

**MEM 491 Senior Design Lecture Schedule - Fall AY2008/2009**  
**Dept. of Mechanical Engineering and Mechanics**  
**Drexel University**

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**TA:** TBD

**Lectures:** Mondays 5:00-5:50PM; Disque 103

**Overview** - Engineering design is the process of devising a system, component, or product to meet desired needs. It is a decision making process (often iterative), in which the basic sciences, mathematics, and engineering principles are applied to convert resources optimally to meet a stated objective. Among the fundamental elements of the design process are the establishment of objectives and criteria, synthesis, analysis, manufacturing/construction, validation, testing and evaluation. The sequence Senior Design courses, MEM491, MEM492 and MEM493, are designed to serve as a “**Capstone course**” to put into practice multiple engineering disciplines towards solving a “real-world” problem. Project activities include: development of student creativity, solving open-ended problems, utilization of modern design theory and methodology, formulation of design problem statements and specifications, consideration of alternative solutions, design feasibility studies, design analyses and simulations, development of production processes, concurrent engineering design and detailed system descriptions, and fabrication of working prototypes, along with the considerations of a variety of realistic constraints such as economic factors, safety, reliability, aesthetics, ethics, and social impact to the design. The weekly schedule is as follows:

Date	Week	Topic	Lecturer(s)
9/21/09	1	Course Overview and Important Deadlines Requirements for Pre-proposal, Selecting Topic, and Forming Team Faculty presentations for SD topics	Layton and Kang
9/28/09	2	Satellite Systems Design	Kang
10/05/09	3	Design Theory and Optimization	Layton
10/12/09	4	<b>Columbus Day (University Holiday)</b>	
10/19/09	5	<b>Pre-Proposals due by 5:00 PM, 10/19/2009. One hardcopy to Dr. Layton</b> Referencing (bring one laptop per group)	Jay Bhatt Drexel Librarian
10/26/09	6	Lecture: IP protection	Joe Karlin, atty, Woodcock and Washburn
11/02/09	7	Design Theory in Practice	Travis Chaney, Arrestment Systems
11/9/09	8	Design theory	Layton
11/16/09	9	Sustainable design	Behrens Incorporated
11/23/09	10	<b>Tentative: Proposal Oral Presentations 11/23 and 11/24, 2009</b> <b>Written Proposal due 5:00 pm 11/24, 2009</b> One copy of the Written Proposal to Faculty Advisor; and 2 hardcopies and 1 electronic copy (CD-ROM) to Dr. Layton. There will be a box in the Main Office to receive the Written Proposals and CD-ROMs.	Layton and Kang
11/30/09	11	Formula Hybrid team and Human Powered Vehicle team	Matt & Ray
12/7/09	12	Finals week. No lecture	

