

SYST 520 ECE 550 System Engineering Design (3.0:3)

Fall 2017

Prerequisites: Graduate standing for ECE or SYST 505 for SEOR

Description: System engineering design methods are studied and practiced, including object-oriented and structured analysis based techniques. Design description languages such as UML, IDEF0 and IDEF1x are introduced and used in carrying out complete system designs. Teams make presentations of their designs.

Instructor: Prof. Alexander H. Levis

Nguyen Eng. Room 3245

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Class Location: Nguyen Engineering 2608

Class time: Monday 4:30 – 7:10 pm

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Date	Week	Lect. #	Topics
8/28/2017	1	L1	Introduction to Systems Engineering Design and Integration
9/11/2017	2	L2	Framing the Problem: Vision, Operational Concept, Use Cases and Capabilities
9/18/2017	3	L3	Object Orientation and the Unified Modeling Language: Part I Structure
9/25/2017	4	L4	Part II: UML Behavior Diagrams; Rule Modeling
10/2/2017	5	L5	The Object Oriented Design Process: Functional Design
10/10/2017	6	L6	Object Oriented Design: Physical (System) Design
10/16/2017	7	L7	Enterprise Architecture and Architecture Frameworks
10/23/2017	8		OO Project Presentation
10/30/2017	9	L8	Structured Analysis: Activity Modeling IDEF0 DFD
11/6/2017	10	L9	Structured Analysis: Data Modeling IDEF1x ERD
11/13/2017	11	L10	Model Concordance and Functional Design
11/20/2017	12	L11	Qualification: Test and Evaluation; BPMN
11/27/2017	13	L12	Integration and SOA; Architecture Evaluation Concepts
12/4/2017	14	L13	Executable Models and Evaluation; Closure
12/18/2017			Final Exam

Suggested Textbook:Dennis M. Buede, *The Engineering Design of Systems*, Wiley, 2009, NY (3rd Edition).

Extensive lecture notes and supplementary readings will be available through Blackboard.

The Blackboard system will be used for most course activities.

Homework: There are weekly reading assignments and homework assignments

Grading: Homework sets will count for 50% of the final grade. The midterm presentation will count for 20% of the grade, and the in-class final examination for 30%.

The George Mason University Honor Code can be found at

<http://oai.gmu.edu/the-mason-honor-code-2/>