



ME 735 Advanced Topics in Robotics

Instructor: Dr. Zhiming Ji
Office: MEC 305
Phone/Email: 973-596-3341, ji@njit.edu

Prerequisite: ME 625 or permission of the instructor

Number of credits: 3

Description: Introduction to advanced topics and techniques in robotics. Subjects covered include differential kinematics, calibration and accuracy, trajectory control, and compliant motion control as well as an in-depth treatment of topics discussed in ME 625.

Text: Introduction to Robotics: Mechanics and Control, by John J. Craig, 3rd Ed. 2005, Prentice Hall, ISBN 0-201-54361-3

Grading:	Homework	30%
	Project Report	40%
	Presentations	30%

Topics:

- Spatial Transformations and Robot Kinematics: Rotation matrices, Cardon and Euler angles, Euler parameters, Rotation Vectors, Helical angles, and Angle-axis
- Jacobian and Singularities
- Robot Dynamics and Control
- Critical Review of selected research publications
- Reports and Presentations

The NJIT Honor Code and Professional Conduct will be strictly enforced.