Software Quality Assurance

Semester III	Subject Code: MSE31906	Lectures: 60

Objectives:
The syllabus aims in equipping students with, • to enable student to learn Software Quality Assurance • to enable student to do good practices with the help of various techniques, Strategies and Tools • to enable student to improve quality of project

Unit 1: Software quality and SQA Components	8
Chapter 1 : Software quality • Definition • Software errors, software faults and software failures • Software quality assurance – definition and objectives • Software quality assurance vs. software quality control • The objectives of SQA activities	4
Chapter 2 : Pre-project SQA Components • Contract Review • Development and Quality Plan	4

Sr. No.	BOS member		Sign
1	Dr. Razak Sayyed	Subject Expert	
2	Prof. Abhijit Sathe	Subject Expert	
3	Prof. Sonali Deshmukh	Subject Expert	
4	Mr. Sumeet Kakroo	Industry Expert	
5	Ms. Jyoti Sharma	Alumni	
6	Prof. Ashwini Kulkarni	Chairman	
7	Prof. Swati Pulate	Internal Faculty	
8	Prof. Smita Borkar	Internal Faculty	

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Unit 2: SQA- Project life cycle and Infrastructure Components	18
Chapter 3 : SQA components in Project life cycle activities assessment • Verification and Validation • Various types of Reviews • Inspections • Walkthrough • Software testing • Impact of CASE Tools	10
Chapter 4 : SQA Infrastructure Components • Procedures and procedure manuals • Templates and Checklists • Staff training • Corrective and preventive actions • Documentation control	8

Unit 3: Standardization and Configuration Management	13
Chapter 5 : Software Quality Factors • Mccall's Quality Model • Product, Process quality metrics	5
Chapter 6 : Standardization • ISO 9001 and ISO 9000-3 • SEI-CMM, • IEEE 1012 standard • ISO/IEC 12207 standard	4

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Chapter 7 : Configuration Management • Change control • Release and version control • Software configuration management audit	**4**

Unit 4: Quality Improvement Technique and cost	**9**
Chapter 8 : Quality Improvement Technique • Pareto Diagrams • Cause-Effect Diagrams • Scatter Diagrams • Run Charts	**4**
Chapter 9 : Quality Costs • Quality Cost Measurement • Utilizing Quality Costs for Decision-Making	**5**

***Contact hours – 12 hours**

Reference Books:

1. Pearson, *Software Quality Assurance from theory to implementation,* Danial Galin
2. McGraw-Hill, *Software Project management,* Edwin Bennatan
3. McGraw-Hill, *Software Engineering,* Roger S. Pressman,TMH,7Th Ed.
4. Alpha Science, *Software Quality Assurance : Principles and Practice,s* Nina Godbole,

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