University of Tehran
School of Electrical and Computer Engineering

Course	Software Architecture		
Course type, level, credit	Optional	Graduate	3 units
Field, Major	Computer Engineering	Software	
Co-requisite(s)	-		
Prerequisite(s)	-		
Prerequisite by topic	Fundamentals of software engineering		
Goals	The aim of this course is to provide a systematic approach to analyze, design, and evaluate software architecture. The studied approaches are based on the well-known methods applied successfully in the software industry.		
Outcome	Upon successful completion of the course, students will … 1. be able to clearly specify architectural drivers of a software system 2. be able to use architectural styles, patterns, and tactics to design an architecture according to the specified drivers 3. be able to document the software architecture using suitable viewpoints 4. be able to systematically evaluate the architecture		
Topics	1. Software Architecture Definition 2. Software Architecture in the Context 3. Specifying Quality Attributes 4. Architectural Styles 5. Architectural Patterns 6. Architectural Tactics 7. Attribute-Driven Design 8. Documenting Software Architecture 9. Architectural Description Languages 10. Evaluating Software Architecture 11. Reconstructing Software Architecture 12. Product-Line Architectures		
Required software	UML Modeling Tools		

Assignments	About five homeworks and paper reviews
Projects	A term project covering the whole lifecycle
Grading	Assignments: 10 % Term Project: 30 % Final exam: 60 %
Textbook(s)	[1] Len Bass, Paul Clements, Rick Kazman, Software Architecture in Practice, 3rd edition, Addison-Wesley Professional, 2012. [2] R. N. Taylor, N. Medvidovic, and E. M. Dashofy, Software Architecture: Foundations, Theory, and Practice, Wiley, 2009.
Further readings	[1] N. Rozanski and E. Woods, Software Systems Architecture: Working With Stakeholders Using Viewpoints and Perspectives, 2nd edition, Addison-Wesley Professional, 2011.