

ME 640 Robotics and Robot Applications (3-0-0-6)

Definition and classification of ROBOTS and manipulators, motion and degrees of freedom, motion categories, uses, field of applications, Robot Arm Kinematics: Direct and Inverse, Robot arm dynamics, Manipulator trajectories, control of robot manipulators. Introduction to sensing and vision in robotics.

Textsbooks:

- [1] K. S. Fu, R. C. Gonzalez and C.S.G. Lee, *ROBOTICS: Control, Sensing, Vision and Intelligence*, McGraw-Hill, 1987.
- [2] B. K. P. Horn, *Robot Vision*, MIT Press, Cambridge, 1986.
- [3] J. J. Craig, *Introduction to Robotics*, Addison-Wesley, 1989.
- [4] Y. Koren, *Robotics for Engineers*, McGraw Hill, 1985.