



## Department of Mechatronics Engineering of



**Thiagarajar College of Engineering**  
Madurai-625015, Tamilnadu

For more details visit:

[www.tce.edu/dept/mect/home](http://www.tce.edu/dept/mect/home)

### **ABOUT THE DEPARTMENT:**

The Department of Mechatronics Engineering was established in the year of 2016. At present, the Department offers B.E. Mechatronics. The Department aims at producing talented Mechatronics engineering specialists who cater to the needs of the relevant industries. The faculty members are doing research projects from major funding agencies such as DST, UGC, CVRDE, DRDO and AICTE. The Department has full-fledged laboratories to carry out undergraduate, and doctoral program in various specializations of the Mechatronics engineering field. State-of-the-art facilities such as proportional valve systems, Siemens IOT systems, YASKAWA robots for cooperative applications, 3D printers, Multi sensor interface kits encourage students to carry out research in the areas of Sensors, Smart Materials and Structures, Internet of Things (IoT), Automation and Control, Robotics and Embedded Systems.

### **VISION:**

Be a globally renowned school of engineering in Mechatronics

### **MISSION:**

As a department, we are committed to

- Develop ethical and competent engineers by synergizing world class teaching, learning and research
- Establish state-of-art laboratories and to provide consultancy services to fulfil the expectations of industry and needs of the society
- Inculcate entrepreneurial qualities for creating, developing and managing global engineering ventures

- Motivate the students to pursue higher studies and research

### **ABOUT LABORATORIES:**

The department has seven fully fledged laboratories capable of carrying out consultancy and testing services for industries.

The services offered by the individual labs is briefed below

### **CENTRE FOR ROBOTICS:**

- Programming industrial robots for cooperative applications



- Offline Robot Programming
- Development of Inspection solutions by Industrial grade Camera
- Development of Human Machine Interface
- Simulation of Virtual Robot Environment for industry
- PLC Program development for an automation process
- Mobile Robot based Automation
- Modelling, Simulation and development of Mechatronic Systems

## BOSCH LAB FOR AUTOMATION TECHNOLOGIES:



- Training on Electrical controls, PLC programming and interfacing, HMI and SCADA programming, Industrial Networks.
- Training on Variable Frequency Drive, Servo Drive and Motion Logic Controller.
- Training on Industrial Hydraulics and Pneumatic systems.
- Retrofitting of conventional mechanical systems with total automation.

## SENSORS LAB:

- Development of Data Acquisition system
- Cross platform application development using flutter
- PCB Board design (upto 4 layers) using Ultiboard(proprietary) and KICAD (opensource)
- ARM based Embedded System Development (STM32, Raspberry pi, Micropython)
- Electronics workbench testing using Labview

- Machine Vision Development using Labview
- Development of wireless sensor modules using Labview



- FPGA programming through Labview (Vivado Toolchain)
- Open source wireless Embedded Development for Internet of Things. (WIFI, BLuetooth, LoRa)

## PRODUCT DEVELOPMENT LAB:



- 3D printing
- HVAC systems can be tested for energy efficiency

## MODELLING AND SIMULATION LAB:

- Modelling and Simulation of Mechatronic systems



## MECHATRONICS WORKSHOP:

- Development of embedded equipment for industries
- PCB Fabrication and Modelling



- Testing of Electronic Circuits and Cables

## MEASUREMENTS AND CONTROL LAB:

- Control system design
- Data measurement using LABVIEW

## CONTACT US:

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