DON BOSCO COLLEGE OF ENGINEERING

Excellence in Education

Connections

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Civil Engineering Department

Educational tour to Pune

As a part of Educational tour, 59 Final Year Civil Engineering Students along with 3 faculty members visited CWPRS-Pune, CME – Pune and Suzlon – One Earth-Pune.

Prof. Satyesh Kakodkar, Prof. Prachi Dessai and Prof. Kaushik Pai Fondekar accompanied the students.

On the first day, the students visited Central water and power research station Pune (CWPRS), a major research organization in the field of hydraulics. It deals with planning, organization and undertaking specific research and development studies related to optimizing designs of dams, coastal water such as MPT Goa, Indira Sagar dam spillway situated in Madhya Pradesh and many more. At the very first unit in CWPRS the students were guided by scientist Mr. Bilal Shaikh and Mr. Shirish Apte. Mr. Bilal Shaikh explained about the Mormugao port prototype, it's working and different components used. His studies in prototype are purely based on basics of fluid mechanics, strength of material, survey. He also explained concepts of distorted, undistorted models, Reynolds Number, Breakwaters and its execution.

The next unit was guided by Mr. Amit Kulhare. He explained about the Indira Sagar dam spillway and also demonstrated the actual working of ports, harbors and break waters. The amount of effort and hard word put in was commendable.

In the second half of the day the students along with the faculty were taken to Suzlon headquarters located at Hadapsar, Pune. Head of Core Administrative team Mr. Nitin Gurav, guided the students throughout the campus. The students had the opportunity to hear the words of the man behind this company; Mr. Tulsi Tanti, co-founder and architect of Suzlon energy limited. It is said that the name SUZLON is derived from the phrase Sujh Bujh se kiya hua kaam and LON is derived from the word loan. Suzlon is a vertically integrated wind power company. It is India's first and the world's fifth largest wind turbine manufacturers and suppliers. It makes and installs wind turbines and manufactures blades, generators, panels and towers in house. Suzlon-One Earth is a LEED Platinum and GRIHA 5star certified building with 8% of its annual energy generated through photovoltaic cells and wind units with a total incremental cost of about 11%. 65% of energy is saved by use of LED outdoor light system. Suzlon-one earth was designed taking into consideration the green building concepts of energy efficiency and sustainability, concept of global village, following own traditions and state of art and ancient principles of vastu. The environmental friendly campus of Suzlon is spread over 10 acres, divided into interconnected, individual buildings named after the 5 elements if nature namely SUN, AQUA, SKY, TREE, SEA (Suzlon excellence academy). Other facilities such as health care centre, recreation halls, canteen which caters around 700 persons at a time, STP and water treatment plants are also provided in the campus. The campus is well equipped with CO_2 and CO sensors so as to ensure positive environment for working. Moulded glass cylinders are provided in all the buildings starting from the terminu which opens to sky. Terminus consists of parking area catering 400 4-wheelers, 900 2-wheelers, 150 cycles along with a driver lounge. There are provisions for electric vehicles too. Suzlon-One Earth is indeed one of the greenest corporate campuses in the world wherein work goes in harmony with nature.

On the second day of the tour, students were taken to College Of Military Engineering located at Dapodi, Pune. Students were guided by the Dr. Nagraj Gupta, Associate Professor. The College building was constructed in 1943 at a cost of Rs. 20 lakhs. College of Military Engineering is a premier technical and practical training institution of Indian Army Corps of Engineers; this includes combat engineers, military engineering service, border roads organisation and

survey. The main building of the college is a majestic and imposing structure dressed in stone masonry. The stones used for construction were quarried from the same place itself so as to have a uniform colour of the building and avoid the transportation cost. Students got an opportunity to visit several labs: structural, transportation, environmental labs which were well equipped with all the necessary instruments and models which helps the students to understand the concepts in a better way through visualisation. Landmark for miles around, this building is an enduring legacy.

RERA will bring revolution in Construction Industry says Desh Prabhudessai

The Real Estate Regulatory Authority (RERA) Bill will bring lot of changes in Construction Industry said Dr. Desh Prabhudessai, President of Confederation of Real Estate Developers' Associations of India (CREDAI). He was speaking as the Chief Guest for the installation ceremony of Indian Concrete Institute –Don Bosco College of Engineering Student's Chapter.

Er. Chandrashaker Prabbhudessai, Chairman of ICI Goa, Fr Paul Dsouza, Rector of Don Bosco, Dr. Neena Panandikar, Principal, Prof Annapurna Sakhardande, HOD Civil and Prof. Satyesh Kakodkar, Faculty Coordinator ICI –DBCE Student's Chapter were present on the occasion.

Further speaking on the occasion Dr. Desh Prabhudessai said that RERA will protect the interest of the homebuyer and also will ensure timely delivery of projects by enforcing strict regulations on the promoter. He said that developers will be able to sell projects only after the necessary clearances. Under RERA, builders and agents will have to register themselves with the regulator and get all projects with more than eight apartments registered before launch.

Speaking on the occasion Er. Chandrashaker Prabbhudessai, Chairman of ICI Goa, highlighted the role of engineers in skill India movement. In his address Er. Prabhudessai stressed on the opportunities, space and scope for the development of the talents of the Indian youth.

He said that a tailor-made, need-based programmes would be initiated for specific age groups which can be like language and communication skills, life and positive thinking skills, personality development skills, management skills, behavioral skills, including job and employability skills.

