FLASH

Electronics & Telecommunication Engineering Departmental Newsletter

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VISION

To evolve into a Holistic Learning Hub that moulds technologically proficient engineers in the field of Electronics and Telecommunication; enhancing the global industry and society with Integrity, Ethics and Professionalism as envisaged by Don Bosco.
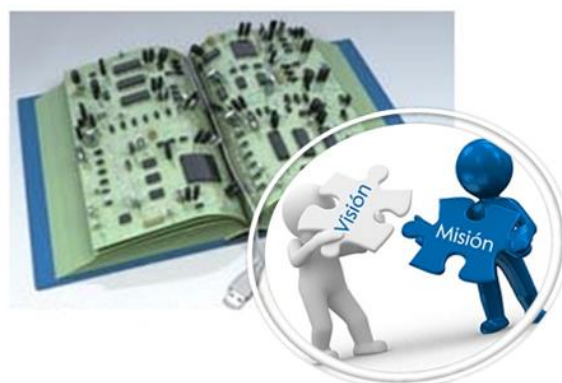
MISSION

- To impart education abreast with the advances in technology and transform students into globally accepted professionals.
- To foster networking with all stakeholders for promoting technical innovation, research and entrepreneurship.
- To encourage extra-curricular activities and instil high levels of work ethics and responsibility for a better society.

DEPARTMENTAL DETAILS

The Department has well qualified and experienced faculty in the areas of Electronics & Communication, VLSI, Embedded, Signal Processing, Automation and ControlEngineering. The Department offers Bachelors of Electronics & Telecommunication Engineering programme, with total number of 60 seats in the 1st year and 12 seats for lateral entry into the second year.

The department has been organizing various programs to enhance the Industry -Institute interaction through field visit and workshops.

Every year students of Third year and Final Year are exposed to Industry through internship programme of 1 month duration for industry experience.

Department has 10 fully functional Laboratories as listed below, along with the different Softwares.

- OSCAD
- MAGIC
- LabVIEW

> **LABORATORIES**
- Electronics Engineering
- Power Electronics and Control Systems
- Devices and Circuits
- Communication Engineering
- Microprocessor
- Electrical Engineering
- Electrical Technology
- Digital Systems and Electronic Instrumentation
- Signal Processing Lab
- Advanced Communication Lab

> **SOFTWARE**
- MATLAB
- Xilinx 14 version

STUDENT'S CORNER

Don Bosco Electronics and Telecommunication Society (DBEATS) 2017-2018

The 6th installation of DBEATS (Don Bosco Electronics and telecommunication Society) Council was held on 4th August 2017 at 10.00 a.m in the college Auditorium. The Chief Guest for the function was Dr. M.V. Ramesh, Scientist at NCAOR. The occasion was graced by the presence of our Director, Rev. Fr. Kinley D'Cruz, Principal, Dr. Neena Panandikar, Head of ETC Department, Prof. Michelle Viegas, DBEATS coordinators, Prof. Melba D'souza and Prof Deron Rodrigues.

The Ceremony commenced with the lighting of traditional lamp and a prayer song. The report of DBEATS 2016-2017 was read by Prof. Melba D'Souza. Simultaneously a video of the events conducted during the past academic year was played. The DBEATS Council for 2017-18 was introduced by Prof. Deron Rodrigues. Thereafter the council members took an oath to work effectively towards the functioning of DBEATS.

Rev. Fr. Kinley D'Cruz in his address motivated the students saying that dirty or clean, crumpled or finely creased, we are still priceless. The worth of our lives comes, not in what we do or who we know, but by who we are.

The Chief Guest, Dr. M.V. Ramesh, was introduced by Ms. Rasika Patil (General Secretary-DBEATS) and invited him to address the gathering. In his address, the chief guest cited the importance of Electronics in Ocean and Antarctic Research, especially in ocean mapping, remote sensing, weather forecasting etc. He also briefed students about the various Electronic based Oceanographic instruments, SONAR, underwater acoustic transducers etc.

