the field of engineering and wishing them success in their future endeavors. The Director, Rev Fr Kinley D'Cruz, reflected on the journey of the students with a poignant analogy: "Just as ships are meticulously crafted in the shipyard, so too are our students moulded and prepared by the dedication of our college and staff. As they embark on



their professional careers, they sail forth with confidence, knowing they have been built to navigate the roughest seas ahead." Additionally, various faculty members and students took the stage to recount fond memories and anecdotes shared with the departing batch, further enriching the nostalgic atmosphere of the event.

In recognition of academic excellence and exemplary character, Mr. Aden Gomes was honored as the Best Outgoing Student of the Mechanical Department, standing out for his remarkable achievements and contributions throughout his academic journey. Meanwhile, the prestigious title of Most Distinguished Alumni for the year 2024 was conferred upon Mr. Joel Colaco, recognizing his outstanding accomplishments and continued association with the institute.

The ceremonial cutting of the farewell cake marked the symbolic conclusion of the students' time at Don Bosco College of Engineering, signifying the beginning of a new chapter in their lives. Amidst heartfelt goodbyes and well wishes, the students bid farewell to their alma mater, expressing gratitude for the knowledge gained and memories shared during their time at the institution.



INTERVIEW

ALUMNI PROFILE: AN INTERVIEW OF MR. JOEL COLACO

Interview and Transcript by Mr. Aaron Rodrigues

Earlier this year one of our student Mr. Aaron Rodrigues had the opportunity of interviewing Mr. Joel Colaco, alumni of Department of Mechanical Engineering, Don Bosco College of Engineering Goa, currently associated with Macbrou Engineering Pvt. Ltd.



Aaron Rodrigues: Hi Joel, could you please introduce yourself and describe your role at your workplace?

Joel Colaco: “I’m Joel Colaco, a passionate engineer who graduated from Don Bosco College of Engineering in 2019. After starting my career as a design engineer, I transitioned to become an Automation Support Engineer at Macbrou Engineering Pvt. Ltd. In my current role, I specialize in designing, implementing, and maintaining automated systems to streamline processes and increase efficiency. My role involves troubleshooting technical issues, providing support to users, and continuously improving automation solutions to meet the evolving needs. I leverage my expertise in various programming languages and automation tools to optimize workflows and enhance productivity across the organization.”

Aaron Rodrigues: There’s always a change in environment from college to workplace. How would you describe this shift?

Joel Colaco: “The shift from a college environment to a workplace environment is a significant transition marked by several notable differences. In college, the focus is largely on academic pursuits, theoretical learning, and individual growth. Students have a degree of flexibility in managing their time and often operate within structured frameworks of classes and assignments. On the other hand, the workplace environment is characterized by a greater emphasis on practical application, collaboration, and real-world problem-solving. Individuals are expected to adapt to professional norms, adhere to deadlines, and work effectively within teams. The pace is often faster, and decisions carry real consequences for the organization. Additionally, the workplace typically offers opportunities for ongoing learning and professional development, but the responsibility for one's growth and success lies more squarely on the individual. Moreover, interactions in the workplace tend to be more diverse, encompassing colleagues from various backgrounds and levels of experience.”

Aaron Rodrigues: If you could go back and re-experience your college days, what would you do differently this time?

Joel Colaco: “In college, I'd focus on attending field-related workshops and seminars to gain insights and clarity on career paths. Active participation would deepen my understanding of industries and skill requirements, helping me make informed decisions. Networking opportunities could also lead to valuable mentorship”

Aaron Rodrigues: In the industry we see an immense use of AI from predictive maintenance to quality control to supply chain optimization. Do you think AI can carry out the jobs of mechanical engineers?

Joel Colaco: “AI has the potential to significantly impact the field of mechanical engineering by automating certain tasks and improving efficiency. While AI can excel at tasks like data analysis and predictive maintenance, it's unlikely to fully replace mechanical engineers. Mechanical engineering involves a broad range of skills, including problem-solving and hands-on design, which are challenging for AI to replicate completely. Instead of replacing engineers, AI is more likely to enhance their capabilities by automating repetitive tasks and providing insights from data, allowing engineers to focus on more complex and creative aspects of their work.”

Aaron Rodrigues: You've recently been awarded as best performing alumni from the mechanical department. Would you mind sharing your future plans with us?

Joel Colaco: “I plan on pursuing a master's degree in aerospace manufacturing. My current experience as an Automation Support Engineer working for an aerospace part manufacturing company has solidified my belief that this master's program is the ideal choice for me. It has given me first-hand exposure to the complexities and challenges of the aerospace industry, and through this program, I aim to deepen my understanding of advanced manufacturing techniques, materials science, and quality control methods, all of which are essential for driving innovation and excellence in the aerospace industry.”

Aaron Rodrigues: Can you tell us about an advice that has stuck with you till date?

Joel Colaco: “One piece of advice that has resonated with me and continues to guide my approach is: ‘Always strive for continuous improvement, both personally and professionally.’ This mind-set encourages me to embrace challenges, seek out opportunities for growth, and never settle for the status quo. I adhere to the principle that the moment one ceases to actively pursue growth, there is invariably someone, somewhere, diligently surpassing them.”

Aaron Rodrigues: Would you like to end with any message for the current students?

Joel Colaco: “I've walked the path you're on now and I had similar doubts and fears in my mind. Remember, every challenge you face is an opportunity to grow. Embrace the journey, stay curious, and never underestimate your potential. Believe in yourself, work hard, and keep striving for excellence. Your future is bright, and your dreams are within reach so keep pushing forward.”