Fr. Paul Dsouza, Rector of Don Bosco in his address congratulated the council and also suggested to organize activities which will help student community.

Earlier, Dr. Neena Panandikar, Principal welcomed the gathering, while Prof. Satyesh Kakodkar administered the oath to the new council.

Miss. Shivani Nabar, outgoing secretary presented the annual report. Mr. Atish Lolienkar, chairman of ICI –DBCE Chapter expressed his views. Mr. Shwetang Nadkarni, secretary proposed Vote of Thanks while Miss. Shruti Mauzo compered the programme.

Field Visit to Sewage Treatment Plant at Tonca

The final year Civil Engineering students along with Prof. Prachi Dessai and Prof. Madhuraj Naik visited the Sewage treatment Plant at Tonca, Miramar on 27th October 2017. In all seventy one students visited the site.

On visiting the site, the students were made aware

that the sewage treatment plant treats municipal waste for the Panjim City having an approximate population of 60,000.The plant has a capacity of treating 12.5 MLD of waste water everyday. The Assistant Engineer Incharge Mr. Shetty explained the various aspects in the processes involved in the treatment of wastewater.

This visit was extremely beneficial to the students for understanding the primary treatment processes to treat municipal effluents. Students gained hands on experience in understanding the execution of processes like Screening (grit removal), Aeration, Digestion, Decanting, Chlorination and also learnt benefits of C-Tech (Cyclic activity sludge process) technology used in treatment plant.

Report

Dr. Shwetha Prasanna, Associate Professor, Department of Civil Engineering, attended the 4th Technical Congress on Resources, Environment and Engineering (CREE 2017) held during 29th -30th December 2017 in Hong Kong and presented the paper entitled "Soil Reinforcement Using Coconut Shell Ash: A Case Study of Indian Soil". This conference was sponsored by Society for Resources, Environment and Engineering and Tech Reviews Ltd. The above paper has been published in Journal of Civil Engineering and Construction, Volume 6, Number 2, November 2017.

Mechanical Engineering Department

Talk on "Emission Legislation and Control"

A talk on "Emission Legislation and Control" was delivered by Mr. Vagesh Shangar R, Senior Engineer-Engines AD, Powertrain Division, Mahindra Research Valley, Chennai on 23rd October 2017 for third year mechanical engineering students under the banner of "SAE Collegiate Club of DBCE" in association with Mechanical Engineering Department.

Mr. Vagesh spoke on various aspects of emission norms for automobile industries. He gave a detailed explanation of various tests performed on engines like Tail Pipe Emission, Dynamometer Emission Testing, etc. and spoke on Bharat norms emission control standards. He also spoke on placement and internship opportunity for students through various SAE student competitions.

This talk was organized by Prof. Chetan Gaonkar and Prof. Siddhu Biradar.

Talk on "Non Destructive Testing Techniques"

The Dept of Mechanical Engineering organized a talk on "Non Destructive Testing Techniques" in association with Institution of Engineers, India on 14th October 2017 for Second year Mechanical engineering students. The resource person was Mr. Subash Bandodkar, Retired DGM, Zuari Industries Ltd, Goa.

He explained to the students that non-destructive testing (NDT) is the development and application of technical methods to examine material of components in ways that do not impair future usefulness and serviceability in order to detect, locate, measure and evaluate discontinuities, and other imperfections, to assess integrity, properties and composition; and to measure geometrical and physical characteristics. He said that Non-destructive testing (NDT) plays an important role in the quality

control not only of the finished products, but also of half finished products as well as the initial raw materials. NDT can be used at all stages of the production process. It can also be used during the process of establishing a new technology by product quality or when developing a new product.

He explained the different types of NDT methods and their applications in the industry. Some of the major NDT methods discussed were Magnetic Particle Testing (MT), Liquid Penetrant Testing (PT), Radiographic Testing (RT), Ultrasonic Testing (UT), Electromagnetic Testing (ET), Laser Testing Methods (LM), and Leak Testing (LT).

The talk was coordinated by Prof. Sharad Shanbhag and Prof. Manjunath Narvate.

Two Days workshop on "Six Sigma"

Two days' workshop on "Six Sigma" was conducted for students of Final Year Mechanical Engineering on 4th and 5th January 2018 for. In all 64 students attended the workshop for Yellow Belt Certification.

Mr. Vikas Saxena, Chief Consultant Rileen Global Consultants and Mr. Adrian were the resource persons for the workshop. Vikas Saxena is a Lean & Six Sigma Master Black Belt from Indian Statistical Institute with over 25 years of Business Management and quality related experience in Manufacturing, Banking, Health Care and Services domains. He has successfully implemented Six Sigma and Lean in various organizations in India, Middle East and Europe.

The speaker introduced students to Six Sigma and its problem solving significance. They were divided into 6 groups and were given various tasks. The method for problem solving (DMAIC), Define phase and its important tools were discussed in detail. Concept of critical to quality definition was explained to students.

The coordinators for the workshop were Prof. Suraj Marathe and Prof. Ishan Kossambe.

Field Visit to Hindustan Waste Treatment Pvt. Ltd. Saligao

The Directorate of Technical Education, Goa organized a field visit to Hindustan Waste Treatment Pvt. Ltd., Saligao for teaching staff of Engineering colleges and Polytechnics on 04th January 2018. The field visit was attended by Prof. Ajit Salunke, HOD Mechanical Department and Assistant Professors, Sharad Shanbhag, Manjunath Narwate, Madhuraj Naik and Prof. Parashuram Hosamani.

