

George Mason University
School of Information Technology and Engineering
Department of Systems Engineering and Operations Research

Spring 2008 SYST513-001-13118

Total Systems Engineering, Reengineering, and Enterprise Integration
7:20 pm - 10:00 pm Tuesday – STII 7 - Jan 20, 2008 – May 12, 2008

Syllabus

Professor: *Dr. Stephen V. Stephenson*

Mobile Phone: 703-728-6798

E-mail: Stephen_stephenson@dell.com (please cc: sstephe3@gmu.com)

Office Hours: *By appointment*

Home Page: *Class Web Site:* <http://gmublackboard.com/webct/cobaltMainFrame.dowebct>
(required username and password)

Public Web Sites: <http://www.gmu.edu/departments/seor/syllabi/spring09.htm>

Course Description: *Prerequisite:* SYST 510 or SYST 520. Principles of strategic quality, including TQM. Quality standards including ISO9000 and 14000. Organizational leadership, cultures, and process maturity, reengineering. Quality, organization learning and reengineering approaches to enable information integration and management and environment and framework integration in the systems engineering of knowledge intensive systems. Emphasis is placed on the role of integrated product and process design teams, standard and commercial off the shelf products in enterprise integration. Architecture driven system characteristics are studied, as is transition management of legacy systems. Case studies of some current U.S. Federal governmental or commercial enterprises are presented. In addition, the professor will present topics related to "real-life" enterprise architecture, enterprise integration, systems engineering, enterprise engineering, and some practical issues with solutions from his experience in large scale systems development, operating systems, data communications, computer networks, and distributed systems integration.

Honor Code

Honor Code procedures will be strictly adhered. Students are required to be familiar with the honor code. You must not utilize unauthorized material or consultation in responding to your tests, homework, and assignments. There are several web sites that published homework solutions, project assignment programs, etc. Numerous professors used the homework solutions from the textbook as their standard grading keys and also published the solutions on the Internet. You may use those solutions as references but you are not allowed to copy them. Violations of the honor code will be reported. Obvious honor code violations (exact copy of work, etc) will be graded as 0/100 (zero percent).

Textbook:

Required (T1): Systems Engineering, Principles and Practice by Alexander Kossiakoff and William N. Sweet, John Wiley and Sons, 2003.

Reference (T2): Andrew P. Sage, *Systems Management for Information Technology and Software Engineering*. New York: John Wiley and Sons, 1995. References: Defense Acquisition Guidebook, DoD web site:

https://akss.dau.mil/dag/TOC_GuideBook.asp?sNode=R4-0&Exp=Y , Chapters 4 and 11.

References: Lectures and assigned materials will be made available on the GMU web site (<http://gmu.blackboard.com/webct/cobaltMainFrame.dowebct>).

Grades 25% - Midterm, 30% - Final, 25% - term paper, 20% - homework assignments. Two exams will be given, one approximately at the middle of the semester and one at the end of the semester. There will be a term paper assignment on total systems engineering and 4 homework assignments. The following table is used to convert the final numerical grade to a letter grade:

Grade G	Letter Grade
[96,100]	A+ or A
[92,96)	A-
[87,92)	B+
[82,87)	B
[77,82)	B-
[51,77)	C
[0, 50)	F

Schedule:

- 1. Jan 20:** Course overview, administrative matters, and introduction; Part I: Foundations of Systems Engineering (Stephenson Lectures and Chapter 1, T1)
- 2, 3. Jan 27 & Feb 3:** Part I: Foundations of Systems Engineering (Stephenson Lectures and Ref: Chapters 2-3, T1), *HW 1 Released Feb 3*
- 4, 5. Feb 10 & Feb 17:** Part I & Part II: Concept Development Stage (Stephenson Lectures and Ref: Chapters 4-5, T1), *HW #1 Due Feb 17.*
- 6. Feb 24:** Part II: Concept Development Stage (Stephenson Lectures and Ref: Chapters 6, T1) and Topics in Enterprise Integration - *HW 2 Released Feb 24*
- 7. Mar 3:** Part II: Concept Development Stage (Stephenson Lecture and Ref: Chapter 7, T1)
***** *Note: Spring Break - March 10, 2009 – No class* *****
- 8. Mar 17:** Midterm Exam - *HW2 Due March 17 – Term Paper Outlines Due*
- 9, 10. Mar 24 & Mar 31:** Part III: Engineering Development (Stephenson Lectures and Ref. Chapters 8-9, T1) *HW3 Released Mar 31*
- 11, 12. April 7 & April 14:** Part III & Part IV Post-Development Stage (Stephenson Lectures and Ref. Chapters 10-11, T1) *HW3 Due April 14- HW #4 Release April 14*
- 13, 14. April 21 & 28:** Part IV & Part V Special Topics (Stephenson Lectures and Chapters 12-14, T1) *HW4 due April 28 – Term Paper Due April 28.*
- 15. May 12, 2008** - Final Exam