

Details For Annual Report 2017-18

“ ELECTRONICS & INSTRUMENTATION ENGINEERING ”

❖ Department statistics

- Faculty strength : 24
- Student strength : 421
- Year of establishment : 2008

❖ About :

Electronic systems and Instrumentation has been interwoven and intertwined into every aspect of daily life such as home appliances, medical gadgets and many more to add. A successful Electronics Instrumentation Engineer is essential for selecting, installing, calibrating, and maintaining instrumentation used in various industries. Electronics Instrumentation Technology is the study of specialized instruments to measure monitoring and control critical processes found in automated industries. Our Department of Electronics and Instrumentation was established in 2008 with an intake of 60 students and was subsequently increased to 120 in the year 2009. We have highly qualified and dedicated teaching faculty members out of which many are pursuing Ph.D. The Department has sophisticated Laboratories to impart quality Technical education which includes, Transducer and Measurement Lab, Industrial Instrumentation Lab, Process Control Lab, Instrumentation System Design Lab, Electronics circuits and Devices lab, Microprocessor and Microcontroller Lab, Virtual Instrumentation Lab.



❖ Academic Performance of the Students

Our students have secured an overall Pass % of 62.71% during 2017-18(odd) Anna University exams. Our department has secured 12 Anna university ranks for the 2012-16 batch. 87 students out of 100 students 2013 – 17 batch are eligible for convocation. 14 students are placed out of 63 in various companies like VVDN(1), Wipro(1), Infosys(10), Mind tree(1), Cap Gemini(1), Dual placed(1)

❖ Milestone Events

- MoUs signed - nil

- Conferences / Seminars / Workshops /FDP/ Guest lecture organized
- **VALUE ADDED COURSE ON "PLC, SCADA AND DCS" from 10.07.17 - 14.07.17**

The Speaker for the Session was Mr. Melhin Prabhu, Project Engineer, Vi Micro Systems Chennai. The various topics covered are introduction to PLC, SCADA & DCS, programs in PLC, SCADA & DCS, real time applications on PLC, SCADA & DCS



- **SDTP ON "REVERSE ENGINEERING" from 08.01.2018 TO 19.01.2018**

The department of Electronics and Instrumentation Engineering conducted a seven day Training Program on REVERSE ENGINEERING .The Training Program was a part of Knowledge development of student. Training Program organized by the department.

The purpose of the workshop was to give students knowledge about Reverse Engineering and its scope in industries. The workshop was conducted for seven days and 45 students participated in the session. We were also given opportunity to make our own projects with the help of trainers

TRAINING MODULES:

- 1.Data analysis
- 2.Tear down
- 3.Benchmarking
4. Photoshop
- 5.Hands on session



DAY 1:

The workshop began at 8.30 AM. We were given a warm welcome by the trainers. We were given an introduction about the scope of reverse engineering and its applications in industries. We were also taught about safety and its importance. We also gained some technical knowledge. In the afternoon session, we were divided into seven teams. Each team were given a device and we analysed its appearance and its dimensions. We also played some games which helped us to know the importance of teamwork. At the end of day 1 we were given a task to submit a report on active and passive components the next day. The day 1 session created an impact on us to learn more about reverse engineering



DAY 2:

The second day session began at 8.30 AM and it was an amazing session. We recalled all the safety instructions and they also taught about punctuality and its importance. Then we did data analysis on various parts of a car by surfing through the internet. We gained knowledge about how to do a comparative study of these parts. It was an informative session. The trainers gave reviews on our reports.

In the afternoon session, we were shown some videos on making electronic projects using simple components. We were also asked to write details of those components. They also

encouraged us to come up with our own ideas for doing mini projects. The day two of the workshop came to an end with the reviews given by the trainers on our reports.



DAY 3:

On day three we did teardown. We were given various objects like TV remotes, mobile phones and we analysed them. Tools were also given to us to dismantle those objects. This session helped us a lot to know more about the objects used in our day to day life. We also learnt about the importance of team work in this session. In the afternoon session, our teardown reports were reviewed by the trainer. An interactive session between the team members was also held. Each of us was asked to tell about our team members. It helped us to know more about our teammates and also the other students. The day three of the workshop was an interactive one and it helped us to overcome our fear.