The state-of-the-art Solid Waste Management plant is fully automated except for the sorting of dry waste which is a manual process. Mixed waste is dumped first onto the tipping floor and is then carried by a conveyor belt where manual monitoring and sorting is performed by trained workers. Following segregation, various waste categories are provided with further treatment. The plant is capable of treating 100 tonnes of waste per day and in addition to solid waste management generates power. The plant is also generating compost and also treats effluents so as to use this recycled water for gardening and other non-drinking purposes. The full plant is controlled and monitored via a SCADA system and CCTV Cameras. Biomethanation technology is included as part of the processes, which generates more than sufficient energy to power the entire plant as well as a surplus, which can provide a solution to the power crisis. Overall, it was a very enlightening and learning experience in the field of solid waste treatment.

The visit was coordinated by Prof. Vivek Belokar, Asst. Director of Technical Education.

One Day Workshop on Microcontroller

Mechanical Engineering department organised a 2-day workshop on Microcontrollers on 11th January 2018 and 12th January 2018. Rev. Fr. Kinley D'Cruz, the

Director, addressed the gathering pointing out the importance of electronics knowledge, software programming and coding in view of the recent development in interdisciplinary engineering fields. Prof Ajit Salunke, HOD Mechanical, urged the students to take maximum benefit of the workshop for academic projects and career opportunities.

The workshop was conducted by Mr. Rajaram Parxenker, founder Elemtronics, who gave a detailed description about all the basics of microcontrollers. He explained the basic differences between old microprocessors such as 8085 and the new-end processors such as Arduino, raspberry Pi, etc. A total of 30 final year mechanical engineering students attended the workshop. The students were imparted with knowledge of microcontroller architecture, programming, interfacing with sensors such as proximity sensor, temperature sensor, gyro sensor, IR sensor etc, as well as various actuators like stepper motors, servo motors, and displays.

Overall, the workshop was a great success and very helpful for the students in understanding the electronics involved with their project. The workshop was coordinated by Asst. Prof. Tanay Rege.

One Week TEQIP-III AICTE-ISTE Short Term Training Programme (STTP) on "Advances in Fluid Mechanics: Experimental and Computational"

The Department of Mechanical Engineering organized a one-week TEQIP-III AICTE-ISTE Short Term Training Programme (STTP) on "Advances in Fluid Mechanics: Experimental and Computational" from 8th to 12th January 2018. The STTP was inaugurated by Mr. Abhay Keny, proprietor of Sri Shantha Pumps in the presence of Rev. Fr. Kinley D'Cruz, Director DBCE; Dr. Neena Panandikar, Principal DBCE; Dr. Uday Dabade, HOD-Mechanical, Walchand College of Engineering (WCE), Sangli, Maharashtra; Prof. Ajit Salunke, HOD-Mechanical, DBCE; and Dr. Pravin Verekar, STTP Coordinator, DBCE. Prof. Ajit Salunke, in his welcome address, gave an overview of the various activities of Mechanical Engineering Department at DBCE. He emphasized close collaboration that the Department has with the industries. Dr. Pravin Verekar briefed about the various sessions at the STTP. Dr. Neena Panandikar in her talk highlighted the leading role the college is playing on the education front in Goa. Rev. Fr. Kinley D'Cruz during his address highlighted the importance of life-long learning and role such training programmes play. Chief guest Mr. Abhay Keny, in his keynote address, discussed the wide applications of fluid mechanics in various fields of engineering. Prof. Sachin Turi, Co-coordinator of the STTP, proposed vote of thanks at the inaugural function.

The one-week STTP provided a survey of the principal concepts and methods of experimental and computational fluid dynamics. It focused on imparting knowledge on recent trends and practices in fluid dynamics research. The STTP provided an opportunity for the participants from across India to interact with well-known researchers in the field of fluid mechanics.

In his session on "Overview of Fluid Mechanics", Dr. Pravin Verekar of DBCE explained the principles of fluid statics, fluid kinematics and fluid dynamics using illustrations. Dr. Prasanna Nambiar of Don Bosco Institute of Technology, Mumbai in her session on "Devising Experiments in Fluid Mechanics" showed how simple experimental setups can be constructed to demonstrate concepts of viscosity, buoyancy, surface tension, cavitation, bulk modulus, hydrostatic forces, friction in pipe flows, etc. Dr. Shibu Clement of BITS Pilani, Goa campus in his talk on "Compressible Fluid Flow" explained continuum, Knudsen number, Mach number, Mach wave, shock wave, sonic boom, etc. Dr. B. S. Gawali of WCE in his sessions lectured on Computational Fluid Dynamics (CFD) and CFD case studies. Dr. Uday Dabade of WCE explained on how to prepare research project proposals and talked about sources of research

funding. Prof. Ajit Salunke, Prof. Chetan Gaonkar, Prof. Ishan Kossambe and Prof. Tanay Rege conducted CFD practicals on various case studies using ANSYS.

Dr. Jaywant Arakeri of Indian Institute of Science (IISc), Bangalore in his session on "Some Basic Fluid Phenomena through Pictures" explained causes of flow, types of flow, importance of Reynolds number, boundary layer theory, boundary layer separation, bluff and streamlined body, vortex, wake, lift and drag, unsteady flows, dye visualizations, fish propulsion, etc. Prof. Arakeri in his talk on "Instability, Transition and Turbulence" explained different types of instabilities, transition to turbulence, scales of turbulence, convection heat transfer, tube convection, and high Rayleigh number convection.

