



**Mehran University of Engineering and Technology,
Jamshoro Department of Software**

ORIGINAL SUBMITTED SYLLABUS

Title of Subject	:	Advanced Software Requirements Engineering
Code	:	SE601
Discipline	:	Software Engineering (1 st Semester)
Effective	:	20 ME SE and onwards
Pre-requisite	:	None
Assessment	:	10% Sessional 30% Mid Semester 60% Final Semester Examination
Credit Hours	:	3+ 0
Minimum Contact Hours:		42

Specific Objectives of course:

- To describe the requirements engineering process
- To effectively analyze software requirements for the development of cost-effective and efficient technical solutions.
- To document effective requirements in Software Requirements Specification (SRS) using clear, unambiguous requirements.

Course outline:

- Software Requirements Fundamentals: Product and process requirements, Functional and non-functional requirements, Emergent properties, Quantifiable requirements, System and software requirements. Requirements Process: Process models, Process actors, Process support and management, Process quality and improvement.
- Requirements Analysis: Requirements sources, Elicitation techniques. Requirements Analysis: Requirements classification, Conceptual modeling, Architectural design and requirements allocation, Requirements negotiation, Formal analysis.
- Requirements Specification: System definition document, System requirements document, Software requirements specification.
- Requirements Validation: Requirements reviews, Prototyping, Model validation, Acceptance tests.
- Practical Considerations: Iterative nature of the requirements process, Change management, Requirements attributes, Requirements tracing, Measuring requirements. Software Requirements Tools. Current research topics in requirement engineering.

BOOKS RECOMMENDED

1. Software Engineering: A Practitioner's Approach, Roger S. Pressman, Bruce R. Maxim, 8th Ed, McGraw-Hill Education, 2015.
2. Object-Oriented Analysis, Design and Implementation, Brahma Dathan, Sarnath Ramnath, 2nd Ed, Universities Press, India, 2014.
3. Software Modeling and Design: UML, Use Cases, Patterns, and Software Architectures, Hassan Gomaa, Cambridge University Press, 2011.
4. Applying UML & Patterns: An Introduction to Object-Oriented Analysis & Design and Iterative Development, Craig Larmen, 3rd Edition.
5. Head First Design Patterns, Eric Freeman, Elisabeth Freeman, Kathy Sierra and Bert Bates, O'Reilly Media, Inc., 2004.

Approval:

Board of Studies:
AS&RB:
Academic Council:

Res.No.02
Res.No. 154.17(a)
Res.No.94.4

Dated:25-09-2018
Dated:04-12-2018
Dated:27-03-2019