DAY 4:

On day 4 we learnt a lot about the new technologies in cars and its importance in our lives. The concepts were clearly explained to us and few videos were also shown. They also conducted a session on Photoshop and they taught us the basics of it. We were also allowed to work on it. In the afternoon session, we played few games which helped us to realise the importance of communication and teamwork. They also motivated us. They also gave us ideas for our development.



DAY 5 AND DAY 6:

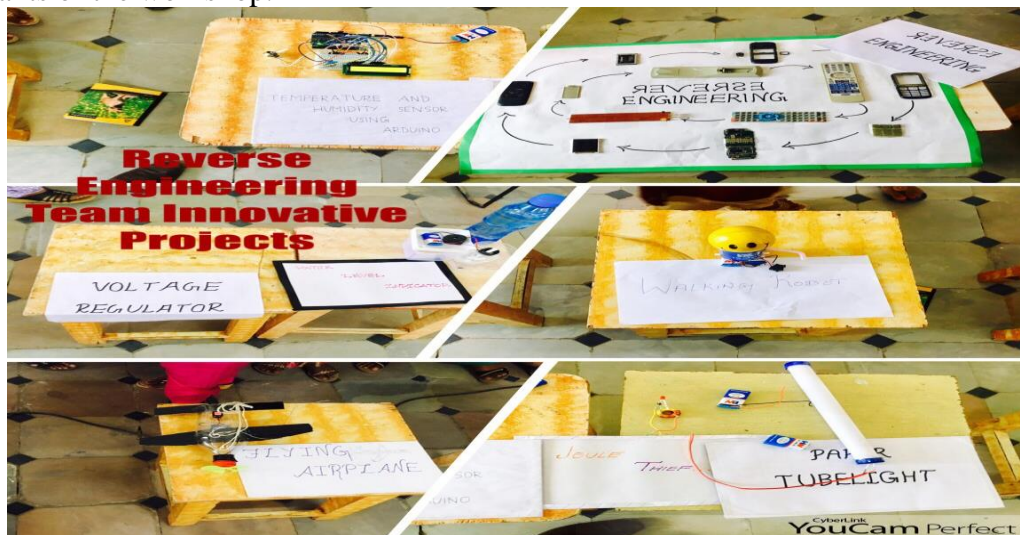
Day 5 and 6 was a complete practical session. Each team were given a project and they also provided us with required components. The trainers helped and encouraged us to do the projects. At the end of day 6 we did many projects for our department like LED display board, soldering iron using pencil, voltage regulator, continuity tester, drilling machine, glue gun. The day 5 and 6 of the workshop helped us to gain practical knowledge and encouraged us to do our own projects.

The REVERSE ENGINEERING workshop was a very useful one and encouraged us to learn more about the core industries. We also learnt about the importance of teamwork and communication and punctuality. We are grateful for our college and our department for arranging the workshop.



PROJECT EXPO ON 12.02.18:

The various projects done by the II year students were displayed and explained to all the non-participants of the workshop.



○ SDTP ON "PROCESS CONTROL AUTOMATION AND CONTROL" from 05.02.2018 to 13.02.2018

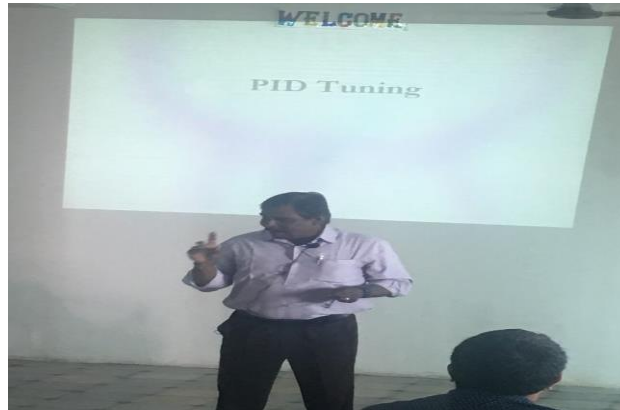
The Student and Staff Development Training Program on “Process Instrumentation, control and Automation” aimed at providing a great exposure to students about the real-time process and control methods taking place in industries. It is a seven days training program scheduled from 05.02.2018 to 13.02.2018 which includes topic like Process Control, Control System, Industrial Instrumentation, Transducer and Sensors handled by Academic and Industrial Professionals.

