

# GEORGE MASON UNIVERSITY

## SCHOOL OF INFORMATION TECHNOLOGY AND ENGINEERING

### **SYST 495/201 Senior System Design Project (2007/2008)**

1/24/2008

**Instructor: Dr. George L. Donohue**

**Office: Rm 121 S&T II**

**Time: MW 15:30-16:45**

**Lab: Rm 18 Senior Design Lab, S&T II**

**Office Hours: Monday after class, and Wednesday after class**

Ref: SEIDS 08 call for papers <http://www.sys.virginia.edu/seids08/>

USMA 08 call for presentations <http://www.se.usma.edu/>

**Objective:** Systems 490/495, together, provide the Capstone experience to the Systems Engineering undergraduate program. In addition to providing students the opportunity to utilize the systems engineering processes (e.g. requirements determination, work-breakdown structures, Pert Charts, test and evaluation, life cycle costing, etc.) it requires them to use their analytical skills in system modeling, simulation and decision making. SYST 495 places the primary emphasis on conducting trade-off analysis. Emphasis in these courses is also placed on written and verbal communication skill development and the creative process of engineering design. The students are asked to determine whether a Business Case exists for their designs in the Final Report that they submit in early May. Students are required to manage a complex, unstructured project using the management and teamwork skills that they have developed. The class has been divided into four project teams, each working on a real problem. Each student **MUST** maintain a personal log of all design activity, to be inspected upon demand. Each student **MUST** submit a weekly time sheet to their team timekeeper. This team timesheet is to be submitted to Dr. Donohue **monthly** (via e-mail) and is open for discussion at all major program reviews as part of the EVM review. Qualifying teams will be entered into inter-scholastic senior design competitions at the end of this semester.

#### **SEIDS 08 TRACKS**

- Data Mining and Statistics
- Simulation and Stochastic Modeling
- Human Factors and Cognitive Modeling
- Mathematical modeling and Optimization
- Risk Analysis, Technology Management and Policy
- Life Cycle Analysis
- System Economic Analysis

**Grading:** Each student's final grade will be determined as follows:

**30% Team Individualized Mid Term Exam**

**30% Final Project report and UVA paper (written)**

**25% Faculty / Sponsor Evaluation of Team Presentation**

**10% Team Project productivity self evaluation**

**5% Timesheets/Notebooks (to be submitted on demand)**

## **Semester Schedule:**

- January 23.** Review Spring Semester Schedule
- January 28.** Individual team discussions **as required**
- January 30.** Individual team discussion by appointment
- Feb. 4.** Individual team discussion by appointment (USMA registration period open)
- Feb. 6.** submit UVA abstract for review **prior to Feb 15 submission deadline**
- Feb. 11.** UVA abstract pass-back with suggested changes
- Feb. 13.** no class \_submit approved abstract to UVA electronically
- Feb. 18.** Detailed Presentation on Simulation and Analysis Status (1&2)
- Feb. 20.** Detailed Presentation on Simulation and Analysis Status (3&4)
- Feb 25.** Individual team discussion by appointment
- Feb. 27** Individual team discussion by appointment - **First Draft of UVA paper due**
- March 3.** Detailed Presentation on Simulation and Analysis Status – (1&2)
- March 5.** Detailed Presentation on Simulation and Analysis Status – (3&4)
- March 7. (UVA paper approval pass back due)**
- March 10-12 Spring Break**
- March 17. Mid Term Exam Discussion and Preparation**
- March 19. Mid Term Exam (in-class, no notes, 5 question essay exam)**
- March 24-31.** work on analysis and paper
- March 31** UVA paper draft to Donohue and Faculty for review and comment.  
**USMA Abstract due and registration deadline**
- April 2. MTE Pass-Back.** UVA paper review pass-back for corrections prior to submission – *submission permission required*
- April 7. (April 7 registration deadline)**  
**UVA Manuscript sent to UVA for peer review**
- April 9.** Individual team discussions of project status
- April 14.** Individual team discussions of project status
- April 16. USMA Abstract due for review and submission**
- April 21. DRY RUN for UVA presentation**
- April 23. DRY RUN for UVA presentation**
- April 25. UVA Conference**
- April. 28 DRAFT Final Report due for sponsor review**
- April. 30 revise final reports**
- May 5. Reports submitted for Faculty and Sponsor evaluation, Final Presentations to Faculty and Sponsors, senior graduation lunch**
- May 7. Leave for USMA at noon by university car pool vehicles**
- May 8. USMA Conference**
- May 9. Return from USMA (back by noon)**
- May 14.** Course and Team Final Evaluation, Lessons Learned (13:30-14:30)

\* presentation order: 1=Team B; 2=D; 3=A; 4=C