



XRobotics Syllabus for Class X – ICSE Board Guided

- Introduction to Artificial Intelligence (AI)
- Meaning and brief history
- Applications and Benefits of AI
- Ethical considerations in AI
- Role of Data and Information, Evolution of Computing
- Evolution of Computing: Pre AI/ML Binary Logic System
- Evolution of Computing: Conditional Gates
- Evolution of Computing: Deterministic computing for deterministic problems
- Introduction to Data and Programming with Python
- Familiarization with Python
- Introduction to data types and variables
- Introduction to Operators
- Conditional Statements
- Control Statements
- Functions
- AI Concepts and AI Project Framework
- AI Concepts
- Components and Stages (alias AI Project Cycle)

ASSESSMENT:

- Robotics – I
- Robotics – II
- Robotics – III
- Artificial Intelligence – I
- Artificial Intelligence – II
- Artificial Intelligence – III
- Python Programming outcome – Assessment I
- Python Programming outcome – Assessment II
- Python Programming outcome – Assessment III
- Assignment and Questions – E-Commerce
- Project – I
- Project – II

ROBOTICS – PART I

- New Age Robotic Systems
- From Robots to Cobots
- Cobots
- Components of Robots as a System



- Introduction to Gears
- Sensors in Robotics
- Actuators
- Controller for a Robotic System
- Integrating Sensors, Actuators and Controller in a Robotic System

TOPIC 7 – ROBOTICS PART I

- Application of Mechanical Block of Robotics
- Visualization of motion

TOPIC 8 – ROBOTICS PART I

- Integrating Robots as a System

TOPIC 9 – ARTIFICIAL INTELLIGENCE PART II

- Decision making in Machines/ Computers
- Automated versus Autonomous Systems
- Decision Making
- Machine Learning (ML)

TOPIC 10 – ARTIFICIAL INTELLIGENCE PART II

- Machine Intelligence – Turing Test
- Cybersecurity

TOPIC 11 – ARTIFICIAL INTELLIGENCE II

- Problem Scoping
- Data Acquisition
- Data Exploration
- Modelling and Evaluation

TOPIC 12 – ARTIFICIAL INTELLIGENCE II

- Modules and Packages
- Lists and Tuples in Python
- Strings

ASSIGNMENT SERIES AND TEST PROJECTS:

- Robotics, Artificial Intelligence (AI), and Python Programming 20 + Practical's