On the first day, 05.02.2018, Mr.Sundarasekaran who is a retired General Manager of MFL company stands as a skilful person in instrumentation gave a clear view to the students about instrumentation in automation and boiler control methods. On 06.02.2018, he explained about the control actions of PI, PD and PID control modes which helped them in controlling and working of controllers. On 07.02.2018, Dr.M.Mythily who is an Assistant Professor of Anna University, MIT campus briefed about the control of industrial process and industrial instrumentation. Ms.Lavanya.M , an Assistant Professor of KCG college of engineering taught about the special controllers which ended up as an interactive session. On 08.02.2018, Mr.Murali gave an informative session on recent and advanced instruments in oil and gas field. Mr.SriramPrasanna who is working in FL Smidth Private Ltd, provided an insight to the students involving selection of instruments and control panels. On 09.02.2018, Mr.Arun Rajesh R and Mr. Kalaiselvan G who are serving as Assistant Professors of Jeppiaar Engineering College taught about the design and fabrication of PID controllers and also controlling of PID controllers using MAT lab simulations. Mr.V.S Sreejith who is principal engineer of Saipem industry explained about the automation process involved in industries. On 12.02.2018, the students were taken for an Industrial

Visit to HP Valves and Fittings Private Ltd, which stands as one of the pioneers of instrumentation. The students were able to gain knowledge about the various steps involved in production and manufacturing of valves and fittings. On the final day, 13.02.2018, Mr. RavivarmanRajendiran CEO of “Dreamerindia Innovations” provided an interesting session of working of PID controllers using Arduino.

Day 1: 05.02.2018

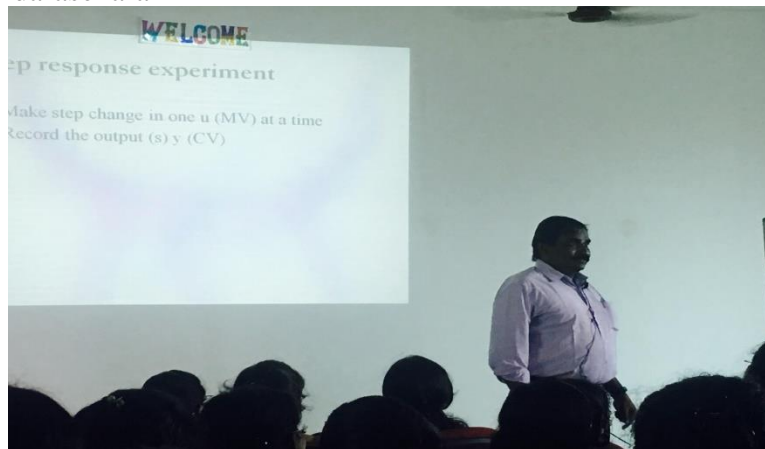
Speaker : Mr. D. Sundarasekaran



Mr.D. Sundarasekaran is a skilled person in instrumentation automation and boiler control methods who has around 39 years of experience including both industry and academic. He has completed both National and International technical training. He taught about the process dynamics, automation in process control, modelling methods and mathematical model of flow, level, pressure and thermal process.

Day 2: 06.02.2018

Speaker: Mr. D. Sundarasekaran



He gave a brief overview about the final control element, types of valves and control actions of PI, PD, PID control modes. He also gave an idea to the students to make their own projects and mini-projects using controllers.

Day 3: 07.02.2018

FN Speaker :Dr. M. Mythily



Dr.M.Mythily is an assistant professor of Anna University, MIT campus. She is an expert in modelling and control of industrial process and instrumentation. She has published many International journals as well. She detailed about the designing of controllers and their processes. She also gave an overall view about the basics of transducers in engineering.

AN Speaker: Ms. Lavanya M



Ms. Lavanya M is an assistant professor of KCG college of technology. She is a very skilled and industrial person in automation and process control. She explained about the special controllers and also the software used in instrumentation. She also gave a great exposure to core industries.

Day 4: 08.02.2018

FN Speaker: Mr. Murali



Mr.Murali is a diligent and result- oriented professional with 8+ years of overall experience, an expertise in the field of engineering in the spectrum of instrumentation and control design. He spoke about the recent and advanced instruments in oil and gas field which also included automation in oil industries.

