HIGHER NITEC IN TECHNOLOGY - MECHATRONICS ENGINEERING

Course Code: HTMCE

COURSE OBJECTIVE

This course provides students with broad-based skills and knowledge in electrical, electronics and mechanical discipline to enable them to perform work involving assembling, installing, testing, commissioning and troubleshooting industrial automated equipment and systems.

COURSE STRUCTURE

S/N	Module Details	Module Code	Module Objectives
C1	**CAD and Mechanical Applications** 33 hrs (T) 75 hrs (P) Credits: 7 Prerequisite: Nil	MC4011FP Equivalent Codes MC4011PA MC4001FP MC4001FPR	On completion of this module, students should be able to read, interpret and produce common geometrical and mechanical drawings using Computer-Aided Drafting (CAD) software; use common tools and equipment to fabricate and service simple mechanical elements and assemble aluminum profile structures.
C2	**Electrical and Electronics Applications** 54 hrs (T) 54 hrs (P) Credits: 7 Prerequisite: Nil	MC4012FP Equivalent Codes MC4010PA MC4002FP MC4002FPR	On completion of this module, students should be able to analyse circuit schematic and board layout; and perform in-circuit measurement. They should also be able to identify faulty components and replace them. Students should also be able to conduct performance test to ensure that the circuit is working as intended.
C3	**Pneumatics and Automation** 45 hrs (T) 63 hrs (P) Credits: 7 Prerequisite: Nil	MC4013FP Equivalent Codes MC4012PA MC4003FP MC4003FPR	On completion of this module, students should be able to apply electro-mechanical control systems, including common input/output devices, pneumatics and electro-pneumatics systems in industrial automation.
C4	**PLC and Motor Control** 27 hrs (T) 81 hrs (P) Credits: 7 Prerequisite: Nil	MC4014FP Equivalent Codes MC5011PA MC4004FP MC4004FPR	On completion of this module, students should be able to apply Programmable Logic Controller (PLC) programming to interface and control PLC-controlled applications and to use advanced PLC instructions to program PLC intelligent modules for industrial automations.
C5	**Cyber Physical Systems** 54 hrs (T) 54 hrs (P) Credits: 7 Prerequisite: Nil	MC5011FP Equivalent Codes MC5012PA MC5001FP MC5001FPR	On completion of this module, students should be able to troubleshoot and maintain the sub-systems associated with a Cyber Physical System / flexible manufacturing system, such as Conveyor Automated Guided Vehicle, Automated Storage and Retrieval, Data Identification, Machine Vision, Human Machine Interface, Supervisory Control, Data Acquisition, Internet of Things, Communication Networking, Quality Assurance, Process Control and Maintenance Management.
C6	**Robotics Systems** 33 hrs (T) 75 hrs (P) Credits: 7 Prerequisite: Nil	MC5012FP Equivalent Codes MC5010PA MC5002FP MC5002FPR	On completion of this module, students should be able to set up, program, operate, troubleshoot and maintain a robotic system, and solve engineering problems involving statics, dynamics, kinematics and kinetics. Students are also trained to apply microcontroller programming concepts used in control circuits of microcontroller-based equipment.

Abbreviations: T - Theory, P - Practical

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

VENUE
ITE College Central, ITE College West

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.