Dr. Raghuraman Govardhan of IISc in his talk on "Experimental Techniques in Fluid Mechanics" explained different types of pitot tubes, hot wire anemometry, laser Doppler Velocimetry (LDV) and particle image Velocimetry (PIV). Prof. Govardhan in his session on "Fluid-Structure Interaction (FSI)" described collapse of Tacoma Narrows bridge, coupled vibration problem, flutter of aircraft engine blades, negative damping, negative inertia, force and phase excitation, switch in timing, wake modes, response of shocks to body motion, shock-structure interaction, response of flexible bodies, usefulness of FSI in energy extraction.

The STTP was organized in collaboration with Walchand College of Engineering (WCE), Sangli, Maharashtra and was sponsored by the Department of Science, Technology and Environment (DSTE) of the Government of Goa.

Industrial Visit Report to Vinka Industries, Zarhak Moulders and Tata Motors

The students of Second Year Mechanical Engineering visited Vinka Industries, Zarhak Moulders and Tata Motors (Auto Industries) on 27th January 2018. It was organized by Department of Mechanical Engineering.

Vinka Industries Pvt. Ltd is a pioneer in making tools using powder metallurgy manufacturing process. Mr. Mohit Khandparker, Plant Manager, showcased different products manufactured by the company. Manufacturing details and equipment required for products like circular saw, gang saw, wire saw etc. were explained. Various Processes like Volumetric cold pressing, wet and dry mixing, brazing, reduction, sintering etc were demonstrated.

Zarhak Moulders Pvt. Ltd manufactures various products from Linear Low Density Polyethylene (LLDPE). Shakti Tanks produced by the company is one of the forerunner products in the market. Mr. Blaze Costabir, Managing Director, addressed students to take up innovative solutions. Students were explained about various rotating moulding technologies like rock and roll rotation, bi-axial rotation by Mr. Rahul Kakodkar, Consulting Engineer for Zarhak moulders. Students got the opportunity to see different stages of moulding process. Various design considerations pertaining to manufacturing process were also explained.

Auto Industries is a passenger and Commercial Vehicle dealer for Tata Motors in Goa. Mr. Laxmikant Lawande, Assistant works Manager, demonstrated various parts of the commercial vehicles. He shed light on BS 4 compliance, working of turbocharger, Air Intake system, Fuel system, cooling system, lubrication system, clearance between critical components etc. Mr. Amit Choudhary, Manager, took students for a tour to various stations at the service center and emphasized the role of each.

The students garnered knowledge in different areas of mechanical engineering. The visit was organized and co-ordinated by Prof. Sharad Shanbhag and Prof. Raymond Joseph.

Electronics And Telecommunications Engineering Department

Workshop on "ANALYSIS AND SIMULATION OF CONTROL SYSTEMS USING MATLAB"

The Department of Electronics and Telecommunication Engineering in association with DBEATS organized a one day workshop on "Analysis and Simulation of Control Systems using MATLAB" on 28th October 2017. The workshop was organized for the Third year ETC students and the resource persons for the workshop were Prof. Anisha Cotta and Mr. Zain Rajani.

The workshop commenced at 9.30 am with an introduction to stability of control systems using Root Locus technique. In control theory and stability theory, root locus analysis is a graphical method for examining how the roots of a system change with variation of a certain system parameter, commonly a gain within a feedback system. The root locus plots of the poles and zeroes of the closed loop transfer function in the complex s-plane were analysed in Matlab. Control systems were simulated using Matlab and its stability was determined by using the Root Locus technique. Following the root locus technique, the students were introduced to Bode Plot which is a useful tool that shows the gain and phase response of a given LTI system for different frequencies. Bode Plots are generally used with the Fourier Transform of a given system time domain analysis and Matlab was used to demonstrate Bode plots and for determination of gain margin and phase margin.

The next session was based on determination and analysis of time domain specifications using Matlab. The session included finding the time domain response for various types of standard input signals. Second order systems with different types of damping ratios were demonstrated using Matlab. Time domain specifications of control sytems such as rise time, fall time, peak time, settling time etc. were implemented theoretically and were verified practically using Matlab.

The afternoon session was based on the design and analysis of compensating networks in the control system. Lead, lag and lead- lag networks were introduced and their typical uses were discussed. Matlab was used to design the different compensators. Analysis of the lead, lag and lead- lag networks was also done using Matlab. Given the control plant, the desired specifications were achieved using compensators PI, PD, and PID, and optimizing controllers were used to improve system parameters such as reducing steady state error, reducing resonant peak, improving system response by reducing rise time. Around 50 students from T.E ETC attended the workshop and showed keen interest in all the topics that were covered.

Workshop- "One week Internship Programme on 'Practical Approach to the field of Electronics"

As a part of the in-house training for BE-ETC students, the ETC Department in association with DBEATS Council, organized a 'One week internship programme on 'Practical Approach to the field of Electronics' from 8th to 12th Jan, 2018.

The Internship programme started with a one and a half day session on "Schematic and Layout using OSCAD" on the 8th and 9th of January, 2018. The sessions were conducted by Prof. Flavia Leitao and

Prof. Mathilda Colaco. First day's sessions began with an introductory and interactive talk on "PCB Design" explaining the different stages involved in PCB designing, the different packages, holes and surface mount techniques along with soldering methods. Hands-on training session on OSCAD exposed the students to the different OSCAD editors and builders, drawing of Schematic in Schematic editor, generating Netlist, mapping footprints in Footprint editor and finally drawing the Layout in Layout editor. The following contents were covered during the morning session of second day: testing the circuit on breadboard, transferring the Layout from OSCAD onto the PCB, masking to remove the unwanted copper, etching, drilling and mounting of components, soldering, testing.