AN Speaker: Mr.SriramPrasanna



Mr.SriramPrasanna is an assistant manager of electrical department-cement project engineering. He is currently working in FL Smidth Private Ltd, Chennai. He is a well-known for his execution, strategic thinking and mentoring skills. He gave knowledge about the selection of instruments and control panels for cement plants.

Day 5:09.02.2018

FN Speakers:Mr.Arun Rajesh R and Mr.Kalaiselvan G





Mr. Arun Rajesh R and Mr. Kalaiselvan G are serving as assistant professors in Jeppiaar Engineering College. Mr. Arun Rajesh detailed about the design and fabrication of PID controllers and Mr. Kalaiselvan taught about controlling of PID controllers using MATLAB simulations. The students were motivated in designing and working of controllers.

AN Speaker: Mr. V S Sreejith



Mr. V S Sreejith is a principal engineer in Saipem industry. He is in-charge for tools, training and development and also a part of Reliance project. He detailed about the various process and techniques involved in industrial automation and controlling methods.

Day 6: 12.02.2018

Industrial Visit : HP Valves and Fittings, Private Ltd, Ambattur, Chennai.



Mr. S. Harichandran is the Managing Director of HP valves and fitting company. They stand as a pioneer in the manufacture of instrumentation. It provided a great insight to the students in gaining knowledge about various processes involved in manufacturing of valves and fittings. It ended as an informative and productive one in learning things practically.

Day 7: 13.02.2018

FN Speaker: Mr. RavivarmanRajendiran



Mr. RavivaramanRajendiran is the CEO of a company named “Dreamerindia Innovations”. It mainly aims at outreach of embedded systems and its software development. He briefed about the working of PID controllers using Arduino and the students were encouraged to develop projects using Arduino.

AN Session:





The session thus ended with a closing ceremony of issuing certificates to the internal and external participants by the principal and Head of the Department.

Thus, the SDTP served as a strong foundation of process control for the students in providing them with a great exposure. It helped them to gain overall knowledge about the different types of controllers and valves used in real-time applications and also it gave an idea to implement it in their own projects.

○ **Guest lecture on “ PROCESS CONTROL INDUSTRIES” on 4th JULY 2017**

The Speaker for the Session was Ms.Sreela, Yokogawa Chennai. She discussed on the various controlling parameters in process control designing parameters. The points discussed by her are summarized below. Automatic process control in continuous production processes is a combination of control engineering and chemical engineering disciplines that uses industrial control systems to achieve a production level of consistency, economy and safety which could not be achieved purely by human manual control. It is implemented widely in industries such as oil refining, pulp and paper manufacturing, chemical processing and power generating plants. There is a wide range of size, type and complexity, but it enables a small number of operators to manage complex processes to a high degree of consistency. The development of large automatic process control systems was instrumental in enabling the design of large high volume and complex processes, which could not be otherwise economically or safely operated.



○ **GUEST LECTURE on “AUTOMATION IN PROCESS CONTROL INDUSTRIES” on 27th JUNE 2017**

The Speaker for the Session was Mr. Naveen, General Manager, & Mr.Arjun M Warriar, Senior Engineer, MERIDIAN SCHOOL OF OIL AND GAS PVT LTD, Chennai.

TOPICS COVERED:

INTRODUCTION TO AUTOMATION & PROCESS CONTROL

MODELING & TUNING OF CONTROLLER

APPLICATION OF AUTOMATION IN MANUFACTURING INDUSTRIES



Mr. Naveen holds a Bachelor in chemical Engg, and he Started Working as General Manager - MERIDIAN SCHOOL OF OIL AND GAS PVT LTD, Chennai For past 6 months. He had 8 years of work experience in various industries. All the Third and Final year students of EIE were gathered in the Library Seminar hall. The informative speech delivered makes the students to interact with Mr. Naveen & Mr. Arjun M warrier throughout the session. His speech was highly realistic and stimulating. The session came to an end with the vote of thanks proposed by the student.