WORKSHOPS/SEMINARS/IN-HOUSE TRAININGS

TWO WEEK INTERNSHIP PROGRAMME ON PLC AND SCADA AND DESIGN OF MICROSTRIP PATCH ANTENNA AND MULTISIM SOFTWARE

As a part of the in house training programme two weeks workshop was conducted for the Third year Electronics and Telecommunication Engineering students in association with DBEATS from 3rd July 2017 to 14th July 2017 at Don Bosco College of Engineering, Fatorda .

The resource people for the first week were Mrs. Mayalin Noronha, Miss Grebean Alemao, Mrs. Avila Naik, Mr. Rajesh Gaonkar, Prof. Vishnu Rathod, Prof. Mohini Naik, and for the second week was Mr. Subodh Mone, Autotech, Mapusa.

The topics for **week 1** were as follows: DAY1: Positive Thinking and Interview. DAY 2:- Group Discussion. DAY 3:- Field Visit to NIO, Goa. DAY 4:- Corporate Culture. DAY 5:-Design of Microstrip Patch Antenna and Multisim software
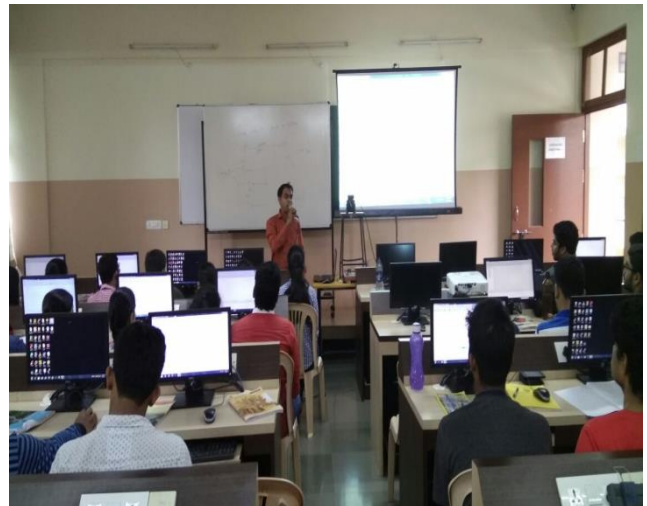
Week 2 was on PLC and SCADA. PLC (Programmable logic controller) is an industrial computer control system that continuously monitors the state of input devices and makes the decisions based upon a custom program to control the state of output devices and SCADA (supervisory control and data acquisition) is a computer system that is used to gather and analyse real time data. SCADA systems are used to monitor and control a plant or equipment in industries such as Telecommunications ,water and waste control, energy , transportation etc.

In this workshop students learnt the PLC and SCADA Technology. They were given description on various components and areas related to PLC. Students were taught how to program PLC using DELTA WPL Software (Ladder programming). Wonderware software (intouch) was used to program SCADA. During this one week course numerous programs were written based on Industrial applications.

The whole internship programme was co-ordinated by Prof. Trima P. Fernandes e Fizardo and Prof Melba Lira D'Souza.

ONE DAY WORKSHOP ON ARDUINO

The Department of Electronics and Telecommunication Engineering in association with IETE STUDENT CHAPTER conducted a one day workshop on "ARDUINO" on 12th August, 2017 for the third year students of Electronics and Telecommunication Engineering branch. A total of 45 students participated in the workshop and enriched their knowledge and skill in arduino. The resource persons were Mr Myron and Miss. Cecilia

The main objective of this workshop was to upgrade the skills of the students and to provide them a common platform to explore the use of arduino and its application using the arduino software.

The following areas were covered with hands-on exposure to 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 Vishnu Rathod co-ordinated the workshop.

ONE DAY WORKSHOP ON NETWORKING – A Practical Approach

A one day workshop was organized for the students of Final Year Electronics and Telecommunication Engineering, titled, "Networking: A practical Approach" on 12th August 2017 .The Resource Person for the workshop was Ms.Darshata Naik , ETC Department from RIEIT Shiroda. The organizer for the workshop was Asst. Prof. Vidhya.D.S. and Ms. Mohini Naik from Electronics and Telecommunication Department. The Cisco Packet Tracer hands-on session were carried out. The topics which were covered during the course are: Brief knowledge about the basic concepts of networking, Access Control Lists, Serial point to point protocols, frame relay, Nat,

Pat, Router on stick. The workshop was successful students found it useful, as it helped them, how to use design different network components and configuration.

