



# Connections

Quarterly Newsletter for Institute's Friends, Patrons, Mentors and Students

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## NEWS IN GENERAL

### Matribhasha Diwas

“Music is a world within itself, with a language we all understand.”



“Matribhasha Diwas” (Mother Language day) was celebrated on 21<sup>st</sup> February 2022 to promote and preserve Mother Languages across the country and to highlight the Linguist diversity of the country. In view of this, the Cultural Department held a singing event for all the Teaching and Non- teaching staff. Present at the function were Director - Rev. Fr. Kinley D’Cruz, Principal - Dr. Neena S.P. Panandikar, Registrar - Dr. Kala Nayak and staff members.

The compere Ms. Steefni Cruz gave a small introduction and then the event began with Ms. Ulpa Waingankar singing a medley of songs, paying tribute to late Lata Mangeshkar with many of her compositions. Dr. Neena Panandikar sang a beautiful konkani song. Several other staff members sang songs in their mother tongue namely Kannada, Marathi, Konkani, Hindi and English with the audience clapping and tapping to the beat of the music. Each one was outstanding and kept the audience enthralled. Mrs. Maya Lin Noronha proposed the vote of thanks. It was truly a very enjoyable evening, and each of the participants were appreciated with a bar of chocolate.

### Women's Day- March

DHRISHNI – the women's cell was installed on March 8, 2022 at the hands of Chief Guest – Pride of Goa, Hema Sardesai. The function was compared by Ms.

Christina Barretto, who welcomed the gathering with a brief introduction to DHRISHNI and went on to add that the theme for International Woman's day 2022 is “Break The Bias”.

Ms. Aishwarya Mahale, a student at DBCE entertained the audience with a dance performance that also saw the audience tapping their feet to the beat of the music. This was followed by Ms. Janhavi Naik – Secretary of DHRISHNI , presenting to the audience the vision, mission and objectives of DHRISHNI.

The ceremonial lamp was lit by the Chief Guest- Hema Sardesai, Director- Rev. Fr. Kinley D’cruz, Principal- Dr. Neena Panandikar, Registrar- Dr. Kala Nayak, Secretary of DHRISHNI- Ms. Janhavi Naik, Treasurer of DHRISHNI- Ms. Vaishali Parakhi and students- Ms. Clarita De Souza, Ms. Sachi Bokade and Ms. Pranita Bhide.

Dr. Neena Panandikar welcomed the Chief Guest and she mentioned, “ the women's cell is a unique platform to enhance skills , self - confidence of women here at DBCE and an opportunity to contribute towards society”. She further went on to quote ,” we are strongest when we cheer each other on.” She appreciated Ms. Gladys Da Silva for all the years of dedication and hard work as a teacher. She applauded the creativeness in the logo for DHRISHNI that was conceptualised by Ms. Grebian Alemao. She ended by wishing everyone a happy women's day.

At this juncture, the dignitaries unveiled the DHRISHNI logo. A video displaying pictures of all women at DBCE over the years took everyone down fond memory lane.

Rev. Fr. Kinley D’cruz spoke how St. John Bosco had great women who played a great role in his life. He





narrated that it was his mother who said he might be a priest one day. He mentioned about the Daughters of Mary help of Christians as part of a Salesian endeavour. He said, “a women's cell in a Salesian institute says a lot about how we Salesians think and go about with our tasks.’ He went on to add that no doubt that behind every man is a woman, it is time for the man to fade away and the woman to take centre stage. He further added,” women move beyond doing house hold chores, they have come a long way, they are self reliant and constantly pushing the boundaries.” He then recited a beautiful poem about a woman who knows her worth and brings joy to others just by being herself.

Rev. Fr. Paul D'souza in his address said, “the world would not function without women who have made great strides socially, politically, culturally and emotionally.” He also mentioned that International Women's Day 2022 is a beautiful moment for everyone to celebrate the strides made by women in empowerment globally.

Ms. Gladys Dasliva was felicitated for her remarkable work as a teacher which she continues to do even after more than 34 years of teaching. She advised the teachers in the gathering, “Take one day at a time, believe in yourself and judge the students by looking at their face and not their words.”

The Chief guest – Hema Sardesai, in her speech said that if we do work for the world then we are following God. She said “The epitome of a woman, the strength of the world, is a woman- the mother who does and has carried the world ahead with the support of the father.” She went on to say that the two things that adhered in the world were control and choice- that which a mother teaches. She said,” We need to do more and be more for us and for



everyone around us. Be rock solid and know that you are a woman and a woman takes the world far more ahead.”

She enthralled the audience with her beautiful voice and it only made the staff and students at DBCE proud to have 'The Pride of Goa' celebrate women's day with each and every one of them.

The function concluded with Ms. Janhavi Naik proposing the vote of thanks.

## Career in 21st Century

A seminar on “Career in 21<sup>st</sup> Century” for the students of Third Year was held on March 22, 2022. The event was hosted by Amey K. Shet Tilve from Department of Computer Engineering.



Mr. Ninad Panse, CEO skilling and education division AP Globale Sakal Media group was the speaker for the session. Principal- Dr. Neena Panandikar welcomed the gathering and also introduced the guest for the session. Mr. Panse spoke about creativity. He said “new creation may not always be achieved by business minds, creator must not be self-obsessed with own ideas and Time management is also very important”. He also stated that “Job roles in next 7 - 8 years will change with automation so you have to be updated with AI / ML and Data science”.





Also present for the seminar were, Director - Rev. Fr. Kinley D'cruz, Associate editor of Sakal media group and YIN head, Goa - Mr. Ankit Kane, and Young Inspirators Network Executive, Goa -Miss Shavina Shirodkar.

The vote of thanks was proposed by Avila Naik -TPO. The event was coordinated by faculty members Amey K. Shet Tilve, Dr Shreyas Simu and Ms. Avila Naik.

## Smart India Hackathon 2022 Internal Institute Level Hackathon

Smart India Hackathon 2022 is a nationwide initiative to provide students a platform to solve some of the pressing problems we face in our daily lives, and thus inculcate a culture of product innovation and a mindset of problem solving.

In SIH 2022, the students would have the opportunity to work on challenges faced within various Ministries, Departments, Industries, PSUs and NGOs to create world class solutions for some of the top organizations including industries in the world, thus helping the Private sector hire the best minds from across the nation.

Our college organised an Internal Institute Level Hackathon to shortlist the teams to participate in the national level competition. The hackathon was open to students of all years and branches.

