Description: Architecture design and representation and the methodologies used to obtain them. Approaches based on software engineering constructs such as object orientation and service oriented architectures as well as systems engineering constructs such as structured analysis are used to design architectures and architecture frameworks are used to describe them. Executable models of the architecture are derived to be used for architecture evaluation. The roles of the systems architect and the systems engineer are discussed. Examples from current practice are used.

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Course Outline (subject to change as this is a revised course)

1/25/2010 1. Systems Engineering and Architecture Design
2/1/2010 2. UML Review (Dr. Wagenhals)
2/15/2010 4. Architecture Design; Operational Concepts and Use Cases
2/22/2010 5. Loosely Coupled Systems and Service Oriented Architectures
3/1/2010 6. Capabilities and Project Viewpoints; Rule Modeling
3/8/2010 Spring Break
3/15/2010 7. Operational and Data Viewpoints; Data Models
3/22/2010 Midterm
4/12/2010 10. Executable Models of Architectures
4/19/2010 11. Structured Analysis approach
5/10/2010 Final Exam

Course notes and collateral readings will be made available for downloading through Blackboard. There are also five papers that cover some of the material in the course and present two examples.


Homework: There are weekly reading assignments and homework assignments.

Grading: Homework sets will count for 40% of the final grade. There will be a midterm examination (30%) and an in-class final examination (30%).