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

ORIGINAL SUBMITTED SYLLABUS

Title of Subject	**:**	**SOFTWARE TESTTING & QUALITY ASSURANCE**
Code	**:**	SE705
Discipline	**:**	Software Engineering (3rd Semester)
Effective	**:**	24 ME SE and onwards
Pre-requisite	**:**	--
Assessment	**:**	10% Sessional 30% Mid Semester 60% Final Examination
Credit Hours	**:**	3+0 Marks : 100+00
Minimum Contact Hours:		42

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

Approval:

Board of Studies:	**Res. No. 2.3**	**Dated: 21-07-2023**
Board of Facutly	**Res. No. 21.9**	**Dated: 07-12-2023**
AS&RB:	**Res. No.**	**Dated:**
Academic Council:	**Res. No.**	**Dated:**