

# HIGHER NITEC IN ROBOTICS & SMART SYSTEMS

## Core Modules

### Robotics and Applications

On completion of the module, students should be able to install, program, operate, troubleshoot industrial and collaborative robotic system.

### Electrical Applications

On completion of the module, students should be able to set up, design and construct electrical control system and electronic circuits. They should also be able to test and troubleshoot faulty circuits.

### Mobile Robotics and Control

On completion of the module, students should be able to apply knowledge of localisation, mapping and obstacles avoidance to perform navigation on mobile robotics platform.

### Smart Sensors and Integration

On completion of the module, students should be able to install, integrate and troubleshoot smart sensor system, and apply the system into Industry 4.0 and Internet of Things (IoT).

### End Effectors

On completion of the module, students should be able to design end effector using 3D solid modelling, produce end effector using 3D printing, and test end effector based on its application.

### Smart Systems and Programming

On completion of the module, students should be able to install, configure and test robot vision system and acquire images through network protocol for analysis; and apply microcontroller programming concept to control microcontroller-based devices and equipment.

### Industry Attachment

On completion of the module, students should be able to acquire and apply a cluster of key technical, social and methodological competencies in the occupation.