TWO DAY WORKSHOP ON MATLAB Programming

A two day workshop titled, "MATLAB Programming for Engineers" was conducted for SE-ETC students on 8th July 2017 and 9th September 2017. Workshop was conducted by Prof. Deron Ray Rodrigues and Prof. Yeshudas A. Muttu.

On the first day, students were introduced to MATLAB programming environment and the four frames of MATLAB window. Students were then acquainted with the various toolboxes of MATLAB and real time applications of MATLAB. This was

followed by introduction of the basic commands, built-in constants and functions, writing simple script file, decision making, use of if statements, switch case, while loop, for loop, and nested loops. Various data types were introduced too. Students were familiarized with operations on vectors, matrix, arrays and special arrays. In the afternoon session; students were given hands on training in MATLAB Programming.

On the second day, students were introduced to plotting of graphs, bar charts, making plots more informative, drawing multiple functions on same graph, use of subplot and linspace functions. The session also provided the students, knowledge about generation of signals in MATLAB, audio processing and image processing on MATLAB. The entire session was very interactive and the students were demonstrated with various programs related to signal processing.

ONE DAY WORKSHOP ON LabVIEW

To meet Industry goals and requirements the ETC Department in association with DBEATS conducted a one day workshop on **"LabVIEW"** on the 23rd September 2017 for the third year students. A total of 29 students attended the workshop

The main objective of this workshop was to upgrade the skills of the students and to provide a common platform to explore the usage of Virtual Instrumentation and Design aspects using simulation with the help of NI LabVIEW.

The workshop commenced with a brief overview of LabVIEW and its applications. Hands-on exposure to the LabVIEW software which involved coding for Mathematical operations, Digital Logic using Boolean gates, FOR Loops with various examples, Shift Registers and its applications, Design of Arrays with examples, Conditional While Loops, Practical system examples using Case Structures, Implementation of higher end computation using Formula Nodes, Hierarchical designing using Sub-VI.

The sessions were delivered by Prof. Flavia Leitao and Prof. Mathilda Colaco.

ONE DAY WORKSHOP ON Cayenne IOT

A one day workshop for the Second Year students titled, **"Cayenne IOT"** was conducted on 23rd September 2017. The Resource Person for the workshop was Mr. Shramik Sandip Salgaonkar, Design Intervention India Pvt Ltd.

The topics covered for the course are: introduction to IOT and cloud, creating a esp8266 web server to turn on LED, creating account on cayenne, Downloading cayenne app, adding esp8266 to cayenne, getting authentication code/token, uploading cayenne libraries, adding 1st cayenne code to esp8266 for accessing cayenne Dashboard, coding to take input from sensor and publish on cayenne cloud, adding triggers for input to do a particular output, scheduling an output at activate at a particular time, using virtual pins to add own custom features to cayenne dashboard,https://mydevices.com, https://www.hackster.io/contests/ESP8266.

The coordinators for the workshop were Prof. Vidhya.D.S. and Prof.Yeshudas. A. Muttu from the Electronics and telecommunication Department.

ONE DAY WORKSHOP ON ANALYSIS AND SIMULATION OF CONTROL SYSTEMS USING MATLAB

A one day workshop on "Analysis and Simulation of Control Systems using MATLAB" was organized on 28th October 2017 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 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.

