DEPARTMENT OF ELECTRONICS AND COMMUNICATON

Alva's Institute Of Engineering & Technology, Mijar,Moodubidire-574225

Yashaswi 2k19-20

VISSION OF DEPARTMENT

Centre of Excellence to Empower the young minds in the field of Electronics and Communication Engineering with research focus and skill development through Transformative Education catering to the needs of the Society.

MISSION OF THE DEPARTMENT

- To create Learning Environment to enable the Students for Excellence in the field of Electronics and Communication Engineering.
- To Empower the Students with necessary Skills for Solving the Complex Technological Problems.
- To Inculcate Research Culture among Teaching-Learning Group by guiding them towards Research Activities to bridge the gap between Industry and Academia.
- By Imbibing the students with human values and ethics through transformative education and make them socially responsible proffesionals.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO'S)

PEO1: Apply Mathematical, scientific and Engineering fundamentals for problem solving.

PEO2: Expose to Emerging Technologies and pursue higher studies or do research.

PEO3: Become Competent and Employable with necessary skills.

PEO4: Inculcate Professional and Ethical attributes and contribute to Society as responsible Citizen.

PROGRAMME SPECIFIC OUTCOMES (PSO'S)

PSO 1: Understand and apply the principles of Science and Engineering in the field ofElectronics and Communication.

PSO 2: Ability to design and implement systems using the concepts of Analog & Digital Electronics, Communication & Networking, Signal Processing, Embedded Systems &Semiconductor technology to solve complex problems.

PSO 3: Develop proficiency to use modern Hardware & Software tools in the area of Electronics and Communication Engineering.

MESSAGE

  Electronics and Communication, One of the widely renowned branches in the field of Engineering, have proved time and again, that they play a pivotal role in both the developing and well-being of our society in the fast paced human life. E&C branch is concerned with the design, development, manufacture and application of electronic devices, circuits and systems. The department has well-qualified and experienced faculty out of which four are Doctarates, seven of them have persued Ph.D and remaining are Post-Graduates. Faculty members have published technical papers in international and national journals and conferences.

  I am glad to release the department E-News letter "Yashaswi 2k19-20 " for the odd semister.

DR. D.V.MANJUNATHA
HOD ,DEPT OF ECE

ECE FAMILY

TECHNICAL TALKS

On - "LeveragingOpen Source Opportunities to Build a Successful Career"

The Department of ECE organized the technical talk for the students of fifth semester on "Leveraging Open Source Opportunities to Build a Successful Career" on 17th August 2019 was delivered by Dr. Mohith P. Tahiliani, Asst. Professor, Dept. of CSE, NITK Suratkal. The inaugural ceremony was graced by the presence of the Head of the Department Dr. D V Manjunatha and Dr. Richard Pinto.

The technical talk focused on the following key points:

- Introduction to Google Summer of Code (GSoC) and Google Code-In (GCI).
- Briefed about participation of ns-3 in GSoC and GCI.List of open source internship programs.
- GSocSummer Internship Programme for University students.
- Google Season of Documentation:Google's new initiative.
- Role, opportunities and benefits for students by these internships.

On - "Electronics in Automotive Engine Systems"

The Department of ECE organized the technical talk for the students of fifth and seventh semester on the topic "Electronics in Automotive Engine Systems" on 31st August 2019. Mr. Rakshith C S, Senior Software Engineer, Continental Automotive Components Pvt. Ltd, Bangalore was the facilitator.

The technical talk emphasized on the following key point:
- Electronics systems used in vehicles, including engine management, ignition, valve control.
- Engine control unit(ECU) which controls functions such as fuel injection rate, throttle control, emission control.

- Need for fast response, machine integration and meeting emission standards.
- Latest Innovations and Future of Automotive Electronics in the Car.
- Also briefed about steering control,navigation system and antilock braking.
- Need of signal processing technology and overview of DSP processors used in automotive systems.

On - "Embedded Systems in Defense and Aerospace Sector"

The Department of ECE organized the technical talk for the students of seventh semester on the topic - "Embedded Systems in Defense and Aerospace Sector" on 6th september 2019. The talk was delivered by Mrs. Ashwini Srinivas, Park Controls and Communications, Bangalore.

The technical talk emphasized on the following key point:
- Introduction to control Systems in Aero Engines, Military tank, Airborne Generators.
- RF Telemetry Transmitters and Power Amplifiers with programmable power output.

- Airborne filed programmable instrumentation systems.
- End to end telemetry acquisition and control system consisting of onboard and ground system for ammunition and ballistics testing.
- Telemetry acquisition and processing systems for testing unmanned aerial vehicle.
- Guidance and control system for laser guided bomb.
- Precision time reference system for Missile launch and control system.

