

SYST 621 / ECE 674 System Architecture Design and Evaluation (3:0:3)

Fall 2016

Prerequisites: SYST 520 or ECE 550

Description: Architecture design and representation and the methodologies used to obtain them. Approaches based on system engineering constructs such as object orientation and service oriented architectures are used to design architectures and then represent them in conformance with an architecture framework such as DoDAF. Executable models of the architecture are derived to be used for architecture evaluation. Examples from current practice are used.

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SYST 621	ECE 674	System Architecture Design
		A H Levis
Date	L#	Subject
8/30/2016	L1	Systems Engineering and Architecture Design
9/6/2016	L2	Architecture Frameworks and the DoD Architecture Framework
9/13/2016	L3	Object Oriented Architecture Design & Capabilities Viewpoint
9/20/2016	L4	Operational and Data and Information Viewpoints
9/27/2016	L5	Service Oriented Architectures and Services Viewpoints
10/4/2016	L6	Systems Viewpoint
10/18/2016	L7	Petri Net Introduction
10/25/2016	L8	Colored Petri Nets I
11/1/2016	L9	Colored Petri Nets II
11/8/2016	L10	Executable Models of Architectures
11/15/2016	L11	Business Process Modeling
11/22/2016	L12	Case Studies
11/29/2016	L13	Introduction to Architecture Evaluation
12/6/2016	L14	Review and Closure
12/13/2016		Final Exam

Course notes and collateral readings will be made available for downloading through Blackboard. There are also ten papers that cover some of the material in the course and present several examples. The following textbook is required; however, it will be a good idea to have a textbook on UML and Object Oriented Design if you don't have one already from other courses.

W.M.P. van der Aalst and C. Stahl, *Modeling Business Processes - A Petri Net Oriented Approach*, The MIT Press, 2011

(ISBN - 13: 978 - 0 - 262 - 01538 - 7)

Homework: There are weekly reading assignments and homework assignments (architecture design and evaluation).

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/>