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. 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.
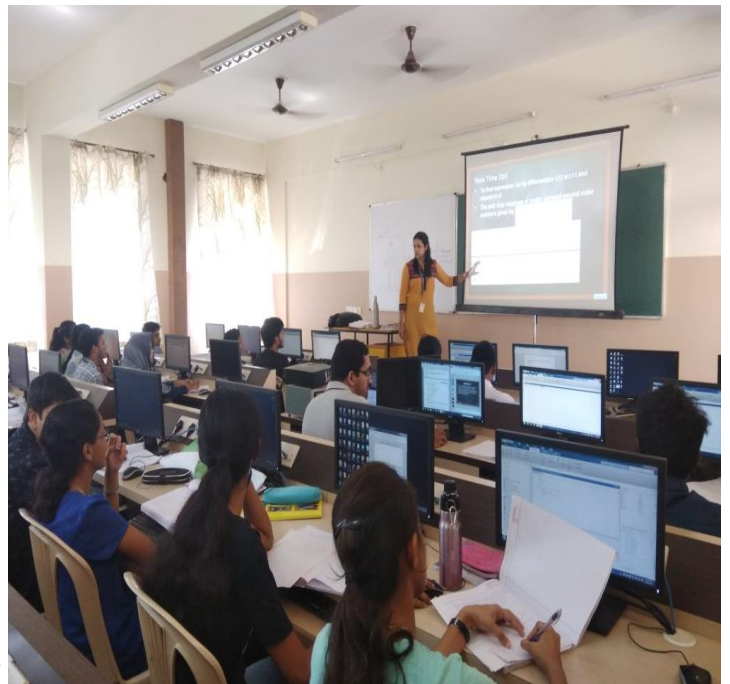
ONE DAY WORKSHOP ON HDL

A one day workshop for the Third Year ETC students, titled, "HDL" was conducted on 14th October 2017. The Resource people for the workshop were Prof.Vidhya D.S. and Mr.Zain Anwar Rajani, Alumni.

The topics covered during the course are: Introduction to Hardware Description Language, different modeling of digital circuits and observed an output using XILINX ISIM simulator tool.

The Co-ordinators for the workshop were Prof Vidhya.D.S. and Prof.Vishnu Rathod.

FIELD VISITS

Field Trip to NIO

The Third year students of Electronics and Telecommunication Engineering, of Don Bosco College of Engineering, Fatorda, went for a field trip to NIO, Panjim on 5th July 2017. The students were accompanied by Prof. Mathilda Colaco and Prof.Yeshudas Muttu.

The students got an opportunity to visit the archaeological findings and the entire marine related machines as well as non-living resource samplings. Dr.Anand Loka,Scientist at NIO,gave a talk on fields and jobs available for Electronics and Telecommunication Engineers at NIO.The students were also provided with information on Autonomous robots and machines(Like AUV and AVP) which are used in Marine research for checking various aspects like water level etc.

Field Trip to FM Instrumentation and Zuari Indian Oil Tanking Ltd

An industrial visit was organized for the students of B.E. ETC to "**FM Instrumentation, Ponda**" and "**Zuari Indian Oil Tanking Ltd**", on 27th September 2017.

The students first visited an industry, FM Instrumentation. Mr. Frank Fernandes, Manager of FM Instrumentation gave an overview of the entire manufacturing and assembly unit. Thereafter the students were divided into groups and were headed towards the workshop where X-ray beds and columns were manufactured. They were also briefed about the operation of the X-Ray machine, the main control unit of the bed which consisted of various electronic components and motors. The students were then shown the calibration lab which was divided into mechanical, thermal section and electro-thermal sections. The calibration of various measuring instruments such as pressure gauges, pressure switches, clamp meters, multi-meters, RTDs and thermocouples was explained.

Post lunch, the students visited a fuel storage plant, Zuari Indian Oil Tanking (ZIOL). Mr. Sachin Naik and his colleagues welcomed the students and briefed them on the safety measures to be undertaken in this highly hazardous area. The plant consisted of six storage tanks which were either floating roof type or dome shaped roof types. Some of the students even got an opportunity to go on the top of the floating roof tank where they were briefly explained the various operations conducted during the loading and unloading and the precautions taken to prevent collapsing of the tank from weather conditions as well as evaporation of the fuel. The main fuel supply comes by ship to the Mormugao port and is supplied to the plant via pipelines. Since the supply is not continuous, pigs are used to clear the residue fuel before new supply. The process of loading of petrol, diesel into the tankers via feeders using access cards was explained. At the control room, the students were given an overview of how the whole plant is operated with the help of PLC system.

The Education Committee of Goa Chamber of Commerce & Industry (GCCI) and Directorate of Technical Education (DTE) jointly organized the Second Edition of SELECT PROJECTS PRESENTATIONS by students of Engineering Colleges of Goa on Friday, 03 November 2017 at DTE – Porvorim.

