



MECHBYTES

NEWSLETTER OF MECHANICAL ENGINEERING DEPARTMENT

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Editors (Faculty):

Mr. Tanay Rege

Editor (Student):

Mr. Masilon 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 (PEO'S)

- Graduates will apply Engineering Knowledge and demonstrate the requisites 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 will concern for the society.

PROGRAM SPECIFIC OUTCOMES (PSO'S)

- 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

MECHANICAL ENGINEERING STUDENTS HUB (MESH) 2023-24 COMMITTEE

INSTALLATION

The Department of Mechanical Engineering of Don Bosco College of Engineering, Fatorda, held the installation of MESH (Mechanical Engineering Students Hub) Council on 15th September 2023, at 10:00 a.m. The dignitaries on the dais were Chief Guest - Mr. Ajit Gaonkar, Principal of Government Polytechnic, Curchorem, Special Invitee – Mr. Savio Carvalho, Director of Turbocam Private Limited, Director - Reverend Father Kinley D’Cruz, Principal - Dr. Neena Panandikar, alongside Dr. Pravin Verekar – HoD Mechanical.

The event began by commemorating Engineers’ Day by playing a video on Sir M. Visvesvaraya, renowned Indian Civil Engineer. This was followed by a prayer to set the stage, and the Traditional Lighting of the Lamp by the dignitaries. The dignitaries were then formally welcomed with a bouquet of flowers. Mr. Ayres Rodrigues, MESH Editor, presented a brief overview of the MESH activities conducted in the year 2022-23. This was followed by Dr. Pravin Verekar’s address to the gathering in which she highlighted the importance of upholding the essence of MESH.

The Principal spoke about the “*value of inculcating such activities in regular curriculum*” and appreciated the Department’s effort in doing so. The Director, in his address, underlined the importance of “*working together as a team*” in keeping up the Council’s initiatives. This was followed by the felicitation of Mr. Savio Carvalho, Special Invitee, for his contribution to the launch of Chandryaan-3. Mr. Carvalho then presented a Technical Talk on the same, providing the students with details of the launch.



The new Council was hence installed by the Chief Guest, by pinning the badges to the respective members. The new council consisted of Chairman – Mr. Aires Joe Sousa, Secretary – Mr. Shane Mendes, Treasurer – Mr. Nimish Floyd Noronha, Editor – Mr. Masion Mascarenhas, and Student Executive Member – Mr. Dev Kalgutkar. The Chief Guest was introduced by Mr. Tanay Rege, Asst. Prof. Mechanical Department, followed by his address. Mr. Gaonkar appreciated the initiative and spoke about the role of good engineers in society. He advised the students to “*start working towards a goal, right as a student*”, as it would yield good results. A token of gratitude was presented to the Chief Guest by the the Director. The ceremony ended with a Vote of Thanks by Mr. Aires Joe Sousa expressing his gratitude to the dignitaries, organisers and presenters. The event was coordinated by Prof Sanjeel and Dr Suraj Marathe.

The Installation ceremony was followed by a Workshop by Team Phoenix Goa on Robots and Drones, then followed by a Futsal Match between Students and Faculty Members of Mechanical Department.



INSTALLATION OF CHAPTER WORKING COMMITTEE OF ISHRAE DBCE STUDENTS CHAPTER 2023-24

The Mechanical Engineering Department of Don Bosco College of Engineering, Fatorda installed the Chapter Working Committee (CWC) of the ISHRAE (Indian Society of Heating Refrigeration and Air Conditioning Engineers) DBCE Students Chapter for the Academic Year 2023-24 on 9th September 2023. The installation was graced by Chief Guest and the keynote speaker for the event Mr Rupchand Aldonkar, President ISHRAE Goa Chapter. jhRev. Fr. Kinley D’Cruz, Director; Neena Panandikar, Principal; Dr Suraj Marathe, Officiating HOD of Mechanical Department and Prof. Ajit Salunke, Faculty advisor were also present for the installation.

The event commenced with the National Anthem followed by welcome address by Prof. Ajit Salunke wherein the guidelines regarding ISHRAE and the work contributed by the community to reach out to students interested in Heat, Air conditioning and Refrigeration (HVAC&R) through Seminars was highlighted. On behalf of Dr. Pravin Vekerar, HoD-

Mechanical, who unfortunately couldn't join the installation, Dr Suraj Marathe highlighted the presence of ISHRAE DBCE Students Chapter for the past many years and the key works carried out by the said community in the fields of HVAC&R over the years through field visits and seminars. Dr Neena Panandikar motivated the students to go forward in collaboration in ISHRAE by getting involved in various competitions and technical events. Rev. Fr. Kinley D'Cruz stimulated all members to participate and make the best use of the opportunity provided. He also advised the newly elected council members to put on their "thinking caps" for better preparation of the upcoming events. Mr Rupchand Aldonkar elucidated the main objective of ISHRAE by listing the benefits they furnish like conducting webinars, industrial visits, study material etc. Additionally, all the efforts put forward by Prof. Tanay Rege was appreciated for encouraging the students to be a member of one of the most active societies.