The afternoon session was delivered by Prof. Trima P. Fernandes e Fizardo on "Introduction to Cryptool 2." Hands-on Session was conducted on Cryptool 2.0 software where Algorithms such as Julius Caesar Cipher, Transposition Cipher, RSA Algorithm for Encryption and Decryption, DES Algorithm for Encryption and Decryption were implemented. The session concluded with various applications of Cryptography.

On the third day there were sessions on "Design and Analysis of Microwave Components". It began with Introduction to Microwave Engineering by Prof. Mohini Naik where the Students were made familiar with design of simple micro strip line, Quarter wave transformer & T – Junction Power Divider. Thereafter, Prof. Yeshudas Muttu introduced the students to implementation and analysis of Microwave Components like Rat race coupler and Hybrid coupler. This session was extended with optimization of those components to achieve better results.

On the 11th and 12th of January the sessions were conducted by Prof. Melba D'Souza, Prof. Deron Rodrigues and Prof. Vishnu Rathod on "Advances in Digital Image Processing". They commenced with a technical session on Introduction to key stages in Digital Image Processing, by Prof. Melba D'Souza. This was followed by hands on session using MATLAB on fundamental modules and different applications of Image Processing. Prof. Deron Rodrigues gave valuable and basic information on image formation, image resolution and different image enhancement techniques. MATLAB programs to Import, Export, and Convert Image class and types were implemented, followed by MATLAB codes to implement Image Arithmetic, ie. Addition, subtraction, multiplication, and division of images. Basic Image Transforms used in Image processing, Basic Geometric Transformations which include cropping, resizing and rotating images were covered.

On the last day, Prof. Deron Rodrigues conducted sessions on 'Image Enhancement' which consisted of Contrast adjustment, histograms and histogram equalization and other image enhancement tools. This was followed by session on 'Image Restoration' by Prof. Vishnu Rathod, which covered MATLAB codes for creation of blurred images, de-blurring of images, creation of noise images and de-noising of images. In the afternoon session, Prof. Vishnu Rathod explained 'Video Processing' which included implementation of codes to display a video clip in MATLAB, acquiring frames from video. This was followed by Prof. Deron Rodrigues on Morphological Filtering which included Dilation, erosion, reconstruction, and other morphological operations.

Workshop on Arduino

The Department of Electronics and Telecommunication Engineering in association with IETE STUDENT CHAPTER conducted a one day workshop on "ARDUINO" on 13th January, 2018 for the second year students of Electronics and Telecommunication Engineering branch. A total 58 students participated in the workshop. The resource persons were Prof. Vishnu Rathod and Miss. Cecilia. The main objective of this workshop was to upgrade

the skills of the students. The workshop provided a platform to learn the Arduino and its application using the Arduino software. The following topics were covered with hands-on exposure on the software.

- Introduction to arduino
- Blinking LED'S
- Driving different type of motors
- Relays
- Bluetooth
- NRF 24LO1 wireless communication
- 16*2LCD interfacing
- Practical examples and tasks.

Prof. Samantha Cardoso and Prof. Vishnu Rathod Faculty co-ordinators for IETE organised the workshop.

Workshop on "PCB DESIGN"

To fulfil the Industry goals and requirements the department of Electronics and Telecommunication Engineering in association with DBEATS conducted a one day workshop on "PCB Design" on the 27th of January, 2018 for the second year students of ETC. Total of 55 students attended the workshop.

The workshop started with a motivational and interactive talk on "PCB Design". The resource people for the workshop were Prof. Flavia Leitao and Prof. Mathilda Colaco, faculty at Don Bosco College of Engineering.

The following contents were covered for the workshop:

- Understanding of the Circuit
- Knowledge of component packages
- Testing the circuit on breadboard
- Drawing circuit layout and transferring mirror image of layout on PCB
- Masking to remove the unwanted copper
- Etching
- Drilling and mounting of components
- Soldering
- Testing.

The circuit implemented on the PCB was an "Astable Multivibrator"

Firstly the students were given brief explanation on the different stages involved in PCB designing using power point presentation.

The Students were trained to read datasheets followed by brief understanding of the different packages (TO-92,TO-220, etc) and also the different types of parts (Through holes and Surface mount) along with the soldering methods (wave soldering and reflow soldering) for the same. The students had a hands-on experience in designing the PCB.

The students showed great zeal and enthusiasm in designing the PCB and the satisfaction and joy to see the circuit work was overwhelming. The workshop was a fruitful and a very successful event.

Expert talk on Microcontroller Development Boards and their Applications

In order to bridge the gap between the academia and industry, make the students aware about modern electronic tools and to encourage students to innovate, the ETC Department, in association with DBEATS organized an expert talk for the third year ETC students on 30th January 2018.

Mr. Raja ram Parsekar, Owner, Elementronix delivered the seminar in which, he focused on various microcontroller development boards available for different applications. The students were introduced to microcontroller based boards such as Arduino (UNO, NANO, and MEGA), STM32, ESP 12, ESP 32 etc. as well as single board computers such as Raspberry Pi (Model 3, Pi 0), Beagle board, Intel Galileo etc. The students also had the opportunity to physically see some of these boards.

