

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

Spring 2018

Prerequisites: Graduate standing for ECE or 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 Tel 703 993 1619

Best way to contact: alevis@gmu.edu Class Location: Nguyen Engineering 2608

Class time: Monday 4:30 – 7:10 pm

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Date	Week	Lect. #	Topics
1/22/2018	1	L1	Introduction to Systems Engineering Design and Integration
1/29/2018	2	L2	Framing the Problem: Vision, Operational Concept, Use Cases and Capabilities
2/5/2018	3	L3	Object Orientation and the Unified Modeling Language: Part I Structure
2/12/2018	4	L4	Part II: UML Behavior Diagrams; Rule Modeling
2/19/2018	5	L5	The Object Oriented Design Process: Functional Design
2/26/2018	6	L6	Object Oriented Design: Physical (System) Design
3/5/2018	7	L7	Enterprise Architecture and Architecture Frameworks
3/19/2018	8		OO Project Presentation
3/26/2018	9	L8	Structured Analysis: Activity Modeling IDEF0 DFD
4/2/2018	10	L9	Structured Analysis: Data Modeling IDEF1x ERD
4/9/2018	11	L10	Model Cooncordance and Functional Design
4/16/2018	12	L11	Qualification: Test and Evaluation; BPMN
4/23/2018	13	L12	Integration and SOA; Architecture Evaluation Concepts
4/30/2018	14	L13	Executable Models and Evaluation; Closure
5/14/2018			Final Exam

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

Suggested Textbook:

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

The Blackboard system will be used for most course activities.

Homework and Grading: There are weekly reading assignments and homework assignments. 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/>