Don Bosco College of Engineering, Fatorda won the THIRD PLACE amongst the 40 project groups from Goa College of Engineering, Padre Conceicao College of Engineering, Shree Rayeshwar Institute of Engineering & Information Technology and Agnel Institute of Technology and Design. Eight projects groups from the college were selected for the presentations and the details of the project group that won the third place are mentioned below:

Name of the Project: Wireless Patient Monitoring System
Project Guide: Prof. Melba D'Souza
Department: Electronics & Telecommunication Engineering
Project Group: Mr. Royston Dias, Mr. Abhishek Pednekar, Mr. Mahendra Gadiyar,
                                         Mr. Nihar Bhat, Mr. Prabodh Kolambkar

FACULTY INITIATIVES

Student's Events: Papyrus, Electrovision, Citronix & Quizzard

On the occasion of 6th DBEATS Council Installation, four events namely Papyrus (Poster making), Electro vision (One minute technical talk), Citronix (Circuit designing) and Quizzard (Technical and Non-technical Quiz) were scheduled for the day. Students from all years actively participated in these events.

In Poster making, students put their thoughts on the paper on various technical topics such as E-waste, Smart Home, and Electronic Safety etc. which showed that every mind has a creative insight.

In electro vision, the students were spontaneous and confident on the Mike on various topics related to electronics such as latest technologies (4G/5G, Li-Fi, Wi-Fi, VOLTE), applications of electronics in medicine, agriculture, robotics etc.

In Citronix, the students designed application based digital and analog circuits.

In Quizzard students showcased their technical knowledge and knowledge beyond academics.

The entire event was coordinated by Prof. Melba D'souza and Prof Deron Rodrigues.

CERTIFICATIONS/ AWARDS

Prof. Michelle Araujo e Viegas was awarded the "Devang Mehta Award" for the "Best professor in Electronics and Telecommunication Engineering" at the Regional and National level.

PAPER/ JOURNAL PUBLICATIONS

➢ Prof. Flavia Leitao published a paper titled "INTELLECTUAL PROPERTY (IP) PROTECTION USING WATERMARKING AND FINGERPRINTING TECHNIQUES" **in IEEE Xplore**, July 2017, which was presented in the 2nd International Conference on Applied and Theoretical Computing and Communication Technology (iCAATcct-2016), technically sponsored by IEEE Bangalore Section held at SJB Institute of Technology, Bangaluru, Karnataka, during 21-23 July 2016, ISBN: 978-1-5090-2399-8

WORKSHOPS/SEMINARS/EXPERT TALKS CONDUCTED

➢ Prof. Mohini Naik conducted one day workshop on "Design of Microstrip Patch Antenna and Multisim software" for the students of TE-ETC on 7th of July 2017.
➢ Prof. Vishnu Rathod organized one day workshop on "ARDUINO" for the students of TE-ETC on 12th of Aug 2017.
➢ Prof. Vidhya.D.S. and Prof. Mohini Naik organized one day workshop on "Networking" for the students of BE-ETC on 12th of Aug 2017.
➢ Prof. Deron Rodrigues and Prof. Yeshudas A. Muttu. Conducted two day workshop on "MATLAB Programming" for the students of SE-ETC on 8th July and 9th Sept 2017.
➢ Prof. Flavia Leitao and Prof. Mathilda Colaco conducted one day workshop on "LabVIEW" for the students of TE-ETC on 23rd Sept 2017.

- Prof. Vidhya.D.S. and Prof.Yeshudas. A. Muttu organized one day workshop on "Cayenne IOT" for the students of SE-ETC on 23rd Sept 2017.
- Prof. Anisha Cotta conducted one day workshop on "Analysis and Simulation of Control Systems using MATLAB" for the students of TE-ETC on 28th Oct 2017.
- Prof. Vidhya.D.S. Prof.Vishnu Rathod organized one day workshop on "HDL" for the students of TE-ETC on 14th Oct 2017.