The speaker gave valuable insight on selection of boards for various applications and design considerations and also briefed the students on how Embedded C can be used to bypass the need for development boards so as to efficiently exploit the potential of microcontrollers. Mr. Parsekar gave tips on various fields of electronics in which the students could do their final year projects. Certain students also put forth their ideas and discussed with the speaker, the practicality and feasibility of these ideas. With final year projects around the corner, the TE ETC students found this seminar very valuable.

Computer Engineering Department

Workshop on Python, Raspberry PI and IOT

Computer Department organized a Internship Workshop on Python, Raspberry pi and IOT. The workshop was conducted from 2nd January 2018 to 13th January 2018 in Don Bosco College of Engineering, Fatorda. The resource faculty for the workshop was Mr. Vibhav Kharangate and Mr. Shravan Hegde, Earnestek, Margao. The workshop was attended by Third Year Computer Engineering students. The coordinator for the workshop was Prof. Kiran Waghmare.

In the first week, Mr. Vibhav Kharangate gave insight knowledge of programming language PYTHON with software called "pycharm". Various concepts of coding such as variables, lists, sets, functions, objects and classes were covered using PYTHON programming.

In the next week, Mr. Shravan Hegde started with raspberry pi hands on session. In this session, Raspberry Pi was used to control LED, various kinds of sensors and bot using PYTHON programming. They also taught IOT (Internet of Things) i.e. how to control a Raspberry Pi using a phone using MQTT protocol.

The workshop was interactive as well as hands on, with simultaneous practical sessions conducted by resource persons. The objective of this workshop was to deliver important programming skills which would be beneficial to students with regards to their future final year projects. Students were encouraged and challenged to create their own mini projects and come up with innovative project ideas.

1st Higher Education Leadership Awards - HELA 2018

Venus International Foundation, a well-known educational society has recognised the services of Mr. Gaurang Patkar, HOD-Computer Engineering, and conferred the Young Leader award in the International Higher Education Leadership Meet 2018, held in Chennai. The Centre for Leadership Development (CLD) of Venus International Foundation (VIF) organized a full day Higher Education Leadership Meet on 6th January 2018. It was the 1st Meet and was attended by 60 participants (representing 5 Countries: from Oman, Jordan, UAE, Malaysia, India and Uzbekistan) employed in a higher education sector at the capacity of Department Chair/Division Head, Vice Principal, Principal, Dean and Director' and working in the frontiers of (i) Agricultural Science (ii) Engineering (iii) Health and Medical Sciences (iv) Humanities and Social Science (v) Management (vi) Science (vii) Veterinary and Animal Science. The Leadership Meet provided an opportunity for participants to share knowledge and explore the Groundbreaking strategies, Influential

Trends, and best practices that define effective leadership at the College and University levels today. In the Inaugural session, Mrs. M. S Sudha - Program Chair of the meet welcomed the gathering. Dr. Arockiasamy S, University of Nizwa, Sultanate of Oman delivered the presidential address. Further, Prof. (Dr.) Debadatta Panigrahi, RAK Medical and Health Sciences University, United Arab Emirates and Dr. Mubashir Bashir Angolkar, KLE University, India delivered the special address.

Science And Humanities

AICTE- ISTE One week Workshop on Statistical Techniques and Tools in Research Methodology"

The Department of Science and Humanities, inaugurated the AICTE- ISTE One week Workshop on the theme: "Statistical Techniques and Tools in Research Methodology" on 6th November 2017 at the hands of Shri Sidharth Kuncalienker, Chairman, EDC Goa. Speaking on the occasion, Shri Kuncalienker, elaborated the role of statistics in every aspect of life and more so in politics. He explained how every political and economic decision of the government is a result of statistical surveying and analysis. Earlier, the Director Fr. Kinley D'Cruz and Principal Dr. Neena Panandikar welcomed the gathering and applauded the efforts of the department in taking such an initiative. Rector Fr. Paul D'Souza, Head of Department – Dr. Kala Nayak, and resource person Dr. Parameshwar Pandit, Bangalore University were the other dignitaries present.

The convener of the workshop Prof Roseline Fernandes explained the significance of organising the workshop on statistics. The workshop was aimed at imparting to every professional and researcher the awareness and use of statistical tools to help draw rigorous and substantial conclusions to an experimental activity. The workshop had experts from various reputed institutions like Manipal Institute of Technology, Bangalore University, Christ University, Shivaji University, Goa University among others, who delivered the sessions. A souvenir was released on the occasion that was presented to all the participants. Prof. Natasha Jaques, co-convener delivered the vote of thanks. The workshop concluded on 10th November 2017.

The workshop on STTRM saw a whole range of varied topics and discussions on Statistics unfold during the course of these 5 days.

On day one of the workshop, Dr. Pandit introduced the concepts of random variables and the probability distributions that they could possibly follow that help one calculate and quantify a chance factor for a given event.

The evening session included an introduction to the use of R-software demonstrated by Dr. Wagh. In the practical session he introduced and explained the various commands that could be used in the r-software.

Dr. Pandit continued his session with inferential statistics on Day 2, in which he explained parametric and non-parametric statistical inference and how an experimenter or a statistician can set up a suitable hypothesis which would have to be tested for acceptance or rejection for fixed level of significance. The next session for the day was conducted by Dr. Pai who explained to the audience the various steps and methods carried out in testing of variation in samples. He elaborated on the one way and two way ANOVA classification method, taguchi method and then continued with Design of Experiments which was then practically solved in the laboratory session post lunch with the help of MINITAB.

