



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

ORIGINAL SUBMITTED SYLLABUS

Title of Subject	:	SOFTWARE QUALITY & TESTING
Code	:	SE701
Discipline	:	Software Engineering (3 rd 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:		Marks : 100+00

Specific Objectives of course:

- To learn standards of quality models
- To learn deployment of various software testing techniques and methods

Course outline:

- **SOFTWARE QUALITY ASSURANCE**
Quality, Quality Control, Quality Assurance, SQA, FTR, Statistical Quality Assurance, Software Reliability, SQA Plan, ISO Standards, Management Issues, The Reuse Process, Describing Reusable Components, Impact on Quality, Productivity and Cost
- **SOFTWARE TESTING TECHNIQUES**
Software Testing Fundamentals, Testing Objectives, Testing Principles, Testability, WHITE-BOX Testing, Control Structure Testing, BLACK- BOX Testing
- **SOFTWARE TESTING STRATEGIES**
A Software Testing Strategy, Criteria for Completion of Testing, Unit Testing, Integration Testing, Validation Testing, System Testing, Debugging Process
- **OBJECT-ORIENTED TESTING**
Testing OO Analysis and OO Design Models, OO Testing Strategies, Testing Methods for the Classes, Inner Class Test Case Design
- **CLEAN ROOM SOFTWARE ENGINEERING**
Clean Room Strategy, Design Refinements and Verification, Clean Room Testing
- **RE-ENGINEERING**
Business Process Re- Engineering (BPR), Principles of BPR, BPR Model, Software Re-Engineering, Software Maintenance, Software Re-Engineering, Process Model, Forward and Reverse Engineering

BOOKS RECOMMENDED

1. Software Quality Assurance: Integrating Testing, Security, and Audit (Internal Audit and IT Audit), Abu Sayed Mahfuz, Auerbach Publications, [Latest Edition].
2. Software Quality Engineering, Testing, Quality Assurance, and Quantifiable improvements, Jeff Tian, IEEE Computer Society, [Latest Edition]. [SEP]
3. Introduction to Software Engineering, P Ammann and J Offutt, Cambridge University Press, [Latest Edition]. [SEP]
4. Software Engineering: A Practitioner's Approach, Roger S. Pressman, Bruce R. Maxim, [Latest Edition], McGraw-Hill Education. [SEP]

Approval:

Board of Studies:
AS&RB:
Academic Council:

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