○ **Guest lecture on “ADVANCED BRAKING SYSTEMS” on 31.08.2017**

Mr. S.Balaji conducted a very interactive session with a lot of out-of-the-box ideas and new thoughts about automobiles. An expert in his field, Mr. Balaji gave us a lot of information about braking systems and innovative technologies that are being implemented in the automobile industry. The lecture was quite an active one with a lot of curious questions and interesting explanations. We learnt about a lot of new hi-tech features in automobiles nowadays and also of exciting possibilities in future cars. Some of the latest technologies pertaining to safety systems in cars were discussed. Towards the end of the lecture, a question-answer session was conducted wherein the students were encouraged to clear their doubts or ask questions. All-in-all, it was quite an inquisitive and bi-lateral session and we had a great experience during the lecture.



○ **Guest lecture on “CAREERS” on 03.07.2017**

The Speaker for the Session was Mr. L. VENKATESAN, Assistant Manager – Business Development, Prolific Systems & Technologies Pvt Ltd & Mr. P.RAJAPANDIAN, Assistant Manager –Technical, Prolific Systems & Technologies Pvt Ltd.

TOPICS COVERED:

INTRODUCTION TO CAREERS

HOW TO PREPARE RESUME

HIGHER STUDIES IN ABROAD

Mr. Rajapandian holds a Bachelor in Electronics and Communication Engg, and he Started Working as Assistant manager - Technical in M/s. PROLIFIC SYSTEMS & TECH. Pvt Ltd, Chennai, for the past 10 years. He conducted various training programs related to Placements, Soft skill development; interview Techniques to Engineering Graduates / Diploma Holders.... He had 11 years of work experience in US and India. All the Final year students of EIE were gathered in the Department Seminar hall. The informative speech delivered makes the students to interact with Mr.Venkatesan and Mr. Rajapandian throughout the session. It was an eye opening session. The session came to an end with the vote of thanks proposed by the student.



○ **ONE DAY SEMINAR ON “VACUUM TECHNOLOGY AND ITS APPLICATIONS & INDUSTRIAL FLOW MEASUREMENT” on 12.09.2017**

The Department of Electronics & Instrumentation engineering conducted a seminar on “Vacuum Technology and its Applications & Industrial Flow Measurement” on 12th September 2017 at Jeppiaar Engineering College. The Speakers for the Session were A.R.ANUJA, Human Resource and Santiago Robin.J, Marketing Executive, Toshniwal Hyvac pvt ltd.,Chennai.

TOPICS COVERED:

INTRODUCTION TO VACUUM TECHNOLOGY

INTRODUCTION TO INDUSTRIAL FLOW MEASUREMENT

INDUSTRIAL APPLICATIONS

HANDS ON SESSION



A.R.ANUJA, Human Resource and Santiago Robin.J, Marketing Executive, Toshniwal Hyvac pvt Ltd.,Chennai. A.R.ANUJA holds a Bachelor of Commerce from University of Madras - Chennai, and Almost six years of experience with Toshniwal in the field of recruiting , marketing support, conducting training & enhancing skills throughout the company depending upon the field of expertise. Coordinating with organizers for company's participation in various industrial expos (domestic and international) and other admin activities. Also organizing Industrial visits / internships for engineering college students etc.,



Mr. Santiago Robin is the Marketing Executive of Toshniwal Instruments, a manufacturer and supplier of Flow Meters and Vacuum Pump Systems in India. Along with a Primary role in Direct Product Marketing and Digital Marketing Strategy; he is the Resident Technical Instructor and content-developer for our Sales Engineering team. He holds a Bachelor of technology in Biotechnology from Karunya University – Coimbatore with BEC Vantage Certification (Grade-A) from University of Cambridge and has acquired DELF A2 Certification from Alliance Française of Madras

All the Third year students of EIE were gathered in the Department Seminar hall. The informative speech delivered makes the students to interact with the speakers throughout the session. His speech was highly realistic and stimulating. The session came to an end with the vote of thanks proposed by the student.

○ **ONE DAY TECHNICAL WORKSHOP ON “DESIGN OF INDUSTRIAL TRANSMITTERS WITH APPLICATION” on 07.09.2017**

The Department of Electronics & Instrumentation engineering conducted a one day technical workshop on “**Design of Industrial Transmitters with Application**” on 07th September 2017 at Jeppiaar Engineering College in association with NSIC- Technical Service Centre, A Government of India Enterprise, Chennai. The Speaker for the Session was Mr.Senthil Kumar, Project Engineer, Chennai.