The Internal Institute Level Hackathon was held on March 23, 2022. A total of 19 teams participated in the event. The teams comprised of students from Mechanical, Computers, Electronics & Telecommunication and Civil Engineering. The jury



members for the event were Mr. Mangirish Salelkar, Founder President-Goa Technology Association and CEO-UMANG, Mr. Thejus Joseph, COO- FiIRE, Mr. Sachin Kale, Founder Stanza Infotech and SK Group and Mr. Sachin Turi, Assistant Professor from Dept. of Mechanical Engineering, DBCE. The jury panel was very much impressed with the innovative ideas presented by the students.

The judges provided valuable inputs and feedback to the student participants. The event was also graced by the presence of Dr. Neena S.P. Panandikar, Principal, DBCE, Dr. Suraj Marathe, President, IIC, Dr Shreyas Simu, Assistant TPO, DBCE, Dr Amrita Naik, Assistant Professor from Dept. of Computer Engineering, DBCE Goa and Mr. Sudip Faldeesai, Project officer Goa State Innovation Council who motivated all the participating teams and gave valuable suggestions.

The following 10 teams were shortlisted : Solutionism at its finest, Green Ribbon Army, Team Apogee, Team Aether, The MVP's, Team Eagle, Void Mains, Brain Drain, Dynamites and Grey Space. The following 5 teams were placed in waitlist category: Mind Plug, Syntax Terminators, Abyuday, Unknown Variables and Team Explicit.

The event was organized by Mr. Swapnil Ramani , Assistant Professor from Dept. of Mechanical Engineering, DBCE Goa & SPOC-SIH 2022 and Mr. Selvyn Fernandes, Assistant Professor from Dept. of ETC Engineering & Co-Ordinator-Internal Hackathon SIH 2022.



## The Installation Ceremony of the Newly Elected Student Council 2021-22

Our college always strives to inculcate a sense of responsibility and commitment among the students to help them to hold their heads high and be ready to shoulder responsibility as leaders. An investiture ceremony was organized on April 9, 2022 for the newly elected council members of the academic year 2021-2022.



The newly elected Student Council members were administered the oath by the Student Council Election Officer Mr. Harison Cota, in which they pledged to work earnestly and uphold the honor and glory of the institution while receiving their prestigious badges from the Director- Rev. Fr. Kinley D'Cruz, Principal-Dr. Neena Panandikar, the Heads of Department of Science and Humanities, Electronic And Telecommunication and Mechanical Engineering.

It was a proud moment for the elected students being invested with great responsibility while embarking on a new journey as leaders. The Principal congratulated the student council and wished them the very best as leaders. She also thanked the Student Council Election Officer Mr. Harison Cota for a well-organized ceremony.



The Cultural Secretary- Mr. Gul Ahmed Shaik, the Magazine Secretary- Mr. Keenan Cardozo and the Sports Secretary- Mr. Veron Dias spoke a few words followed by a speech and Vote of Thanks by the General Secretary - Mr. Reev D'Souza. The ceremony concluded with refreshments and a formal photograph. The ceremony was compered by Mrs. Maya Lin Noronha, a member of the cultural committee.

## DEPARTMENT OF CIVIL ENGINEERING

### Total station Workshop for faculty

The Department of civil engineering, DBCE organized a two days workshop on Trimble M3 Total station for faculty members on March 25-26, 2022. Along with faculty members some students from third year civil also attended the workshop.



The resource person for the workshop was Mr. Anant Pawaskar from Allterra Solutions LLP, Vashi, Navi Mumbai. Mr. Anant covered basic training of centering and levelling of the total station on the very first day. He also explained Station setup resection /stake out operation station elevation, topo survey, counter survey, cogo function key in parameters, downloading and uploading job data exporting in different formats like CSV and DXF to pen drive. Dr. Shwetha Prasanna coordinated the workshop.



## Workshop on Geostudio

A workshop on Geostudio was conducted by Department of Civil Engineering for third year Civil Engineering students on April 9, 2022. Geostudio is a modeling software used by Geotechnical Engineers & Earth scientists. It is an integrated software suited for modeling slope stability, ground deformation, heat & mass transfer in soil & rock. The session was conducted by Assistant Professor, Ms. Akshata Kudchadkar where she explained the various functions within GeoStudio like SLOPE/W, SEEP/W, QUAKE/W, SIGMA/W, TEMP/W, CITRAN/W and AIR/W. The students were taught to carry out slope stability analysis using the SLOPE/W function available on student edition version of GeoStudio. The students performed analysis on different soil slopes having different heights, different soil properties, presence of water table etc. Altogether 29 students participated in the workshop. This workshop was coordinated by Assistant Professor Akshata Kudchadkar and Assistant Professor Starina Dias.

Mr. Noronha handed over the CNC Vertical Milling Machine to Fr. Kinley and said that “Turbocam International substantiated on the importance of the Center and that it will create an ecosystem of innovation and add to the hub for research and academia partnerships”. “In the world where lines between all fields of engineering are blurring, it will close the skill gap”, he added. He also presented a memento to DBCE for its dedicated service and ongoing commitment to local student community. Mr Savio applauded the college and said that “DBCE has historically contributed towards the technological development of the region and its wonderful alumni base have been excelling in various spheres”. Appreciating the management and faculty for various initiatives, he encouraged the college to strengthen it's connect with the industry network and seek support from them through various programmes. Fr. Kinley expressing gratitude towards the Almighty said that “Every member of the Don Bosco, Fatorda family has contributed towards the growth of the institute and it has scaled great heights in the last decade since its inception”. Dr. Panandikar appreciating the Turbocam management and mechanical faculty and staff for their efforts in realising the CNC centre said that “The centre will help to make students industry ready”.

This state-of-the-art center covers a total area of 1200 square feet and intends to align engineering education with the latest industry trends and practices, skill training, Industrial Consultancy in tool design and manufacturing of customised engineering jobs. In addition to the VMC, it has a CNC lathe, Mastercam software and the department plans to add more facilities like CMM, EDM etc. in the near future.



## DEPARTMENT OF MECHANICAL ENGINEERING

### Chairman & President of Turbocam International, USA visits Don Bosco College of Engineering

Mr. Marian Noronha, Chairman & President, Turbocam International, USA visited our College along with Mr. Savio Carvalho, Director, Turbocam India Pvt. Ltd., on 18<sup>th</sup> January 2022. Fr Kinley D'Cruz, Director, Dr. Neena Panandikar, Principal, Prof Ajit Salunke, HOD Mechanical, Prof Gaurish M. Samant, Coordinator, CNC Centre, Mr. D. S. Prashant, CEO, FiiRE, Mr. Thejus Joseph, COO, FiiRE, officials from Turbocam India Pvt. Ltd. and staff members of Mechanical Department of DBCE were also present on the occasion.

Turbocam International has supported the Mechanical Department to set up the CNC centre along with FiiRE. The centre will be inaugurated shortly.



