SUBJECT NO-ME60352, SUBJECT NAME- ROBOTICS

LTP- 4-0-0,CRD- 4

SYLLABUS :-

Robotics

Introduction to Robotics: Definitions, motivation, historical development, basic structure, classification, workspace, grippers, specifications
Robot Arm Kinematics and Dynamics: Frame transformation, D-H parameters, Forward kinematics, Inverse kinematics, Lagrange formulation
Trajectory Generation: Cartesian scheme, Joint space scheme
Teaching Methods: Manual teaching, Lead-through teaching, VAL programming
Sensing: Range sensing, proximity sensing, touch sensors, force and torque sensing
Robot Vision: Low-level vision, Higher-level vision
Control Schemes: Position control, force control, hybrid position and force control
Motion Planning: Traditional and non-traditional techniques