TOPICS COVERED:

1. INTRODUCTION TO SENSORS
2. INTRODUCTION TO INDUSTRIAL TRANSMITTERS AND ITS DESIGN
3. HANDS ON SESSION

Mr.Senthil Kumar, Project Engineer, NSIC Chennai has more than 25 years of experience in the field of Electrical Engineering.



About 50 students of EIE were gathered in the Department Seminar hall. The technical speech delivered by the speaker made the students to interact with the speaker throughout the session. His speech was highly realistic and stimulating. The session came to an end with the vote of thanks proposed by the student. The students were exposed to visualize various industrial sensors and transmitters during their practical session.



○ **Guest lecture on “TIME MANAGEMENT” on 29.01.18**

The Department of Electronics & Instrumentation engineering conducted a Guest Lecture on “Time Management” on 29th January 2018 at Jeppiaar Engineering College. The Speaker for the Session was Ms.T.Divya, Senior Project Manager, Caterpillar Pvt. Ltd,Chennai.



➤ Association activities

○ **ISA (International Society of Automation)**

○ **2 Days Workshop On IOT WITH ARDUINO on 29.06.17-30.06.17**

INTRODUCTION:

Internet of Things (IoT) is the network of devices and in general things that are connected together and communicating with each other to perform certain tasks, without requiring human-to-human or human-to-computer interaction.

OBJECTIVES:

1. Acquaint participants with the basics of IoT and its application areas.
2. Impart knowledge on the advanced IoT concepts that will be helpful to build real time applications.
3. Enable students to convert their product idea into a working prototype.
4. Bring-up student entrepreneurs and innovators by supporting them with mentorship.

OUTCOME:

1. Participants will gain valuable insights into IoT.
2. Participants will learn the basic usage of Arduino and Raspberry Pi environment for creating basic projects at low cost.
3. The participants learn to create end to end IoT Device solution.
4. They will understand and perform hands on experiments on the GPIO pins (general purpose I/O) and also learn about interfacing with sensor, Bluetooth Module, Wi-Fi module

Workshop course Content:

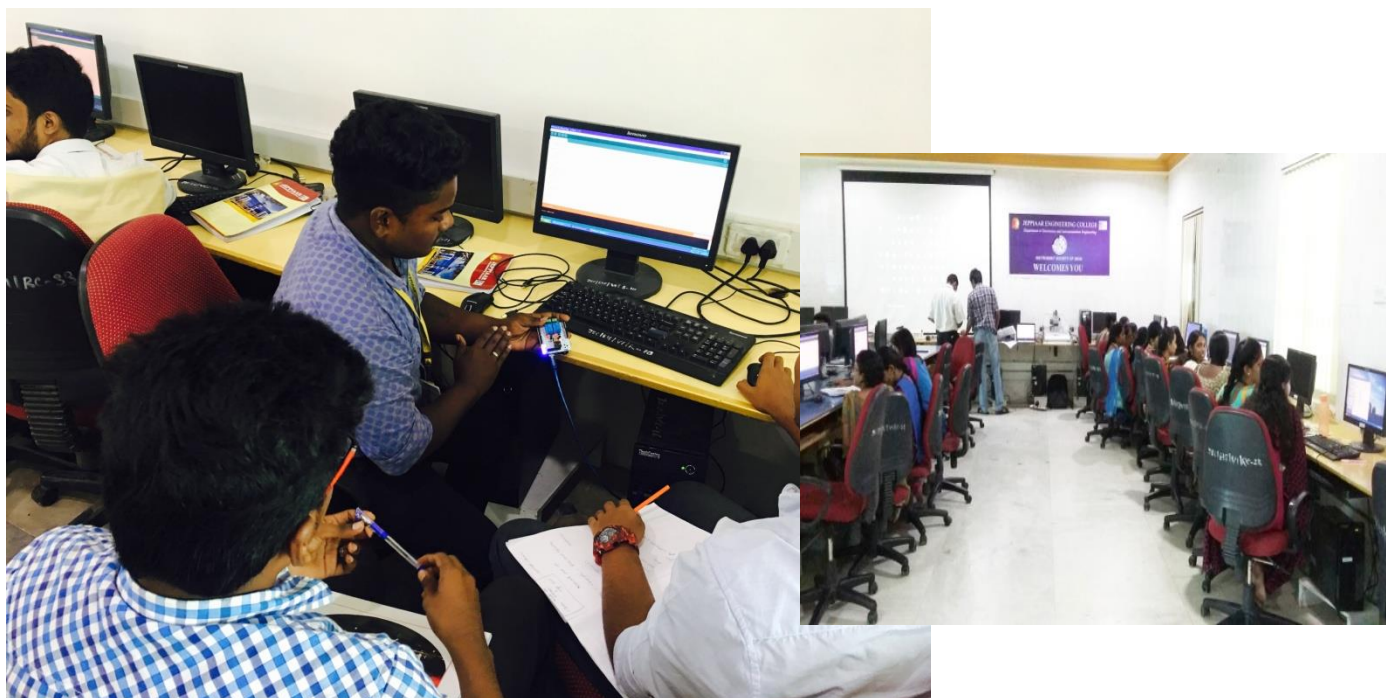
DAY 1:

- 1.Introduction to Internet of Things
- 2.Introduction to Microcontrollers and Microprocessors
- 3.Microcontrollers and their types(All about Microcontrollers)
- 4.Introduction to Arduino
- 5.Why Arduino?
- 6.Types of Arduino
- 7.Pin architecture of Arduino
- 8.Programming a Arduino
- 9.Blinking a LED
- 10.Blinking a Series of LEDs
- 11.Using a button with Arduino

DAY 2:

- 1.Using a potentiometer with Arduino
- 2.Introduction to sensors
- 3.Interfacing temperature with Arduino
- 4.Infrared Sensor/Ultrasonic Sensor
- 5.How a relay works
6. Interfacing bluetooth module
7. Interfacing Wifi Module (ESP8266)





○ **ISOI (Instrument Society of India)**

Two Days Workshop on Electronic Circuit Designing In PCB Using CAD Software on 05.07.17 - 06.07.17

The session started off with Introduction to ORCAD CAPTURE lite software and the basics of designing the electronic circuits. Some of the basic circuits were designed and executed with simulation software. The main objectives and advantages of simulation software was also elaborated by Mr.Sathiyamoorthy. Many practical concepts and day-to-day applications of PCB was also explained. The students were made to think and analyse the circuits logically. The students were instructed to design circuits of their own. The latest applications of PCB designing in industry and its scope was elaborated. The first session ended with an interactive session where the students asked for queries. It was an interactive session followed by hands on training on handling and operation of designing electronic circuits in PCB using CAD software. The day two started with a lecture on the concepts of PCB. Basics of designing for the control of simpler circuits comprising of transistors, capacitors, diodes, etc., were explained. The students were also given time to design circuits of their own. Operation of half wave and full wave rectifier, its interfacing and control were explained and executed. Real time applications of printed circuit board in the industry and its scope in various fields were discussed.

❖ **Faculty Achievements**

Department faculties have filled 20 patents till date.

❖ **Research, Publications**

22 papers were published by the department faculty in the international Conference ICONSTEM 2017

❖ **Student achievements**

- Our student AHAMED NALIBUDEEN.P.S has won 2nd prize & 5000 cash price in the paper presentation at IEEE madras section & Sri Eshwar College of Engg, Coimbatore.
- Our students AJINAS.P, MANIKANDAN.S, ARAVINDH.S have won the I PRIZE and best project award at the “THE TRACK” which was held at Velammal engineering college with a cash award of Rs.4000
- Our students have won THE III PRIZE at the Project Expo held at Sairam Institute of Tech with a cash award of Rs.2000.
- Our Student KRITHIKASRI.K won II prize in TECHNOQUIZ held at Meenakshi Sundararajan Engineering College.

❖ **Department awards**

NIL

❖ **Goals and Plans For Next Year**

- 2 STDP/FDP
- 2 Workshop (Labview & Advanced Microcontroller Design)
- 2 Certification Course
- 6 Guest Lectures
- Mou With Toshniwal, Hp Valves
- 4 Industrial Visit

Note

- **Details Since June 2017 are requested.**
- **Provide Photos for all events and your department building.**
- **No table format. Use bullets for events**