## DBCE Students At National Students Design Competition (NSDC) By ISHRAE

Eleven students from our College participated in the 'National Student Design Competition 2021- 22' (NSDC) organized by 'Indian Society of Heating, Refrigerating and Air Conditioning Engineers' (ISHRAE). The competition was about designing an air conditioning and ventilation system for a multi-specialty Hospital building that pertains to comfort cooling, ventilation and indoor air quality. The problem statement constituted a plan of a multispecialty hospital with a built up area of over 4400 sq. meters across three floors with a huge range of necessary medical rooms, Operation Theaters, Cath labs, Isolation Rooms, OPDs and a full functioning Kitchen to name a few.

A span of four months was allotted to the participants to complete the following tasks – heat load calculations, ventilation, selection of types of Central Air Conditioning systems that constitute of Outdoor Units, Indoor Units, Cooling Towers, duct design, chiller capacity determination and total material cost.

All eleven students were grouped into three teams,



wherein, two teams consisted of 4 members each and one team consisted of 3. Two of the teams collectively consisted of students from BE Mechanical( Mr. Akash Pawar, Mr. Fletcher D'Costa, Mr Milbert Alfonso, Mr. Kurt Consalves, Mr Rutik Naik and Mr. Sankath Nail) and BE Civil (Mr. Declan Luis) and the remaining one, had all its members from TE Mechanical (Ma. Ayisha Shaik, Mr. Lemuel D'Cunha, Mr. Ikram Saudagar and Mr. Ayush Tari).

Though all teams faced multiple tackles, challenges,

hardships, problems; all 3 teams were successful in completing and submitting the project before the deadline. “Working on this project filled the gap of creative thinking, communication, learning and applying it to brush up our skills. Indeed, the project was not an easy task yet, the experience of coordinating with the teammates, learning from each-others' mistakes, learning new concepts and applying the same to solve the problem was beneficial in building up core knowledge” says Miss. Ayisha Shaikh, member of one of the teams.

Prof. Tanay Rege, from the Department of Mechanical Engineering, received honorable mention and due credit for his extraordinary, knowledge-filled and motivational guidance provided to all 3 teams.

“Does hard work pay?” is a genuine rhetorical question; because we all know that definitely hard work pays off. Irrespective of the result; which is awaited; the skills picked up are irreplaceable. “It was a wonderful experience working with my teammates on this project. I was introduced to a new subject and learnt about duct designing and materials to be used in AC ducting. Also, experienced how it is to be a part of a group project and understood the importance of teamwork” shares Mr. Ayush Tari, also a member of one of the teams.

The competition received over 55 entries of student teams from nationwide premier institutes and universities.

### 2-Day National Level Online Workshop on “Vibration and Noise Control : Recent Trends and Innovations”

A 2-Day National Level Online Workshop on “Vibration and Noise Control : Recent Trends and Innovations” was organized by Department of Mechanical Engineering in association with Goa State Innovation Council on 25<sup>th</sup> and 26<sup>th</sup> of February 2022. The inaugural ceremony of the workshop was graced by Chief Guest - Mr. Jose Noronha, Chairman of Goa Public Service Commission and Chairman of Goa State Innovation Council, Fr. Kinley D'Cruz - Director - DBCE, Dr. Neena Panandikar - Principal, Mr. Ajit Salunke,





Head of Department of Mechanical Engineering and Dr. Pravin Verekar - Convener. Also present for the event were Dr. Kala Nayak - Registrar and Mr. Sudip Faldesai, - Project Officer, GSInC.

Dr. Verekar formally welcomed all the dignitaries and participants of the workshop. He threw light on the topics that would be covered during the workshop. Mr. Jose Noronha spoke about opportunities for innovation in the State. He emphasized the role of GSInC in supporting the startup community. He also stressed on importance of reading habits for students. He said “always strive for perfection” and advised the participants to take the benefit of the workshop.

Mr. Ajit Salunke proposed the vote of thanks. The event was compered by Mr. Raymond Joseph and the workshop was coordinated by Mr. Chetan Gaonkar and Mr. Ramnath Prabhu Bam.

There were 5 eminent resource persons from premier Institutes and Industries of India as below:

1. Dr. M. L. Munjal, Professor Emeritus, FRITA, IISc Bengaluru
2. Dr. Krishna Mohan Kumar, Assistant Professor, IIT Indore
3. Mr. Bhushan Singh, Assistant Professor, Guru Ghasidas Vishwavidyalaya
4. Mr. Peeyush Bhone, Area Manager, Technical Services (NVH), Josts Engineering
5. Mr. Suryakant Gawde, Vibration Analyst Level III, Certified Maintenance Partner at SKF Bearings

Apart from this, 3 sessions were conducted by in-house faculty members, Dr. Pravin Verekar, Mr. Chetan Gaonkar and Mr. Ramnath Prabhu Bam. Also a session on roles and responsibilities of GSInC was

conducted by Mr. Sudip Faldesai.

Around 100 participants from all over India with different backgrounds such as Industry Professionals, Faculty Members, Research scholars and students had registered for the event.

## 'Arduino & Robotics' Workshop



The Goa State Innovation Council organized a two day workshop on Arduino & Robotics on March 8 and 9, 2022 at its Prototyping Lab. The workshop was held for the students of first year of Department of Mechanical Engineering.

Mr. Ketan Naik, Project Head at Asier Solutions delivered the sessions for the two days along with GSInC coordinator Mr. Siddhant Panjekar. The first day included sessions on Introduction to basic electronics where the students were given demonstrations to build virtual circuits in Tinkercad for control of motors etc. and an introduction to Arduino and programming. On day two of the workshop, sessions on 3D designing and printing were taken covering modelling in Blender and data exchange in STL format for 3D printing.

The students were also given a practical hands on exposure in printing certain robot parts on a 3D printer. An overview on robot assembly was also provided to the students and they were also involved







in a group activity building a robot. Mr Sudip Faldesai, Project Officer GSInC; Prof Ajit Salunke, Head of Department- Mechanical appreciated the involvement of the students in learning things beyond the academic curriculum while, Dr. Neena Panandikar, Principal added, “Additional learnings for students of Mechanical Engineering in emerging areas of Artificial Intelligence, Machine Learning, Industry 4.0 etc. is an added advantage for employment prospects in the industry”.

The workshop was coordinated by Prof Harshad Pingulkar, Dept. of Mechanical Engineering and was well received by the students sharing their positive feedback on both the speakers for their content and delivery.

