ME417 Robotics and Automation										
L	**T**	**P**	Credit	Area		**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
3	0/1	2/0	4	DEC/GEC		15/25	25	20/25	40/50	-

Objectives: To enable the students to understand the basics of robots, terms relating to industrial robots, types of resources. To understand the concepts of robot languages and programing.

Syllabus		**Contact Hours**
Unit-1	Introduction to Robotics, Classification of Robots, Characteristics of Robots, performance, advantages and disadvantages of a robot, industrial applications of a Robot.	**6**
Unit-2	Fundamentals of a Robot: Various system, structure and definition, terms relating to industrial Robots, basic terms related to Robot performance and Characteristics, Control volume of a robot.	**8**
Unit-3	Robot languages and programing.	6
Unit-4	Controlling the Robot systems: Introduction to drives, Mechanical, Hydraulic, Pneumatic, electric drives, feedback control	8
Unit-5	Sensing system for a robot: Introduction, types of sensors, machine vision, Artificial intelligence, Control techniques.	**7**
Unit-6	Robot safety: Introduction, potential safety hazards, safety planning check lists, safety guidelines, latest development in safety measurement.	**7**
	Total	**42**

Reference Book:	
1	Introduction to Robotics: Mechanics and Control, John j Craig, Pearson education, ISBN- 0201543613, 2005.
2	Robotics for Engineers, Y.Koren, McGraw Hill Publications, ISBN- 0070353999, 1985.

Course Outcomes

CO1	To make the students understand basics of robots and automation
CO2	To understand the basics of various methods, machines with respect to robotics and automation
CO3	To make the students understand different types of sensors
CO4	To make the students understand different types of configurations
CO5	To understand the importance of robotics and automation and their applications.
CO6	Application of robotics in industries.

CO-PO/PSO Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	2	2	3	2	3	2	3	3	1	2	2	1	3
CO2	2	3	3	2	1	2	3	2	3	1	1	1	2	1	2
CO3	1	3	3	2	2	2	3	2	1	3	1	2	1	2	2
CO4	2	3	2	2	3	2	3	2	2	2	1	1	2	3	1
CO5	3	3	1	2	1	2	3	2	3	1	1	2	2	3	2
CO6	1	3	3	2	2	2	3	2	1	3	1	2	1	2	2