Prof. Tanay Rege, Faculty Coordinator, ISHRAE DBCE Students Chapter; administered the oath to the newly elected Chapter Working Committee(CWC), comprising of Mr Aditya Lotlikar, President; Mr Rio De Mello, President Elect; Mr Myron Fernandes, Secretary; Mr Akshay Naik, Treasurer and CWC members, Mr Dev Kalangutkar, Mr Abhishek Dias and Mr Elden Rodrigues.

The event concluded with Mr Aditya Lotlikar, President ISHRAE DBCE Students Chapter, proposing the vote of thanks.

INSTALLATION OF CHAPTER WORKING COMMITTEE OF FSAI DBCE STUDENTS CHAPTER 2023-24

The installation ceremony of the new office bearers of the Fire and Security Association of India (FSAI) DBCE student's chapter for the year 2023-24 was held on 30/10/23 at Don Bosco College of Engineering, The Chief Guest for the function was Ms. Eгна Cleetus, IAS, Deputy Collector & SDM, Govt. of Goa. Mr. Ashok Menon, FSAI National Secretary, Mr. Anand Ramakrishnan, Secretary, FSAI, Goa Chapter, Rev. Fr. Kinley D' Cruz, Director, Dr.

Suraj Marathe, officiating HOD, Mechanical Engineering Department and the newly appointed President of student's chapter, Mr. Aaron Rodrigues were also present on the dais.

Mr. Aniket Bhaskar, joint secretary presented the annual report of the activities carried out by the chapter in the academic year 2022-23. Prof. Ajit Salunke, Faculty Advisor welcomed the dignitaries and guests. Dr. Suraj Marathe highlighted the achievements of the chapter over the years and congratulated the incoming committee. Fr. Kinley said that the motive behind the DBCE chapter is "to make great things happen". He elaborated on the collaboration between professionals from the field of fire and security and students. Mr. Ashok Menon installed the new office bearers and urged the students to look for innovative solutions for safety and security. He also said the DBCE can explore the possibility of setting up a skill development center on its campus. Ms. Eгна Cleetus emphasized the role of student associations in building organizational and leadership skills to achieve their career goals. She also shared her personal experiences while pursuing her engineering studies. Prof. Aniket Naik, faculty coordinator proposed the vote of thanks. The event was coordinated by Dr. Ganesh Hegde, President, FSAI Goa Chapter, Prof. Ajit Salunke, and Prof. Aniket Naik. Mr. Anish Barreto compered the installation ceremony.

Earlier in the day, Vidyanand Pawar, Police Inspector from the Cybercrime Police Station, Ribandar conducted a seminar on "Cyber Crime & Cyber Law- Cyber Security in India" for Mechanical Engineering students. A Safety & security-themed poster competition was also organized for the students.



WORKSHOPS/ SEMINARS / WEBINARS & EXPERT TALKS

'DEMONSTRATION OF SYSTEM RESPONSE AND CONTROL – USING MODERN TOOLS' 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 talk on 'Demonstration of System Response and Control Using Modern Tools.' The event aimed to provide attendees with practical insights into the world of system response and control.

The talk was delivered and coordinated by Mr. Tanay Rege, Assistant Professor in the Department of Mechanical Engineering. Dr. Rolando da Cruz, the college's librarian, and Mrs. Vanessa Fernandes, a Library Assistant, provided valuable support as coordinators.

Mr. Tanay Rege kicked off the talk with simulations using MATLAB and Simulink, showcasing how first and second order systems respond to different inputs. These simulations offered a hands-on experience, enabling the audience to witness the diverse behaviours exhibited by these systems under varying conditions. A key focus of the presentation was the in-depth investigation of how system parameters, such as time constant, gain, natural frequency, and damping ratio, affect the responses of first and second order systems. Attendees gained a deeper appreciation for how manipulating these parameters can significantly influence system behaviour. The practical application of these concepts was demonstrated through a first order system - a resistance-capacitance circuit.

The event saw a live demonstration of a temperature control system integrated with PLC and SCADA. Various control modes, including On/Off mode, Proportional (P) Mode, Proportional-Integral (PI) Mode, and Proportional-Integral-Differential (PID) Mode, were showcased. This real-world demonstration provided a clear understanding of how different control strategies can impact system responses.



The event attracted 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.

