SYST 520 System Design and Integration (3:3:0)..

System design and integration methods are studied and practiced, including both structured analysis and object-oriented based techniques. The course includes the development process of functional, physical, and operational architectures for the allocation and derivation of component-level requirements for the purpose of specification production; examination of interfaces and development of interface architectures. Life cycle of systems is addressed; generation and analysis of life cycle requirements. Software tools are introduced and used for portions of the systems engineering cycle.

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Course Call numbers: SYST 520 615 17279
Spring 2007: W 5:00 – 7:40 pm at Raytheon

COURSE OUTLINE (subject to change)

1/24/2007	Introduction to Systems Engineering; WebCT
1/31/2007	Operational Concepts, Use Cases and Requirements; CORE
2/7/2007	Structured Analysis, Activity modeling: IDEF0; Data Flow Diagrams; Review: Sets
2/14/2007	Data Modeling: IDEF1x and Entity Relationship Diagrams
2/21/2007	Rule Modeling; States and Events; State Transition Diagrams and Sate Charts
2/28/2007	Other Graphical Modeling techniques
3/7/2007	No class
3/14/2007	Functional Architecture Development
3/21/2007	Midterm
3/28/2007	Physical Architecture and Design
4/4/2007	Interface Design and System Integration and Quantification
4/11/2007	The Unified Modeling Language: Basic Concepts; A2
4/18/2007	The Unified Modeling Language: Diagrams; A8, A9, A11, A12
4/25/2007	Object Oriented Design: A8, A9, A11, A12
5/2/2007	The Systems Modeling Language (SySML)
5/9/2007	Final Exam

Textbooks for Course:
(1) Recommended but not required: Dennis M. Buede, *The Engineering Design of Systems,* Wiley, 2000, NY. +
(2) Required: Scott W. Ambler, *The Object Primer,* Cambridge University Press, 2004, NY. Ax denotes chapter x in Ambler

Detailed class notes by A. H. Levis and A. P. Sage

Student Evaluation Criteria: Homework 40%; Midterm 30%; Final 30%