Day 3 saw the participants involve themselves in the concepts of Operations Research delivered by Prof. Sanjai, who explained how to formulate a mathematical model in a Linear programming problem with objective function subject to suitable constraints. He further elaborated on the methods

like, graphical, simplex methods that could be used to solve the mathematical model to obtain the optimum result. He further continued to explain the concepts that are dealt with in Non-linear programming and engaged the participants in a practical session to solve Linear programming problems and transportation problem with the help of an excel sheet.

Prof. Suraj Marathe began a session on statistical quality control on day 4 in which he explained the importance of quality and how one would need to control the chance and assigned causes that could disturb a sample. He explained elaborately on the concepts of Acceptance sampling, steps involved in Statistical Quality Control using variable and attribute charts and then explained that one could proceed into DOE as explained by Dr. Pai on Day 2.

Dr. Suraj Rane delivered a session on Reliability Engineering in which he explained the very basics of reliability, failure rate and the reliability of components and hence of a system in series and parallel. The participants were then made to analytically compute reliability, failure rate, mean time to failure and the reliability of a system.

The final day began with a lecture on Stochastic processes delivered by Dr. Sebastian Mesquita. He explained to the participants the concept of Random Processes and further discussed Markov, Counting and Poisson Processes. He also presented the Cramer Lumberg Model, Brownian Motion along with citing real life examples related to insurance, stock exchange and commodity exchange.

Dr. Shirke in his lecture on Regression Models explained to the participants the requirements of a regression model being assessing the relation between responses and regressors and later on predicting response for a given values of regressors. He further explained the need to address the errors in the regression model and the use of the Least Square Method. The participants were explained to regarding Linear Regression, Multiple regression and Logistic Regression. As an example of Logistic Regression he explained Artificial Neural Network and Regression Trees.

The workshop ended with a valedictory function graced by Dr. D.T. Shirke, Pro-Vice- Chancellor , Shivaji University who congratulated the organisers for having conducted the workshop.

Rev. Fr. Kinley D'cruz appreciated the organizing team for their effort and handed over appreciation letters to the committee.

The 5 day report of the sessions during the workshop was read by Prof. Natasha D'souza e Jaques and Prof. Roseline Fernandes delivered the vote of thanks.

NSS

NSS SPECIAL CAMP 2017-18

The NSS unit had its annual Special Camp from 23rd to 27th January 2018 at Rachol Seminary, Rachol. Twenty-seven (27) NSS volunteers attended the camp including 18 girls. The volunteers were accompanied by staff members Prof. Harison Cota (NSS Programme Officer), Prof. Avertano Barreto (Sports Officer) and lady staff Dr. Prof. Starina Dias (Civil Engineering Department).

The work undertaken was: cleaning of a mango orchard by cutting wild grass and collecting dried leaves. The volunteers were also given a tour of the Rachol Seminary by Bro. Pauli D'Costa explaining its rich history and priceless artifacts. The camp also involved a trek from Rachol seminary to Don Bosco College of Engineering to take part in the Republic Day flag hoisting ceremony. The volunteers presented a cultural programme consisting of a mime, moral based skit, dance performances, NSS song, and comedy skits by the staff. The cultural programme was attended by Rev. Dr. Aleixo Menezes (Rector, Rachol Seminary), Rev. Dr. Nelson Sequeira (Professor, Rachol Seminary), Fr. Kinley D'Cruz (Director, DBCE), Fr. Marvin Vaz (Youth Animator, DBCE), Dr. Neena Panandikar (Principal, DBCE), other priests and staff from Rachol Seminary and Don Bosco College of Engineering. The cultural programme was followed by dinner and camp-fire.

On reaching the camp-site on 23rd January, the volunteers were welcomed and addressed by the Rector of Rachol Seminary, Rev. Dr. Aleixo Menezes was very helpful and provided all the necessary facilities to make the camping experience very fruitful.
Every day began with waking-up at 6am followed by a short prayer, warm-up exercises and games at 7.15am.

Each day's work began at 9am after having a good breakfast. The volunteers worked for three sessions of one and half hour each with either a tea break or lunch break in between. They worked in four groups consisting of six/seven members each with each group assigned with a different area to clean, which they did very enthusiastically. After freshening-up, the evening time was given to practice for the cultural programme. This was followed by dinner at 8.00pm. The day ended with lights-off at 10.30pm.

SPACE

The Seventh International Conference on Security, Privacy & Applied Cryptography Engineering – SPACE 2017 was inaugurated in the presence of Chief Guest Shri Jose M. Noronha, Chairman, Goa Public Service Commission, Mr. Sanjay Burman, Ex- Scientist –DRDO & Member of Steering Committee – SPACE 2017, Prof. Debdeep Mukhopadhyay, Professor, IIT Kharagpur & Member of Steering Committee – SPACE 2017, Fr. Kinley D'Cruz, Director, DBCE, & Honorary General Chair, SPACE 2017, Dr. Neena Panandikar, Principal, DBCE, & General Chair, SPACE 2017 and Prof. Roseline Fernandes, Organising Chair – SPACE 2017 on 15th December 2017 at Don Bosco College of Engineering. This annual event is devoted to various aspects of security, privacy, applied cryptography, and cryptographic engineering. This is the seventh annual conference and its previous editions have been held in the past years in various prestigious institutes across the country. SPACE has catered to the needs of our country to foster research in the area of cyber-security and applied cryptography and has been providing members of national research establishments, academic institutions and industry with an exposure to cutting-edge research, hands-on training, vital inputs, and the opportunity to interact with well-known international experts in the field.

