

Course Content

1. Components and Connectors
2. UML based architecture modeling
3. Interaction. Formal Models of Components, Connectors and Interactions using CCS (Calculus of Communicating Systems) and reasoning with them
4. Patterns of Software Architecture: SOA, EDA, Blackboards, Publish/subscribe, Master-slave, client-server, filters and pipes, Monitors, MVC etc.
5. Process Modeling using Petri Nets and reasoning with them
6. Process Modeling in visual BPMN (Business Process Modeling Notation)
7. Architecture Description Languages
8. Architecture Evaluation Methods and Quality Attributes for Software Architectures
9. Architecture Processes: What is architecture and how to do it
10. Ontologies : Meanings, Relationships, Entities, Domain Ontologies
11. Experiments, Programs, Take-homes, handwritten models, group term projects, demos, examples

Evaluation Components

1. Quizzes- multiple choice, fill in the blanks, with negative marking
2. Midsem
3. Endsem
4. Term Projects in teams and evaluation sessions
5. Take home programming exposure

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Slot: 1, Monday 8:30, Tuesday 9:30, Thursday 10:30

Types of References that you will be needing:

1. Lecture slides and supplementary material
2. BPMN Specification from OMG
3. Event Service Specification OMG
4. One or two Books
5. Research Papers and articles
6. Manpages of software that you will end up using
7. Additional articles to pick up background if you don't understand something being discussed in the class. e.g. UML specification

The reference material will be mentioned from time to time.