WORKSHOPS/SEMINARS/EXPERT TALKS ATTENDED

- Prof. Anisha Cotta attended a one week ISTE Workshop on "MSP430, TIVA-C Series and IoT Integration" organized by department of Electronics and Telecommunication Engineering, Padre Conceicao College of Engineering, Verna from 3rd to 7th July 2017.
- Prof. Michelle Viegas, Prof. Trima Fizardo, Prof. Kimberly Morais, Prof. Anisha Cotta and Prof. Melba Dsouza, attended a one week AICTE -ISTE Workshop on "Statistical Technique and tools in Research methodology" organized by department of Science and Humanities Engineering, Don Bosco College of Engineering from 6th to 10th Nov 2017.
- Prof. Kimberly Morais attended a two day Workshop on "Android Botix" organized by Goa College of Home Science from 29th to 30th Nov 2017.
- Prof. Flavia Leitao and Prof. Mathilda Colaco attended a two day Workshop on "SPACE – Security Privacy and Applied Cryptographic Engineering" organized by department of Science and Humanities and Computer Engineering, Don Bosco College of Engineering from 13th to 14th Dec 2017.

Community outreach

Electronics and Telecommunication labs and lab facilities were shared to the ITI students during the semester break, to enhance their skills.

E-Cell

In Order to nurture the talent of the students thereby enlightening them in various aspects of industrial activity and foster innovation in different sectors of economy .The Innovation and Entrepreneurship Cell of Don Bosco College of Engineering organized a one day Entrepreneurship Development Program on 9th September 2017. A total of 87 students attended the event.

The first session "Technical scopes in Innovation and startups" by Dr.Fraddry D'souza provided a complete picture of efficient utilization of energy, sustainable use of natural resources, large-scale adoption of renewable energy technologies, & reduction of all forms of waste that would ensure sustainable development.

The second session "Myths of Entrepreneurship :How to navigate the journey" by Mr. Gilbert Mendes gave a brief insight of entrepreneurship in terms of self-assessment , self-reflection , SWOT analysis, communication skills, motivation, decision making and leadership.

The event was coordinated by Prof. Mathilda Colaco of the ETC Dept. and the Training and Placement Officer, Mr. Rajesh Gaonkar.

TRAINING & PLACEMENT

The final year students of Don Bosco College of Engineering had the opportunity of part taking in a one day Career Guidance Program held in the college premises on 21st September 2017.

The guests were members of the 'Board of Apprenticeship Training (BOAT)- Western Region' who were enthusiastic to create awareness amongst the students about 'The Apprentice act of 1961'.

The Chief guests for the event were Dr. P H Sawant – Chairman of BOAT and Shri P N Jumle- Director of BOAT. Also present was the Director Rev. Fr.Kinley D'cruz and the Principal Dr.Neena Panandikar of Don Bosco College of Engineering.

The Director of BOAT, Shri P N Jumle took the podium next as he spoke to the students of the upcoming difficulties that lie ahead after they graduate. He cautioned that just earning an engineering degree isn't the same as what it was many years back and urged students to take up apprenticeship to be more job efficient.

Dr. P H Sawant the Chairman of BOAT then spoke to the students telling them of the importance of setting up personal goals in life and how it helps make their vision for the future clearer.

UPCOMING EVENTS

- ➢ In House training scheduled for BE ETC students from the 8th to 12th Jan 2018.
- ➢ IETE Events scheduled for SE, TE and BE ETC students.
- ➢ "Design and Analysis of Microwave filters and Patch Antennas" Workshop scheduled for BE ETC students on the 25th of Jan 2018.
- ➢ Expert lectures scheduled for the SE, TE and BE ETC students to get industry exposure.
- ➢ "PCB Design" Workshop scheduled for SE ETC students on the 27th of Jan 2018.
- ➢ "B.S.S Paper Presentation" scheduled for TE ETC students on the 10th of Feb 2018.
- ➢ "Project Management and Report Writing" Workshop scheduled for BE ETC students on the 10th of Feb 2018.
- ➢ "Signals and Systems" Workshop scheduled for SE ETC students on the 10th of Feb 2018.
- ➢ Field visits scheduled for the SE, TE and BE ETC students in various industries.
- ➢ "Electromagnetic" Workshop scheduled for SE ETC students on the 24th of Feb 2018.
- ➢ Technical Event scheduled for ETC students on the 26th and 27th March 2018.
- ➢ "Digital Image Processing" Workshop scheduled for TE ETC students on the 13th of April 2018.
- ➢ Project Exhibition TECHNIX scheduled for ETC students on the 26th of April 2018.