Mr. Noronha in his address explained how the Chief Minister who was the then Defence Minister of the country was instrumental in bringing SPACE to Goa and opening an avenue for Don Bosco College of Engineering to collaborate with DRDO. Mr. Noronha also emphasized on the need of taking technology at the grass root level. He wished the very best for the

success of the conference and hoped that it would make a positive contribution to the society.

Dr. Panandikar in her welcome address stated that the purpose of this Seventh International Conference was to be inclusive, to exchange, and to shape our future. Fr. D'Cruz urged the delegates to be prepared to be challenged and inspired.

Prof Dr. Debdeep Mukhopadhyay, Member, Steering Committee SPACE 2017, gave a brief journey of SPACE. He explained how the conference SPACE has been held in various parts of the country since 2011 and it has grown in domain and knowledge. He also shared his goal of taking SPACE internationally. He also informed the gathering about the best papers of the conference being published in the journal Hardware and Systems Security. The inaugural function came to a close with the vote of thanks being proposed by Assistant Professor Roseline Fernandes, Organizing Chair.

SPACE 2017 will continue with illustrious talks from eminent scientists and researchers in the field of cryptography for the next three days. The program includes seven invited talks and four tutorials on several aspects of applied cryptology, delivered by world-renowned researchers: Asaf Ashkenazi, Shivam Bhasin, Jean-Luc Danger, Thomas Eisenbarth, Harry Halpin, Mike Hamburg, Gary Kenworthy, Victor Lomne, Axel Poschmann, Karim Tobich, Ingrid Verbauwhede, and Yuval Yaron.

BOOTCAMP

On 27 January 2018, the Goa State Innovation Council (GSInC) in association with SEEDS organized a BOOTCAMP on Innovation at Don Bosco College of Engineering - Fatorda. The event began with an address by Mr. Sudip Faldesai, Project Officer at GSInC, in which he introduced the concept of innovation to the students and how the national innovation council which is a part of Government of India, aims to create a system in order to encourage young talent and ideas and boost the innovation in the state. He informed the students that new job openings are very less in the country and there is a huge competition for jobs and that GSInC holds the Chief Minister start up award which helps the winners get funds to put their ideas into practice and also set up incubation centres.

The first speaker of the event was, Ms. Farheen Sayed, who narrated the story of how she founded her own start ups- "Brushfix" and "Boxifer", the latter of which had won her the prestigious Chief Minister Yojana start up award. She explained the steps to be taken to create an entrepreneur. She spoke at length about the increase in rate in development of start ups in India and how important it is to take in to consideration the ease of accessibility of one's business so as to appeal people of different ages. After the question and answer session with the audience, the next speaker was Mr. Gareth Almeida, one of the co-founders of "Garage Guy". He explained that garage guy is an app which informs about servicing and maintenance of one's vehicle. He also spoke about how the main aim of his start up is to revolutionize the automobile market by providing an

app to make service appointments, give reminders as well as an online platform for purchasing automobile parts and accessories, and for people to talk to one another and offer automobile related advice. Besides this, they also hold campaigns to promote safety awareness like "100 days" and "50 days", and offer deals on services like car washes. He emphasized on how important it is to change one's lens of perception in order to identify opportunities and how to make ideas happen with sufficient business planning, market research and proper execution in order to establish the real potential of one's product. The students enthusiastically took part in the question-answer round. The next speaker was Mr. Tushar Sawant who spoke about the qualifications and eligibility for the various aids given to start ups like subsidies, loans and the Prime Minister Yojana. These qualifications included age and money (income) limits and educational qualifications as well as implementing agencies and areas and selection of beneficiaries.

The second half of the event commenced with Mr. Sushant Surlakar, the chief coach, who spoke to the students about the various processes required in setting up an Enterprise, which included marketing strategies and sales techniques. Some of the techniques could also be used for other aspects like SWOT analysis (Strengths, Weakness, Opportunity, Threats). He made a quote saying "A goal without a timeline is a dream" and asked the students to give themselves goals in time and keep a check on reality. After this, the students were grouped according to their departments and were asked to create a project idea from scratch with emphasis on creativity, manufacturing cost, model design, tagline, total income, etc. They were then judged by Mr. Sudip Faldesai and Mr. Sanford Mascarenhas. FE Civil was declared the winners. The event ended with Renvick Fernandes proposing the vote of thanks.

Overall, the event was a huge success and really helped in enlightening the students on prospects of being an entrepreneur, as well as giving them clarity and confidence to put their ideas into practice on their journey they will have to take to get there.

SEMINAR ON NBA

A seminar on NBA was organized in the Seminar Hall of DBCE on 3rd Jan 2018 for faculty members. The program began with a talk on "How to become an effective teacher" by Rev. Fr. Kinley D'Cruz He emphasized on listening and teaching skills necessary for a good teacher. He also laid stress on strategies to improve the quality of teaching.

Prof. Ajit Salunke, HOD, Mechanical Department gave a detailed presentation on Evaluation Guidelines in NBA and assessment criteria.

Prof Roseline Fernandes delivered a session on CO-PO Mapping and Course Outcome Attainments. Various NBA formats prepared by IQAC team were explained by Prof. Manisha Faldesai and Prof. Amrita Naik. Prof. Sweta Morajkar gave a brief introduction of a presentation software Prezi and Endnotes. Prof. Nadya Barretto compered the event.

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