FIELD VISITS

TE MECH FIELD VISIT TO TURBOCAM INDIA

The third-year Mechanical students of Don Bosco College of Engineering, Fatorda visited Turbocam India Pvt. Ltd. in Margao Industrial Estate on October 07, 2023. The field visit was organised under the association of the Mechanical Engineering Student Hub (MESH) and well-coordinated by Dr Suraj Marathe, Associate Professor of Mechanical Engineering Department.

It's said "The Architects of an Energy Efficient Tomorrow, Turbocam", serves turbomachinery-related industries, including aerospace, automotive and power generation companies which include Space Rocketry creating propulsion components, Aviation/Aero-Engines manufacturing the vanes, stators and bladed rotor, Automotive Turbomachinery, Power Generations producing a wide range of core turbomachinery components, HVACR, etc.

The shop floor tour was given by Mr Iza Henry Thomas, Safety Engineer in Turbocam and Mr Gilroy Coutinho, Training Officer in Turbocam, who briefed the students about Turbocam Specializes in Precision Manufacturing using the Multiaxis CNC machines and enabling technologies. Turbocam seeks to satisfy the needs of its customers for Quality, Price, Delivery and Services. The students were first introduced to Raw Materials they currently work on i.e. Aluminum, Stainless Steel, Titanium, and Inconel.

The CNC Milling Processes involve the material being held in place while the cutting operations tools rotate around it. CNC turning, on the other hand, requires the tools to remain in the same place while the materials are rotated at speed to create the exact shape. Different types of CNC machines were shown on the shop floor such as 3 Axis Machining, 4 Axis Machining, and 5 Axis Machining performing suitable applications. A different type of cutting tool where the Engineering team sets the process and Autodesk software stimulates. To check the accuracy and maintain the quality stages various types of Inspection Tests were performed maintaining the accuracy of one micron.

Overall the field visit was very Interactive with small question-and-answer sessions and all the student's willingness and curiosity to learn about how a manufacturing plant operates.



FIELD VISIT TO IMS CAMPUS VASCO

The Students of Final Year (BE) from the Department of Mechanical Engineering – Don Bosco College of Engineering (DBCE) visited the campus of Institute of Maritime studies (IMS), Vasco on 7th November 2023. The visit was planned as per the career preferences of the students, inclined towards marine engineering as a further studies option.

The session commenced with a welcome note from Mr Heston Dias, Lecturer IMS. He elaborated the teaching learning process at IMS. He briefed the students about the admission process to the institute and the career prospectus after completing the Graduate Marine Engineering (GME) Course from IMS.

The presentation was followed by a visit to various laboratories and workshops of IMS. The students were guided to the campus tour by the cadets of the Institute and alumnus of DBCE currently pursuing the GME course. The students got an opportunity to visit Engine room simulator, Welding shop, Marine workshop, Automation control lab, High voltage lab and Electrical Lab.

Later a Q&A session was arranged for the students. The students' queries related to the course and prospects in marine engineering domain were answered by Mr Shivram Kamat, Dy. Director IMS. The visit was coordinated by Mr. Sachin Turi, Asst. Professor, DBCE and Mr Heston Dias, Lecturer IMS.



ISHRAE STUDENT CHAPTER FIELD VISIT TO JOECONS MARINE

ISHRAE DBCE Mechanical Students Chapter of Don Bosco College of Engineering, Fatorda organized a field trip to Joecons Marine Exports Pvt.Ltd, Cuncolim on 25th November 2023 for the ISHRAE student members and Refrigeration and Air-conditioning elective course students. Joecons Marine is a leading global exporter of premium quality seafood. The Field visit was attended by 18 ISHRAE student members, ISHRAE Faculty coordinator Asst. Prof Tanay Rege, Asst.Prof. Sharad Shanbhag and Mr Arun Sail.

The students were warmly welcomed by Mr Brij Mohan, General Manager, Joecons Marine Exports. The students were initially given an overview of the safety procedures of the

company as well as provided with Personal Protective Equipment (PPE) consisting of head gears, masks and shoe covers.

JOECONS Marine consists of 2 industry plant units. In the first plant unit, students were introduced to various refrigeration systems including blast freezer, plate freezer as well as flake ice unit. The students were also made aware of the different condenser systems available in the company and their eventual working process. The students also encountered the various intermediate fish processing processes taking place in the company, right from receiving of the raw material to packaging & storage of the final product.

In the second plant unit, the students were briefed about the processes involved in making 'cube ice' as well as introduced to the various machineries involved in the process.

The students were truly grateful for this opportunity and were amazed by the 'chilling experience' as well as the hospitality of the workers they encountered during the field visit. They were also grateful to ISHRAE Students Chapter for organizing this field visit.



