RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY
SCHOOL OF ENGINEERING
DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

650:514 DESIGN OF MECHANISMS

Prerequisite: Graduate Standing

Instructor: H. Baruh, B-242 College of Engineering Bldg., phone: 445-3680, baruh@jove.rutgers.edu
I will have a pointer to the course material on my professional web page, http://cronos.rutgers.edu/~baruh

Office Hours: M, Th, F 10:00 -11:00 a.m. Feel free to drop by anytime.

Textbook: No text, but we will consult several references.

References: *Mechanism Design: Analysis and Synthesis*, Vol. 1, A.G. Erdman and G.N. Sandor, Prentice-Hall
Mechanism Design: Analysis and Synthesis, Vol. 2, A.G. Erdman and G.N. Sandor, Prentice-Hall
Geometric Design of Linkages, J. M. McCarthy, Springer Verlag
Analytical Dynamics, H. Baruh, McGraw-Hill

Grading:		
	Midterm	25%
	Final Exam	30%
	Homework and Project	45%

Outline:

Week	Topic
1	Introduction; Design; Fundamental Concepts, Coordinate Transformations
2	Mathematical Tools in Kinematics, Euler Angles
3	Mathematical Tools in Kinematics, Euler Parameters, Quaternions, Screws and Twists
4	Types of Mechanisms
5	Mechanism Mobility, Overconstrained Mechanisms
6	Planar Analysis, Velocity and Acceleration, Instant Centers
7	Planar Analysis (continued)
8	Synthesis of Planar Mechanisms
9	Synthesis Methods
10	Other Synthesis Methods
11	Computational Techniques
12	Analysis of Spatial Mechanisms
13	Analysis of Spatial Mechanisms
14	Synthesis of Spatial Mechanisms
	Final Examination

Please Note:

1) The midterm and final are closed book, closed notes. You can bring one equation sheets 8.5×11 (both sides) to these tests.

2) The project is a significant portion of this course. Please do not take it lightly. The project grade will depend on the quality of your idea, the quality of your project, as well as your presentation.