



**VENDORS NAME: PRAG ROBOTICS**

**CLASS: IV MECHATRONICS (Seventh Semester)**

**SUBJECT: INDUSTRIAL ROBOTICS TRAINING**

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1		<b>Intro to Robotics &amp; Industrial Robotics</b>
	T	What is a Robot?
	T	Fields of Robotics
	T	What is Industrial Robotics?
2		<b>Who's who in Industrial Robotics</b>
	T	History of Industrial Robots
	T	Who makes Industrial Robots
	T	Your Scope in Industrial Robotics
3		<b>Building blocks of Industrial Robotics</b>
	P	Types of Joints
	P	Creating new robot with joints
	P	Types of Industrial Robots
4		<b>Mathematical concepts</b>
	T	Coordinate System
	T	Axes
	T	Degrees of Freedom
	T	1d, 2d & 3d space
5		<b>Kinematics of Industrial Robots</b>
	T	1 DOF Robot
	P	2 DOF Robot - FK
	P	3 DOF Robot - FK
	?P/T?	?Inverse Kinematics?
6		<b>Logical Design for Gripper Application</b>
	T	Line, Plane Sensor Communication
	T	Attacher& Detacher Logic
	P	Input & Output Communication Signals
	P	Logical Operations & Connections for Material Handling
7		<b>How to Program an Industrial Robot?</b>
	T	What is Robot Programming?

	P	Types of Robot Programming
	P	How to make the best use of simulation in Robotics?
	P	Difference between proprietary and open source simulation tools
8		<b>Jogging a Robot from point to point</b>
	P	Station View
	P	How to add robots to work with them?
	P	How to Control Robots?
	P	Types of Robot Motion
	P	Robot Jogging
9		<b>Creating a Robot Application</b>
	P	How to add a robot in Robot Studio?
	P	How to create targets & paths for these robots?
	P	How to create a material handling application using targets and paths?
10		<b>Where can Industrial Robots be used?</b>
	P	Material Handling
	P	Path Planning
	P	Dispensing
11		<b>Intro to Service Robotics</b>
	T	History of Service Robots
	T	Who makes Service Robots
	T	Your Scope in Service Robotics
12		<b>Design &amp; Modelling of Mobile Robot</b>
	T	Conceptual Design of Mobile Robots
	T	Stability Aspects of Mobile Robots
	P	Implementation of Robot Chassis Design
13		<b>Programming a robot with sensor fusion</b>
	T	Principles & Significance of Sensor Fusion
	P	Visualization of output in Sensor Fusion
	P	Implementation of Sensor Fusion in Robotics
14		<b>Fundamentals of Perception, Localization and Mapping</b>
	P	Robot Map Building
	P	Occupancy Grid Map
	P	Implementation in Robot Maze