

## New Graduate Course Announcement – Spring 2010

### **ME 593 – Advanced Kinematics**

**Instructor:** Dr. Jim Van de Ven  
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**Description:**

In this course, we will study advanced topics in kinematics with a focus of mechanism synthesis techniques. The course will primarily focus on planar mechanism, but will also treat spherical and spatial mechanisms. Course content will come from a variety of sources including class notes, texts, and journal articles. Course topics will be applied through a semester long design project. Topics of study include: review of kinematics fundamentals, classification of mechanisms, type synthesis, graphical synthesis techniques, and analytical synthesis techniques including dyad form, ground pivot specification, MK circles, Burmester curves, Chebychev spacing, velocity synthesis, four and five prescribed positions, and multi-loop synthesis. Spherical mechanisms, spatial mechanisms, spatial transformations, and spatial dyad synthesis will also be discussed.

**Prerequisites:**

Undergraduate course in kinematics or instructor permission.

Please feel free to contact instructor for more information.