## Pre fest activity for Science Film Festival of India (SCIFFI 2022)

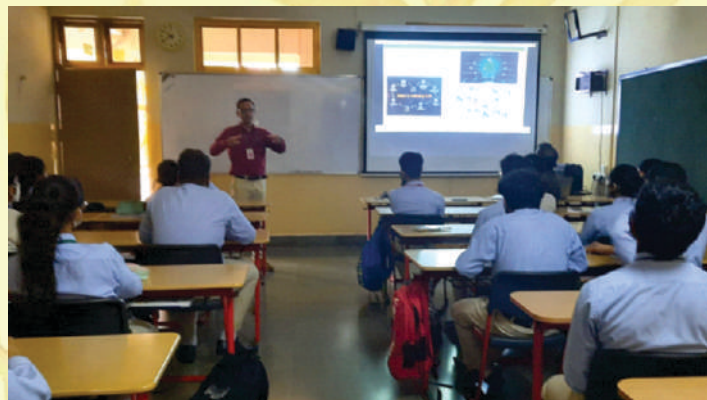
Prof. Ajit Salunke delivered a talk on “Acharya Prafulla Chandra Ray” at Balram A Day Care School, Canacona on March 21, 2022. The program was organized as a pre fest activity for Science Film Festival of India (SCIFFI 2022) which will be held at ESG Complex, Panjim from April 26-28, 2022. In view of Azaadi ka Amrut Mahotsav celebrations, the talk was planned to highlight the contribution of Indian Scientists. 105 students attended the talk.

Prof. Salunke gave a brief overview of Vijnana Bharati, Vidnyan Parishad, Goa and SCIFFI 2022. He



gave a presentation of the life and works of Acharya Prafulla Chandra Ray and showed a video depicting the same. The program was facilitated by Dr. I. K. Pai Former Professor & HOD, Zoology & Director, UGC-HRDC, Goa University and he was instrumental in developing the resource material. Ms. Shradha Naik, coordinated the program.

## Talk on “Career in Mechanical Engineering”- Prospects & Future Trends at Vidya Vikas Academy, Margao



Prof. Ajit Salunke delivered a talk on “Career in Mechanical Engineering”- Prospects & Future Trends” at Vidya Vikas Academy, Margao on March 25, 2022 for 11<sup>th</sup> standard students. He gave an overview of various specialization areas of Mechanical Engineering, job opportunities in the field, avenues for higher studies, Paradigm shift towards Mechatronics, Robotics and Industry 4.0. He also emphasized on role of mechanical engineers in the Defence sector, IT industry and in the management field. Prof. Salunke said that “A Mechanical Engineer has wide range of areas to choose and he can make a career in automation /Robotics/IT/management etc. apart from the core discipline'.

He gave examples of eminent personalities from automobiles, space technology, politics, sports etc. who had a background in mechanical engineering and related fields.

The talk was coordination by Prof. Chetan Gaonkar and Ms. Pooja Desai.



## Field Visit To IMS Campus Vasco



The Students of Final Year (BE) from the Department of Mechanical Engineering visited the campus of Institute of Maritime studies (IMS), Vasco on April 1, 2022.

The session commenced with a welcome note from Mr. Ajay A. Tambwekar, Dy. Director IMS. Mr. Heston Dias, introduced the marine engineering course to the students from training to career prospects. He elaborated the teaching learning process at IMS. Later the students were briefed about the admission process to the institute and the career after completing the Pre Sea Course from IMS.

The presentation was followed by a visit to various laboratories and workshops of IMS. The students were guided on the campus tour which included visits to Engine room simulator, Virtual Reality station, Welding shop, marine workshop and Automation lab.

A Q & A session was arranged later on with the students. The students asked various queries related to the course. The visit was coordinated by Mr. Sachin Turi and Mr. Sanjeel Naik

## Field visit to NIT Goa permanent campus site at Cuncolim

Second Year students of Department of Mechanical Engineering visited the NIT Goa permanent campus situated at Cuncolim. The visit was conducted on April 4, 2022

The NIT campus is developed at Cuncolim by Central Public Works Department (CPWD). The EPC contract is executed by B.G. Shirke Construction Tech. Pvt. Ltd. Mr. Pramod Yadav, Site Engineer and Mr. Sahil Desai coordinated the visit. Mr. Pramod Yadav briefed the students and faculty about the details of the project. Mr. Yadav emulated the different salient features of the project and mentioned that the project is developed PHASE wise. In PHASE I, the total site area is around 450000 sq.m and total built up area is approximately 70000 sq.m. The project has dedicated buildings for Administration, Library, Seminar halls, Hostels and staff quarters among others.



The students were taken to the construction site and the factory wherein the innovative pre-cast technology was explained. With the help of this technology, construction takes place faster and with lesser man power. Mr. Yadav also explained the project management aspects related to the contract. The students had a fruitful learning experience through the site visit and interacted with the officials. DBCE signed a MoU with NIT Goa in 2019. The visit was arranged and coordinated by faculty of Department of Mechanical Engineering- Prof Swapnil Ramani and Prof. Raymond Joseph and was accompanied by Dr. Suraj Marathe.



## DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

### IEEE Educational Activity: Shaping the minds of tomorrow



IEEE Student Branch organized a Workshop for school students on “Electrical & Electronics made easy” with one simple objective to, create a spark and interest in the young minds' of this generation on 11<sup>th</sup> – 12<sup>th</sup> March, 2022.

Prof. Yeshudas Muttu addressed the participants and allotted an IEEE Member for each group of school students. IEEE members, Mr. Kaiser Souza & Mr. Clarence Dias introduced the basic concepts in electrical & electronics to the audience. They made the participants understand the components like resistor, battery, identification of resistance via colour codes, breadboard, Light emitting diodes, transistors, sensors, etc. Ms. Anjima Rajesh taught the students to implement the very first circuit on the breadboard followed by an explanation about series and parallel circuits by Ms. Sidhilaxmi Shenoy in the most interesting way.

While implementing circuits, other IEEE Members, Mr. Arya Shanbhag, Mr. Benson Fernandes, Ms.

Athena Rodrigues, Mr. Daron Pereira and Ms. Diana Estibeiro were completely involved in making students understand the circuit connections in the most effective way. Also, they explained practically the testing of sensors/ conversion of one form of energy to other. The students had the most amazing time by building the circuits which was reflected through their positive feedback at the end of the workshop.

The Workshop was very insightful for the students and created a deep interest in the field of Electronics and their use in daily life. It was also a confidence and knowledge booster for the IEEE DBCE STEM Team members as they also gained a lot of hands-on experience working with school students.

The workshop was conducted for four school students, namely Government High School - Balli, Sancordem Education Society's School – Dharbandora, Smt. Hirabai Talaulicar High School – Dharbandora and St. Joseph High School – Usgao; sponsored by IEEE Bombay Section. A deep sense of appreciation for the Headmaster & Headmistress of these schools for showing keep interest in making their students learn about this field. This program was conducted under the leadership of Prof. Yeshudas Muttu (IEEE Student Branch Counselor).



