

PCS7J002

Robotics

3-0-0

Module I

Robot Anatomy Arm Geometry-Direct & Inverse Kinematics Problem. Arm Dynamics, D Alembert Equations of Motion, Synthesis of elements with mobility constraints, manipulations-trajectory planning, joint interpolated trajectories. [15L]

Module II

Control of Robot Manipulation-computed torque technique sequencing & adaptive control, resolved motion control Mobile Robots. [6L]

Module III

Robot sensing-Range & Proximity & Higher-Level vision, illumination techniques, Imaging Geometry, Segmentation Recognition & Interpretation. [8L]

Module IV

Robot Programming Language Characteristics of Robot Level & Task Level languages. Robot intelligence-State Space search, Robot learning, Robot Task Planning, Knowledge Engineering. [10L]

References:

1. K.S Fu R.C . CSG Lee-Robotics Control, Sensing, Vision & Intelligence, McGraw-Hill.
2. M.P. Groover, M.Weins, R.N. Nagel, N.C. Odrey –Industrial Robotics, McGraw Hill
3. Andrew C. Straugard-Robotics &AI,PHI
4. S. Sitharama Iyengar, Alberto Elfes-Autonomous Mobile Robots Control, Planning &Architecture, IEEE Computer Society Press