SE MECH FIELD VISIT

On 7th October 2023, 36 students of Second Year Mechanical Engineering visited Astra Metals Systems Ltd. and AutoServ, a complete car service providers based in Verna.

Astra Metals Systems Pvt. Ltd is an end to end solutions provider for Precision Sheet Metal works including fabrication and assembly. The students were exposed to the different sheet metal operations carried out in the industry by Mr. Peter Silveria (Production Manager). Students got an opportunity to see the various operations such as Punching, Bending, Laser cutting, Fabrication and Powder metallurgy process.

At AutoServ, students were taken to the Mechanical service section where the service center provides routine car servicing and repairs and briefed about the different services. Students then moved to the detailing service section wherein they were briefed about the various services like Interior & exterior cleaning, car protective coatings, headlight restoration,

underbody coating etc. The students were then taken to the refinishing services section to brief about the different refinishing services. The students were guided by Mr. Prabhav Shikerkar (Manager-operations) and Mr. Pauras Patil, Manager.



The field visit of organised and coordinated by Asst. Prof. Chetan Gaonkar and the students were accompanied by Asst. Prof. Chetan Gaonkar and Asst. Prof. Sharad Shanbhag. Overall it was a very enlightening and learning experience for the students of SE Mechanical.

TRAINING & PLACEMENT

Inculcating strong work ethics and corporate leadership in their students, has always been at the forefront of Don Bosco College of Engineering. The Institute has strived to associate itself with renowned industry leaders and pioneers to provide better work opportunities across a multitude of sectors. This year too has seen a notable response for placements in which reputed companies conducted placement drives in the College Campus.

Companies Visited : 47

Job Offers : 61

Marine Engineering & Further Studies : 10

Max Salary : 6.5 LPA

Top Recruiters :



FACULTY INITIATIVES

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.	12 week NPTEL course on heat transfer	July-Oct 2023	12 week	IIT Madras	Prof. Sharad Shanbag
2.	One Day Workshop on "Teaching Learning Pedagogy" conducted by TLET cell of DBCE	17 th Nov 2023	Half day	DBCE	All faculties
3.	Workshop on Professional Skill Development conducted by TLET cell of DBCE	17 th Nov 2023	Half day	DBCE	Dr. Prof. Pravin Verekar Dr. Avil Dsa
4.	4 week NPTEL course on selection of nanomaterial's for energy harvesting and storage application	July-Aug 2023	4 week	IIT Roorkee	Prof. Sharad Shanbag
5.	Enhancing competencies of HVAC&R service professionals organised by ISHRAE Goa Chapter	28 th Nov 2023	1 day	Panaji	Mr. Arun Sail Mr. Sujesh Girodkar
6.	1 week ISTE STTP approved FDP on Research Methodology: Tools, Techniques and Strategies organised by Dept of Electronics and Computer Science, DBCE	27 th Nov-1 st Dec 2023	1 week	DBCE	Prof. Gaurish Prof. Swapnil

7.	1 week STTP on Smart Manufacturing organised by PCCE, Goa	5 th Dec-9 th Dec 2023	1 week	PCCE	Prof. Sanjeel Prof. Aniket
8.	5 day online international FDP on Modeling, processing and Characterization of composites	13 th May 2023	5 day	NITK, Surathkal and Central university of Karnataka,	Prof. Gaurish Samant
9.	1 week ISTE on Artificial Intelligence & Data Science	31 st May 2023	1 week	PCCE, Verna	Prof. Sachin Turi

WORKSHOPS/SEMINARS/EXPERT TALKS DELEVERED

Sr. No	Topic	Date	Duration	Organization	Name of the Staff Participated
1.	Career in Mechanical Engineering.	30 th Aug 2023	1 hr	Vidya Vikas School.	Prof. Ajit Salunke
2.	Smart Agriculture at Kshitij 2023	18 th Aug 2023	1hr	Kshitij, DBCE	Prof. Ajit Salunke
3.	'Industry 4.0 & Role of Mechanical Engineers'	1 st Sept 2023	2 hr	DBCE	Prof. Ajit Salunke
4.	Prof. Ajit Salunke delivered a session on 'Career in Mechanical Engineering'.	9 th Sept 2023	1 hr	Multipurpose HSS	Prof. Ajit Salunke
5.	Demonstration of System Response and Control Using Modern Tools	10 th Oct 2023	1 hr	DBCE NDLI CLub	Prof. Tanay Rege

FACULTY ACHIEVEMENTS

Dr. Avil Allwyn D'Sa, Assistant Professor at Department of Mechanical Engineering, Successfully completed his PhD viva-voce exam on his research titled 'Some studies on Surface Durability in Altered Tooth – Sum Gearing'. He completed his Ph.D from Visvesvaraya Technological University under guidance of Dr. Joseph Gonsalvis.

