Certificate in Mechatronics

Basic Electrical and Electronics (EM5P1191T)

Basic Concepts of Electrical Engineering: Electric Current, Voltage, Ohm's Law, KCL, KVL, Introduction to R, L and C, Faraday's Laws of Electromotive force, Electric Power, Electromagnetic Induction, Lenz's Law.

Three Phase Circuits: star/delta circuit, line and phase quantities, Three phase power.

Transformers: Principle, construction and operation of single-phase transformers.

Basic Electronics: Intrinsic and extrinsic Semiconductors, PN Junction Diode, Diode biasing, Zener Diode.

Digital Electronics: Boolean algebra, Binary System, Logic Gates (AND, OR, XOR, NOT, NAND, NOR, XNOR) and Their Truth Tables.

Industrial Automation (EM5P1192T)

Pneumatic: Introduction to Pneumatics, &, Advantages and Limitations of Pneumatics, Types, General application of Pneumatics, Symbols.

Hydraulics: Introduction to Hydraulics, Advantages and Limitations of Hydraulics, Types, General Application, Symbols.

Sensors: Introduction to Sensors, Advantages and Limitations of Sensors, Types, General Application, Symbols.

Introduction to PLC and SCADA

Modern Manufacturing (EM5P1193T)

Introduction of Manufacturing: Concepts of manufacturing, Chip-less process of manufacturing, Chip removal process of manufacturing, Application of chip-less and chip removal process, Types of production

Blue Print Reading: Basics of Engineering Drawing, Projections, Dimensioning concepts, Limits, fits & tolerance, Form & positional tolerance, Surface roughness

Introduction to CNC, Machine parts & features: CNC Concept, Advantages & Disadvantages, Types of CNC machines, Features of CNC machines