### Two-day hands-on Workshop on “e- Yantra Robotics”

The e-Yantra Robotics Faculty Team of Electronics & Telecommunication Department of DBCE organized a Two Day Workshop on Firebird V Robot for the



students of SE ETC, on 25<sup>th</sup> & 26<sup>th</sup> of March 2022. The purpose of the Workshop was to spread education in Embedded systems and Robotics.

The students were divided into 7 teams with 6 members in each team, thus training 42 students to work on the Firebird V Robot. The resource persons for the workshop were Prof. Flavia Leitao, Prof. Yeshudas Muttu, Prof. Deron Rodrigues and Prof. Mathilda Colaco.

The first session was held on March 25, 2022 and was delivered by Prof. Yeshudas Muttu on Introduction to Robotics that included major components such as Sensors, Actuators, Control system, Intelligence, Power supply, Communication, Indicating Devices of a Robot and Introduction to Firebird V ATmega 2560. The students were also introduced to the various Input-Output Ports and Registers in ATmega 2560 and how they can be accessed. Subsequently, the students were given hands-on exposure in Embedded C programming for interfacing the Buzzer and Bar-graph LED using the Atmel-6 Studio.

The second session on the same day was conducted by Prof. Flavia Leitao on interfacing the LCD with the Firebird V Robot. The Students were briefed on the Boot Switch and LCD operation and were then asked



to interface the LCD and the Boot Switch for a given application. This was followed by interfacing of the Motors. The students were briefed on the Motor Driver IC L293D and the different Motions and were then given a small task of how to interface the Motors and device an application to make the Robot move in a defined direction.

The next day began with Prof. Deron Rodrigues introducing to the participants the concepts of counters and timers in ATmega 2560 for calculating time delays for various applications. Subsequently Pulse Width Modulation (PWM) was introduced followed by hands-on program to control the Velocity of the Motors. In the second session, the students were also taught analog sensor interfacing using Analog to Digital conversion (ADC). The session included overview on the sensors like Sharp IR sensors, Proximity Sensor, etc., interfaced to the different channels of ATmega2560 followed by ADC initialization and programming.

The afternoon session which was delivered by Prof. Mathilda Colaco, included briefing about the sensors for object detection and white line sensing. Thereafter the students were guided to program the robot for object detection using the Sharp IR sensor and indicating whether it is near or far. This was followed by introduction to line follower algorithm with different conditions to be considered for the same. With the knowledge of ADC interfacing & line follower logic, the students were finally able to code to make the robot follow a line.

The Students had an amazing learning experience and showed great enthusiasm executing the given challenges. They suggested that such workshops





should be conducted in future that would provide learning beyond curriculum.

## Beyond Syllabus Activity For Fe Etc



The Department of Electronics and Telecommunication Engineering, DBCE decided to allocate 2 hours every week for beyond syllabus activities for the first Year ETC students. To conduct this activity Dr. D.S Vidhya and Prof. Flavia Leitao were identified as the two resource persons from the ETC Department, who would arrange for some activity which would help students to learn something beyond the syllabus.

In view of the above objective some of the activities planned by them were hands-on manual PCB Design workshop, Circuit Simulation using SimulIDE, Animation, Video making and so on.

PCB Design workshop: The session started with Prof. Flavia Leitao briefing the students on the different stages of PCB Design. The stages involved Testing the circuit on breadboard, Drawing circuit layout and transferring mirror image of layout on PCB, Masking, Etching to remove the unwanted copper, Drilling and mounting of components and finally Soldering.

The students were given a hands-on experience in designing the PCB. They first started with testing the circuit on breadboard, to verify if the circuit given to them was working, which was followed by the masking activity, where they had to transfer the mirror image of the layout on the PCB. A very innovative and easy method of doing this was employed using the Iron. The mask was smoothed by the markers to avoid any break in the copper

tracks. The masking was followed by Etching, where Ferric Chloride was used for removing the unwanted copper. The PCB was then nicely cleaned to remove the entire mask.

The etching activity was followed by drilling and Soldering. The students were first given instructions and a demo on how to use the drilling machine and the soldering iron. The students then got a hands-on exposure to drilling and soldering.

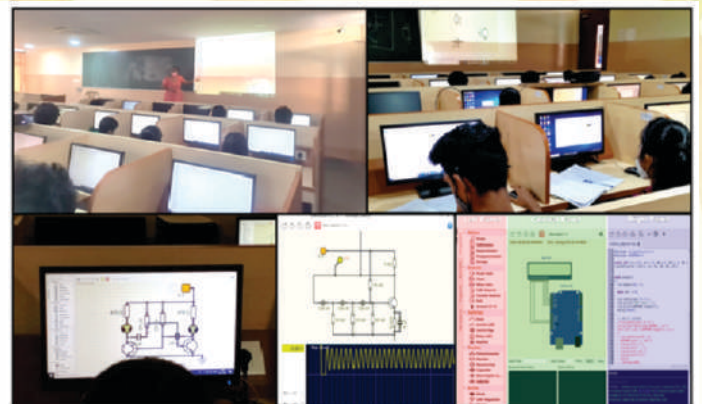
The circuit implemented on the PCB was an “Astable Multivibrator”. The students showed great zeal and enthusiasm in designing the PCB and the satisfaction and joy to see the circuit work was overwhelming.

Circuit Simulation using SimulIDE: Keeping in mind that these were electronic students, the instructors taught them a Simulation software called SimulIDE. SimulIDE is a simple real time electronic circuit simulator, intended for hobbyist or students to learn and experiment with simple electronic circuits and microcontrollers, supporting PIC, AVR, Arduino. Simplicity and ease of use are the key features of this simulator.

One can create, simulate and interact with the circuits within minutes, just drag components from the list, drop into the circuit, connect them and push power button to see how it works.

Students were told to simulate all their Electrical and Electronic lab experiments, so that they could get a better understanding of those concepts.

Animation using Scratch: The next interesting activity that was conducted was to educate students on





making Animations. The software used for this was Scratch which is a simple visual interface that allows young people to create digital stories, games, and animations.

The students can use Scratch to code their own interactive stories, animations, and games. In the process, they learn to think creatively, reason systematically, and work collaboratively, which are the essential skills for everyone in today's society.

Scratch is also available as a mobile app called PictoBlox. It is a block-based coding and an AI education platform. Students had great fun creating their own games, animations, making characters mimic their actions and enact stories by setting up a stage for them.

**Video Making:** The next activity that was planned for students was the video making activity which is something everybody must know today. To make it more fun and challenging students were asked to explore the different video making softwares and select those softwares as per their preference. The topic given for Video making was “The Rich Heritage of Goa”. The students did a brilliant job and came up with great ideas showcasing Goa's culture and heritage through Video Making.

### **Introduction and demonstration of Electrical components:**

A session on “Introduction and Demonstration of Electrical components” was yet another session organised for the students under beyond syllabus activity. Mr. Jayprakash Fadte introduced to the students various electrical components available in the laboratory.

