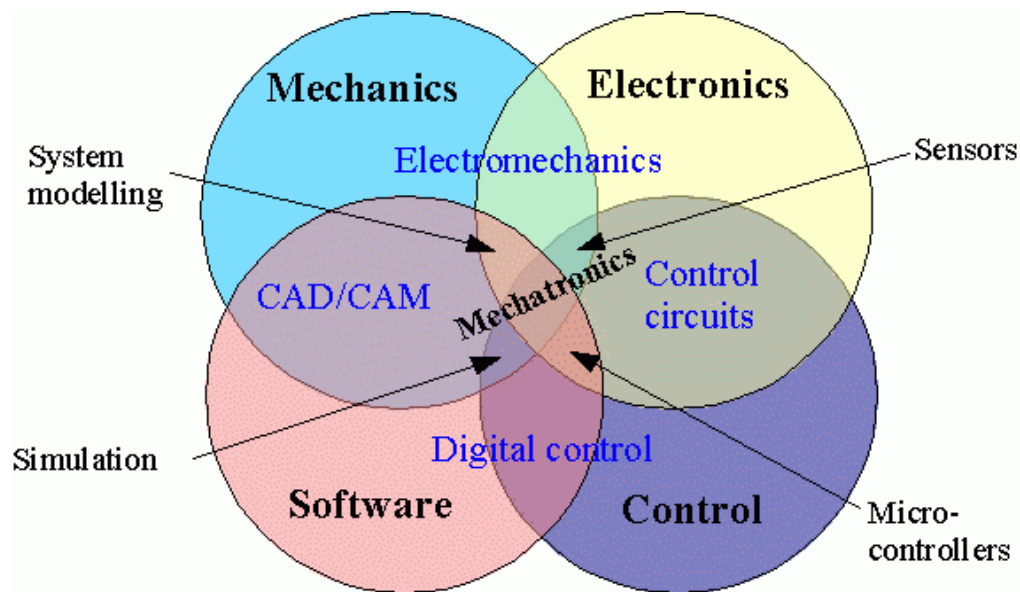


Diploma in Mechatronics Engineering



The need for an integrated approach to the design of complex engineering systems involving Electronic engineering, Mechanical engineering and Computing has become increasingly apparent in recent years and has led to the growth of the concept of Mechatronics.

Mechatronic engineering is the integration of precision mechanical engineering with electronics, computer systems, and advanced controls to design and construct products and processes. Mechatronic engineering is one of the newest branches of engineering with far-reaching applications to every sector of society. The mechatronic engineering program provides a broad-based education in the basic principles of electrical, mechanical and computer engineering. The world is quickly moving towards a future where many mechanical products contain computers and electronics for monitoring or control. This integration of mechanical and electronic components, or mechatronics, makes it possible to design intelligent, reliable, versatile electromechanical systems such as industrial robots, medical devices, aircraft simulators, automated assembly lines, building control systems, and autonomous vehicles. Skills in Mechatronics will be in high demand for many years to come.



The department of Mechatronics Engineering hosts experienced and qualified faculty members specialized in the latest areas of various engineering disciplines such as Machine Design, Advanced Materials, Robotics & Automation, 3D printing, Instrumentation and communication and so on. The department also has well equipped laboratories relevant for the programme. Active engagement of the students with research and innovation by hosting competitions and taking part in the National and International conventions will boost the confidence of both the faculties and the students. Design and programming of modern mechatronic tools such as CNC machines, drones and 3D printers are considered to be the indispensable skills for the future world.

The department is actively involved in hosting many additional software and hardware training programs for students as per industrial requirements. It also focuses on individual student to motivate and create the mind set for their success by conducting technical workshops, conferences, national level technical competitions, social activities etc.

PROGRAM OUTCOME

- Apply knowledge of mathematics, science and engineering.
- Communicate effectively.
- Apply knowledge and skills in mechanical systems.
- Demonstrate various manufacturing techniques like casting, forming and cutting.
- Apply knowledge and skills in creating program code.
- Operate and maintain fluid machineries based on fluid laws and characteristics.
- Operate advanced machineries.
- Prepare production drawings, 3D models and assemblies using advanced CAD software.
- Mechatronics Engineering concepts in the general stems of automation, robotics and allied engineering sectors.
- Test and debug complex automated equipment to machine specifications
- Troubleshoot complex electrical circuits and machine control programs.
- Ability to solve contemporary issues related to manufacturing, design, and Industrial automation through diploma Mechatronics program curriculum that includes knowledge, practice and hands on training.
- Ability to thrive by higher studies or become an entrepreneur by adapting to discipline, effective communication, business economics and managerial skills and contribute for the betterment of the society.

LABORATORY

Sensors and Actuators Laboratory

Electronic Devices and Circuits Laboratory

Mechatronics Laboratory

Signal Processing and Embedded Control (SPEC) Laboratory



THE PROGRAMME WILL ENABLE STUDENTS TO DEVELOP:

1. A fundamental understanding of the analysis and design of mechanical and electronic devices.
2. A broad understanding of the utilization of computers in control and communication.
3. A basic understanding of the principles of motion control.
4. Creative design abilities and a practical appreciation of the product development process through appropriate group individual activities; and the ability to coordinate multi-disciplinary projects, to make trade-offs among the available technology options with respect to cost, schedule, and risk, and to design and integrate motion control systems emphasizing motor and mechanism sub-systems.
5. Work as an effective member of a design team.
6. Communicate technical results to specialists and non-specialists.