On - "Exposing the web security vulnerabilities"

The Department of ECE in association with IETE Student Forum organized the technical talk for the students of fifth semester on the topic - "Exposing the web security vulnerabilities" on 13th september 2019 and the talk was delivered by Mr. Narayan Iyer, an independent consultant & trainer on Computer Security.

The technical talk emphasized on the following key point:
- Briefed on various security vulnerabilities that exists today.
- How companies are coming with bug bounties to improve their product security.
- Demonstration of SQL injection and Cross Site Scripting (XSS).
- Various career prospects including some of the core EC projects, with example of huge growth in satellite communication projects as planned by Amazon &SpaceX.

On - "Journeyof a Chip – An overview on ASIC design flow"

The Department of ECE organized the technical talk for the students of fifth and third semester on the topic - Journey of a Chip – An overview on ASIC design flow and the talk was delivered by Mr. Ajay G, SoC Design and Methodology Engineer,Intel Technologies, Bangalore. The formal inauguration was graced by the presence of Dr. D V Manjunatha, Head, Dept. of ECE, AIET.

The technical talk gave an insight on the following key points:
- A vast footprintm such as Robotics, Media and

Entertainment, Data centers, Autonomous driving, AI, which are driven by semiconductor technology.
- Semiconductor ecosystem.
- Challenges faced in Semicon industry, EDA tools used, tech capabilities etc.
- Quantum computing, alternates to silicon such as molybdenum & germanium, AI driven lithography.
- Frontend implementation of ASIC design flow such as conception of design, modelling through RTL codes, Synthesis and DFT

- Backend implementation such floor planning, power grid plan, placement, Clock Tree Synthesis(CTS) and routing.
- Optimization goals such as Balanced performance, low power consumption and reduce cost.
- Finally, the talk concluded by presenting a memento to the guest as a token of gratitude, for sharing his domain expertise with the students and staffs.

CERTIFICATION COURSE

On - "HAM AMATEUR RADIO"

This workshop on "HAM Amateur Radio" was an interesting workshop held for 130 students of Electronics and Communication Engineering department on 18th November 2019 to 20th November 2019. Ham (Amateur) Radio is a scientific hobby, adventurous sport & second line of Communication when all other means of communication fails.

Today there are thousands of hams who are enthusiastic about Ham Radio and use various methods to communicate with their counterparts around the world. Groups, individuals and educational institutions are all striving to acquire radio technology, as they are eager to improve their skill over a wide spectrum of fields. Hams are from different walks of life. Ham family consists of students, educationists, scientists, engineers, doctors, lawyers, technicians, retired persons from various fields, house-wives, Film stars, Top-officials, Ministers, Mps and so on.

This workshop was conducted by Dr. S. Sathyapal , Director of Indian Institute of HAMs, Karnataka Chapter.

Highlights of the Workshop:
- MOU was signed between Indian institute of HAM and AIET.
- Exposure to HAM Radio clubs in India and throughout world.
- Discussed importance and applications of HAM Radio club member.
- Design of Transmitter and Receiver antenna.
- Explored different modulation techniques.
- Discussed different modes of communication with respect to HAM Radio.
- Explored about conducting scientific experiments in radio techniques - propagation studies.
- Discussed details about HAM License exam.
- Provided details about HAM exam.
- Field work at shobhavana to identify hidden transmitter direction

On - "PCB Designing"

A long term plan to conduct a course on fundamentals of PCB with Electronics Forum. The objective of this course was to make students learn all the steps involved in PCB development from basics. The entire course was framed in a way to make it more interactive and creative learning oriented. Also this time 7 students who are members of Envision Lab and have been working on PCB were made as team leads.The course was held on 4rth and 5th of october 2019 with a total number of 53 students excluding the mentors .

Course on Fundamentals of PCB:

PCB is an integral part of any electronic device. So PCB technology has been used from quite some time and has evolved over the time. Now an ordinary PCB consists of more than 4 layers.

Building PCB involves design thinking and methodical approach. So this entire course was concentrated on the design process and stages involved in the PCB designing starting from EDA tools to CAD tools.

For this course KiCad software version 5.1.5 was used as its one of the strong and widely used opensourse tool for PCB designing.

Course Structure:

a. The main intention is to introduce the engineering students to the steps and
process of PCB developments.
b. Entire course is divided into 3 days with a 2 hour examination.
c. Each day will have specific levels and training procedures.
d. The entire course will be focused on hands on practical exposure on fundamentals of PCB with EDA tools.
e. The focus is directed towards the industrial approach, schematic library, footprint library & PCB development.
f. Upon successful completion the student will receive the Certificate of completion.