He also explained about Earthing, various types of DC, AC motors and power supplies. The types of domestic and industrial wiring also were mentioned to the students. This was accompanied by demonstration of soldering. The students showed great curiosity to learn.

## **DEPARTMENT OF COMPUTER ENGINEERING**

### **CODEMAX IT Solutions Pvt. Ltd. Field Visit**

The Department of Computer Engineering arranged field trip for the faculty members at CODEMAX IT Solutions Pvt. Ltd, Margao, Goa on March 11, 2022. It was a great interaction with the Founder & CEO, Mr. Mayur Virkar; Director & CTO, Ms. Nestinca Rebello, HR, Ms. Ishrat Shaikh and other employees of the organization.

Following were the Topics of discussion:

- Existing curriculum of Goa University.
- Bridging the gap between Industry and Institute.
- Short term training courses to be offered.
- Internship programs and Placements.
- MoU

### **Innovation and 3D printing technology (Beyond the syllabus)**



The Department of Computer Engineering in collaboration with the C-CODES (Council of Computer Department Engg. Students) and the Goa State Innovation Council, organised a seminar on innovation and 3D printing technology on Saturday, March 26, 2022 for the B.E computer students.

The speaker was Mr. Siddhant Panjekar, the Head of the rapid prototyping lab at DBCE, Fatorda. The seminar began with a presentation, which was followed by a film that described the Goa State Innovation Council's objective and numerous initiatives. He explained the procedure to avail the funding for the projects and other services that are offered by the council. By using real-life examples, he emphasised the importance of patent filing.



The advantages of registering one's idea and business were also discussed. The students were given a tour of the prototype lab, where they saw numerous machines including: 3D printers, laser cutters, drones, power tools etc. A basic description of how these gadgets work was provided. Students learnt about the most up-to-date 3D printing technologies.

The workings of the 3D printing process, the many types of raw materials needed, and other requirements were all described in detail. Various applications of 3D printing were also discussed. The session came to a close with a brief practical demonstration of how to use a 3D printer and the Cura software by providing the design and other commands. Mr. Siddhant said *"3D printing is already shaking our age-old notions of what can and can't be made."* The faculty coordinators were Dr. Gaurang Patkar, Asst. Prof. Merwyn D'Souza and Asst. Prof. Norman Dias. The student coordinator was Mr. Aryan Prabhu Sawkar.

## Mean Stack and Low Code

C-CODES in association with the Department of Computer Engineering organized a technical talk on "MEAN STACK AND LOW CODE". The speaker for the session was Mr. Joshua Salema, alumnus of DBCE who currently works as a system analyst at ZiMetrics Technologies Pvt Ltd. This talk was held for first year computer engineering students on March 30, 2022. The faculty coordinators for the event were Dr. Gaurang Patkar and Prof. Siya Naik.

The Speaker dived deep into MEAN stack and explained what MEAN is, he explained, M stand for Mango db, E for Express, A for Angular and N for Node js. With Angular being frontend, Mango db being the database and Express being the backend framework and Node js the backend runtime environment.

He also spoke about Low-code which is a software development approach that requires little to no coding in order to build applications and processes. He gave examples of OutSystems and Salesforce which are Low-code development tools. At the end

he spoke about the latest technology which is being used in the industry.

The session ended with question and answer round. The vote of thanks was delivered by Dr. Gaurang Patkar, Head of Department of Computer Engineering.

## DBCE Dream Big



The Department of Computer Engineering organized for the second time, an event called 'DBCE Dream Big'- an Industry Student Connect event, on April 13, 2022, that aims at promoting awareness about innovation in industrial and professional expertise amongst students.

The event began with the introduction to DBCE Dream Big by Head of Department of Computer Engineering - Prof. Dr. Gaurang Patkar. A video was played on the ten year journey of the Institute, the achievements, initiatives and awards of the Department of Computer Engineering. The audience was given a glimpse of DBCE Dream Big 2022.

Principal-Dr. Neena Panandikar welcomed the gathering. She highlighted the achievements of faculty and students of the Department of Computer Engineering. She emphasised "Don't just dream big but make it happen". This was followed by the address by Director - Rev. Fr. Kinley D'Cruz. Addressing the gathering, he said: "If you stop dreaming then you stop growing" and quoted by Joyce Meyer "Don't be afraid to step out, have dreams, have visions, hopes and always, always, always believe in miracles".

Student Entrepreneur Mr. Leo Barros was also felicitated on this occasion for his innovative business idea. This was followed by MOU signing with Kilowatt & Creative Capsule to strengthen the Industry-



Academic relationships.

The speakers for all the subsequent sessions were introduced by Mr. Amey Kerkar. The speakers enthralled the audience by their knowledge, experience and expertise.

The first session was conducted by Mr. Nitish Raikar, Partner and CEO, Kilowatt. The session started with the introduction of Kilowatt company by Mr. Nitish Raikar. He briefed the audience about the journey of Kilowatt, their services and customer centric approach. This was followed by a Q&A session moderated by Miss Anchita Maity. He emphasised that the key to a successful team is to resolve creative differences, as conflicts are a part of life. He further stated, "with integrity and inclusivity comes growth". He stated that present graduates can benefit a lot from learning from the internet. The session concluded with a Q&A session. He said "Letting go is the key to a good life".

The next session was by Mr. Ivo Costa, System Architect of Creative Capsule. This was purely a Q&A session moderated by Mr. Vadiraj Inamdar. Mr. Ivo Costa answered a variety of questions ranging from his experience working in online mode during the lockdown and the challenges faced during resuming work in offline mode. He focused on the fact that work must not be considered a chore but a fun activity. He stressed that one must never believe that they have mastered anything. Change is the only constant.

The next session was by Mr. Mayur Virkar, Founder & CEO, CODEMAX. The session was again a purely Q&A session moderated by Mr. Vadiraj Inamdar. Mr. Mayur Virkar shared his views on a variety of topics from technical skills to life skills. He shared that technical skills are not as important as having the right attitude. He emphasised that one must trust in team decisions, one must consider oneself as not above or below somebody but an equal. He further spoke on the importance of knowing one's basics correctly.

The fourth session was by Mr. Sajjad Ahmed on "How to handle nervousness in interviews?". Mr. Sajjad Ahmed started the session by giving a presentation

on Nervousness, its causes and tips to manage it. This was followed by a Q&A session moderated by Mr. Aryan Kotru. Mr. Ahmed enlightened the audience about the work culture at Capgemini. He emphasised that a leader walks by his set of values. He needs to inspire and influence.

The final session was by Mr. Sachin Kale, Director-SK Group. This session was yet again a purely Q&A session moderated by Aryan Kotru. Mr. Sachin Kale answered a variety of questions on his professional journey. He emphasised that one should focus on creating assets not liabilities.

