

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E

Communication Engineering

Subject Name: **Robotics and Intelligent Systems**

Sr.No	Course content
1	Robotic Systems: Overview and Preliminaries Biological Paradigms: Robotic Manipulators Sensors and Actuators: Low-Level Robot Control, Mobile Robots Modelling Dynamic Systems Kinematics and Dynamics of Rigid Bodies:Continuous- and Discrete-time Dynamic Models; Linearization and Linear Response
2	Intelligent Systems: Continuous- and Discrete-time Dynamic Models: Formal Logic and; Linearization, Turing Machines and Linear Response, Predicate Calculus; Crisp and Fuzzy Sets, Expert Systems: Inference and Knowledge Representation, Probability Theory Introduction to Optimization and Numerical Optimization: Least-Squares EstimationMonte Carlo Evaluation and Evolutionary Algorithms Learning (Knowledge Acquisition) Classification of Data Sets
3	Computational Neural Networks : Neural Networks: Training Neural Networks
4	Goal-Oriented Control : Optimal Control, Robust, Adaptive, and Neural Control, Task Planning and Multi-Agent Systems

Reference Books:

1. Autonomous Robots, G. Bekey, MIT Press, 2005