

Course name:	Software Architecture
نام درس (فارسی)	معماری نرم افزار

Course no: 40646	Unit: 3	Upper graduate course
Prerequisite:	Requires:	
Provider: jafar habibi		

Goals:

The main goal of this course is to familiar students with software architecture concepts, its position, process of creating an architecture, documentation and evaluation of the software architecture. This goal consist of the following sub-goals:

- Understanding the concept of the architecture driver and the impact of it on the software systems structure.
- Finding technical, organic and business role of the software architecture.
- Recognizing key structure of the architecture (styles, tactics, and so on)
- Identifying principles of software architecture documentary and way of representing it.
- Realizing the impact of the COTS in designing architecture.
- Being familiar with softwarequality attributes and way of evaluating architecture.
- Being aware of the future of the software architecture.

Topics:

- Software architecture definitions, architecture drivers.
- Architecture life cycle.
- Functional and non-functional requirements.
- The role of the software architecture to achieve to software quality attribute.
- Position of the software architecture in software development processes
- Architecture views and structures.
- Technics and methods of designing architecture.
- Tactics, styles and patterns of the architecture.
- Designing architecture and the way of achieving quality attributes.

- Architecture documentary and architecture description languages(ADLs).
- Method of evaluating software architecture.
- Software architecture recovery.
- Domain Specific Software Architecture (DSSA)
- Software product line architecture
- Service oriented architecture
- Development based on software architecture components.
- Cloud computing
- Advanced topics in software architecture.
- Future of the software architecture.

References:

- Software Architecture: Perspectives on an Emerging Discipline, by Mary Shaw and David Garlan, Prentice Hall 1996
- Software Architecture in Practice, Second Edition, by Len Bass, Paul Clements, and Rick Kazman, Addison-Wesley 2003
- Documenting Software Architectures: Views and Beyond, by Clements, et al. Addison-Wesley 2003
- Architecting Software Intensive Systems: A Practitioner's Guide, by Anthony J. Lattanze, Taylor and Francis/Auerbach 2008