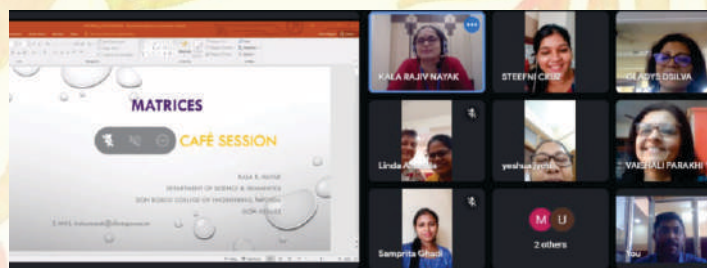
The event was coordinated by Prof. Janhavi Naik. Prof. Janhavi Naik concluded the event by delivering the vote of thanks. Ms. Nicole was the compere for the occasion.

## SCIENCE AND HUMANITIES

### Departmental Café Session

The Department of Science and Humanities had its second Departmental Café Session for the Academic Year 2021-22 on the 12 February 2022. The resource person for the evening was Dr. Kala R. Nayak, Registrar and Professor (Mathematics). She had an interactive session on the topic 'Matrices'.

Dr. Kala began her session by introducing the term matrix and what it means in different subjects. She said matrices are used in Geology, Physics and even medical science. She then went on to speak about the types of matrices, i.e, a row matrix, a column matrix and a singleton matrix. She also explained how a graph can be described using a matrix. The elements of the matrix indicate whether pairs of vertices are adjacent or not in the graph. Matrices can be used to





know whether a graph is directed or undirected.

Dr. Kala then introduced the transpose of a matrix - a matrix which is formed by turning all the rows of a given matrix into columns and vice versa. She then gave examples of different matrices like the stochastic matrix and doubly stochastic matrix. To make this more interactive and interesting she asked the participants to give examples of stochastic matrices.

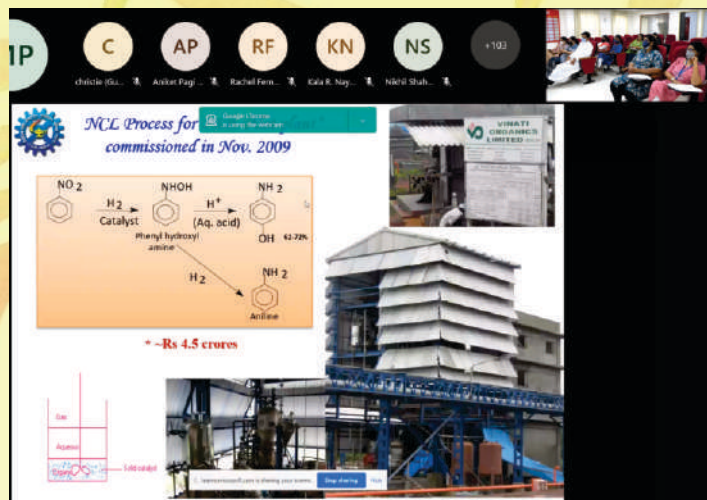
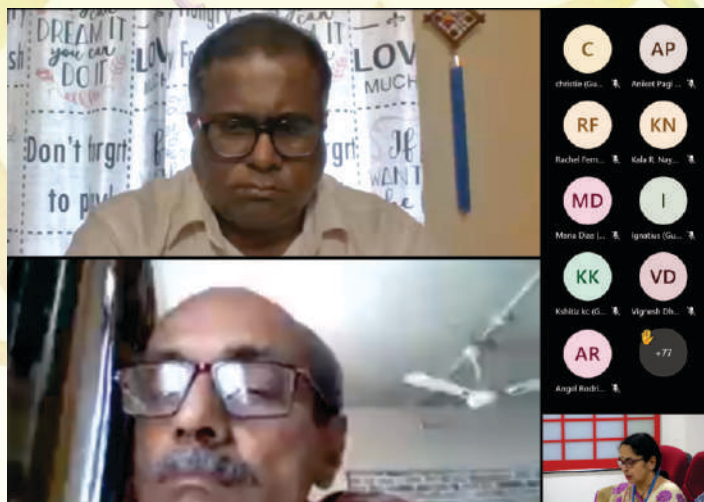
She ended the session by posing three questions to the participants. These got the participants excited and more active.

## Second Sci-Minds Web Series

The Department of Science and Humanities held its second Sci-Minds web series on Innovations in Technology for Environment Sustainability on 26 February 2022 through Microsoft teams. The event coordinators Mrs. Gladys Da Silva and Mr. Harison Cota collaborated with Dr. C. V. Rode and Dr. Rajesh Kumar Shankar Hyam to bring together an excellent session that ignited the minds of researchers and students from among the participants.

Those present in the audience included Rev. Fr. Kinley D'Cruz - Director, (DBCE), Dr. Neena Panadikar – Principal, (DBCE) and Dr. Kala Nayak, Registrar and Head, Department of Science & Humanities.

Ms. Steefni Cruz welcomed the participants and gave the overview of Sci-minds, this was followed by a short video of the college.



The first Session was on Chemo and Bio Catalytic Avenues for BioRefinery by Dr. C. V. Rode Emeritus Scientist Chemical Engineering & Process Development, CSIR-National Chemical Laboratory Pune. He was introduced by Mrs. Gladys Da Silva.

Dr. Rode stated “Crude oil is a diminishing feed stock, and a step forward towards achieving sustainability and reduction in carbon footprints is the realization of BioRefinery concept, using renewable biomass feedstock for producing biofuels and chemicals”. He further stated that BioRefining is still largely unexplored territory and presents unique challenges as the bio derived molecules contain more than one oxygen atom.

His talk highlighted the recent work on heterogeneous catalysts and process development for (i) bio- glycerol valorization to C3/ C2 diols and propanol, glycerol carbonate while the transesterification with DMC to give another high value product, (ii) furfural is also a versatile carbohydrate derived starting material for either direct hydrogenation to give a variety of useful products, (iii) reductive cascade etherification of 5-(hydroxy methyl) furfural (5-HMF) to cetane enhancers, (iv) bio-catalytic transformation of glycerol to 2,3-butanediol and 1,3-propanediol. All these products have extensive applications as commodity chemicals, green solvents, fuel additives and as monomers for a variety of polymeric products.

The session concluded with Q&A round by the participants asking a few questions, as the session



was so easy to understand, it inspired the students to take up the study on eco friendly materials in civil engineering.

The next speaker was Dr. Rajesh Kumar Shankar Hyam, UGC-Assistant Professor, School of Physical and Applied Sciences, Goa University, Goa. Mr. Harison Cota introduced Dr. Hyam to the audience. Dr. Hyam delivered a session on “Nanomaterials for Energy Applications”.

