HIGHER NITEC IN TECHNOLOGY – ROBOTICS & SMART SYSTEMS

Course Code: HTRSS

COURSE OBJECTIVE
This course provides students with the skills and technical knowledge in robotics programming, smart systems design and testing, and IoT sensors applications and connectivity.

COURSE STRUCTURE

S/N	Module Details	Module Code	Module Objectives
C1	**Robotics and Applications** 54 hrs (T) 54 hrs (P) Credits: 7 Prerequisite: Nil	MC4005FP Equivalent Code Nil	On completion of this module, students should be able to install, program, operate, troubleshoot Industrial and collaborative robotic system.
C2	**Electrical Applications** 54 hrs (T) 54 hrs (P) Credits: 7 Prerequisite: Nil	MC4006FP Equivalent Code Nil	On completion of this module, students should be able to setup, design and construct electrical control system and electronic circuits. They should also be able to test and troubleshoot faulty circuits.
C3	**Mobile Robotics and Control** 54 hrs (T) 54 hrs (P) Credits: 7 Prerequisite: Nil	MC4007FP Equivalent Code Nil	On completion of this module, students should be able to apply knowledge of localisation, mapping and obstacles avoidance to perform navigation on mobile robotics platform.
C4	**Smart Sensors and Integration** 54 hrs (T) 54 hrs (P) Credits: 7 Prerequisite: Nil	MC4008FP Equivalent Code Nil	On completion of this 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).
C5	**End Effectors** 12 hrs (T) 96 hrs (P) Credits: 8 Prerequisite: Nil	MC5005FP Equivalent Code Nil	On completion of this 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.
C6	**Smart Systems and Programming** 12 hrs (T) 96 hrs (P) Credits: 6 Prerequisite: Nil	MC5006FP Equivalent Code Nil	On completion of this module, students should be able to install, configure and test the robot vision system and acquire the images through network protocol for analysis; and to apply microcontroller programming concept to control microcontroller-based devices and equipment.

Abbreviations: T - Theory, P - Practical

CREDITS FOR CERTIFICATION
Total of 42 credits from successful completion of 6 modules.

VENUE
ITE College Central

Note:
1) Applicant must be free from colour appreciation deficiency.
2) The training schedule of lessons is subject to change.
3) Depending on the demand, not all the modules in the CET *Higher Nitec* in Technology courses will be offered in each intake. Where the modules are offered and there is insufficient enrolment, the classes will be cancelled and a full refund will be given to the affected students.