Dr. Hyam began the session saying “Conventional non-renewable energy sources like fossil fuels have problems of environmental pollution and degradation, whereas non-conventional renewable energy sources are clean energy sources.” In his talk, he focused on the electrochemical techniques used in preparation of nanomaterials which are used for various energy applications. The techniques described by him included electrodeposition, electrophoretic deposition and anodization He also emphasized on the basic principle and working of Dye sensitized solar cell. Dr. Hyam further shared the research work done by him in this area.

At the end of his session Dr. Hyam took up questions from the audience and answered them effectively. The webinar concluded with Dr. Kala Nayak proposing the vote of thanks.

## TRAINING AND PLACEMENT

### Overseas Education

Training & Placement Cell organized a Talk on Overseas Education for the students on Thursday, March 24, 2022. The event was hosted by Dr. Shreyas Simu, Asst. TPO.



Mr. Anoy Sengupta, Manager - Business Development, IDP Education was the speaker for the session. He was accompanied by Ms. Unaiza Mulla, Head –Sales and Operations, IDP education. Mr. Anoy had a very interactive session with students. He presented to them the details of education opportunities in 5 countries, viz. Canada, US, UK, Australia and New Zealand. While explaining the importance of overseas education he said “Main reason why everyone goes abroad for education is money that they will earn later”. Ms. Unaiza contributed to the session with her insights on studies abroad and said “Studies abroad is not just about your course, it's about your overall development”.

Students had many questions about finances involved and the best universities to study abroad. The vote of thanks was proposed by Dr. Shreyas Simu, Asst. TPO. The event was coordinated by Dr. Shreyas Simu and Ms. Avila Naik, TPO.

## INSTITUTE INNOVATION COUNCIL

### Webinar Organized by IIC- DBCE for National Science Day Celebration on 'Integrated Approach in Science and Technology for Sustainable Future' by Dr Suraj Marathe

Institutions Innovation Council (IIC) celebrated the National Science Day on February 28, 2022 by organizing a webinar on “Integrated Approach in Science and Technology for Sustainable Future”. It was attended by more than 40 participants of colleges which included students and faculties. The faculty coordinator Mr. Sanjeel Naik begin the session with a warm welcome to all the attendees, introduced the DBCE IIC, and gave an overview of its' function & activities. He then introduced the guest speaker. The session was delivered by speaker Dr. Suraj Marathe, Secretary, Indian Institution of Industrial Engineering, Goa Chapter.

The session started with Dr. Marathe explaining about the integrated approach “Creating knowledge and understanding through science equips us to find solutions to today's acute economic, social and



environmental challenges and helps us achieve sustainable development and greener societies.”

How Science, Technology and Society integration leads to a better world was explained by the speaker. The speaker also explained the role of technology with sustainable design to achieve a sustainable product and process for a better lifestyle. The speaker also encouraged the students to develop their ideas and enhance their creativity.

The session ended with a Q&A session, allowing the participants to clarify their doubts and they shared their views on science day. The vote of thanks was delivered by student coordinator Mr. Bradley Rodrigues.

### **Expert talk on Process of Innovation Development & Technology Readiness Level (TRL)& Commercialisation of Lab Technologies & Tech-Transfer**

A webinar on “Process of Innovation Development & Technology Readiness Level (TRL)& Commercialisation of Lab Technologies & Tech-Transfer” was held on 22 Feb 2022. Er. Sudip Faldesai was the guest speaker.

In his address, Er. Sudip Faldesai explained the process of the innovation development and its stages. Citing an example of final year project and keeping users in mind at every stage of process, Er. Faldesai, elaborated the process of Technology Readiness and commercialisation of the technology. Further, Er. Sudip Faldesai explained how the technology transfer from innovator to industry takes place.

He highlighted the role of Prototyping Lab in Innovation Development & Technology Readiness. He requested participants to avail various Schemes like Virtual Innovation Register, Provisional Patent Scheme, Prototyping Grant Scheme of Goa State Innovation Council and boost their innovation and commercialize their technology. Prof. Satyesh Kakodkar, welcomed and introduced the speaker while Mr. Shreyas Shilimkhan proposed the vote of thanks.

## **RESEARCH AND DEVELOPMENT**

### **'Design of Experiments using Minitab'**

The Department of Mechanical Engineering held its monthly Knowledge Sharing Session, under the Research & Development ( R&D ) cell on March 2, 2022. The session was engaged by Prof. Saurabh Raikar on recent trends.

Prof. Saurabh Raikar presented a technical talk titled 'Design of Experiments using Minitab'. Prof. Saurabh started his session with a simple example on the crispiness of a biscuit purchased from a bakery.

The example was understood with Design of Experiments with the help of Minitab software to investigate the crispiness of the biscuits based on probable input factors affecting the crispiness. He further also showed how the model developed could be interpreted in the form of pareto charts, contour plots, response optimization, prediction etc.

Additionally, a mechanical domain oriented example on investigation of surface roughness of machined surface was also explained for variation due to various parameters.

He concluded the session saying, “Design of Experiments is very well suited for a linear variation, however, non-linear variations could be studied using other techniques such as Response Surface Methodology”. The session was attended by teaching and technical support staff from the Department of Mechanical Engineering and coordinated by Prof. Harshad Pingulkar.

### **FiIRE (Forum for Innovation Incubation Research and Entrepreneurship)**

#### **Women's day**

International women's day was celebrated at Forum



for Innovation Incubation. Research and Entrepreneurship (FiIRE), on the 8th of March 2022.

The program focused on women led startups and how it made a difference in their lives and others. The program was attended by girl students from Damodar College and Rosary College Miss Kanan Tandi, the co-founder of CogniCue, a tech-based start-up addressed the gathering and focused on how women are viewed in a different light when talking about start-ups. She said “Never give up on who you are and never compromise” and went on to say that “the tag of being a woman doctor, a woman lawyer, a woman entrepreneur has to go and we should not differentiate based on the tags”



The second speaker for the event was Suwarna Surlekar - founder, director, FunMinds Learning Tech Pet LTD, also concentrated on “focusing on yourself” saying that “We need to put ourselves as women first for once and make a difference”

The program ended with a Q&A session that was very informative to the young minds, the students dispersed with a new outlook at startups and business.

### Green waves up-cycling event

“Greencycling- making marvellous items out of discarded waste”

45 mins workshop, where participants worked with dry waste like plastic bottles, glass bottles, coconut, waste paper, e-waste etc. Participants were taught how to reuse waste items and turn it into decorative

items. Certificates were given out to the participants and the best work/idea was rewarded with eco gift made by green waves.

We green waves provided the waste and other stationery but students were advised to get their own kits.



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