

Software Quality Assurance

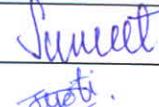
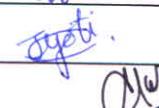
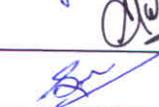
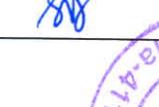
Semester III	Subject Code: MSE31906	Lectures: 60
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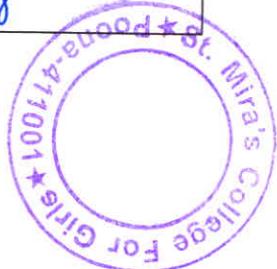
Objectives:

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

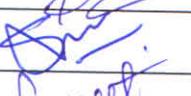
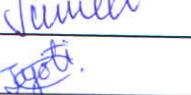
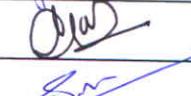
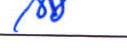
Unit 1: Software quality and SQA Components	8
Chapter 1 : Software quality <ul style="list-style-type: none"> • Definition • Software errors, software faults and software failures • Software quality assurance – definition and objectives • Software quality assurance vs. software quality control • The objectives of SQA activities 	4
Chapter 2 : Pre-project SQA Components <ul style="list-style-type: none"> • Contract Review • Development and Quality Plan 	4

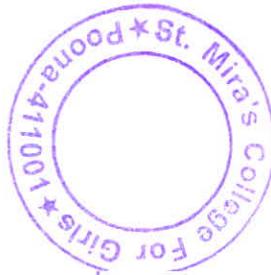
Sr. No.	BOS member		Sign
1	Dr. Razak Sayyed	Subject Expert	
2	Prof. Abhijit Sathe	Subject Expert	
3	Prof. Sonali Deshmukh	Subject Expert	
4	Mr. Sumeet Kakroo	Industry Expert	
5	Ms. Jyoti Sharma	Alumni	
6	Prof. Ashwini Kulkarni	Chairman	
7	Prof. Swati Pulate	Internal Faculty	
8	Prof. Smita Borkar	Internal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



Unit 2: SQA- Project life cycle and Infrastructure Components	18
Chapter 3 : SQA components in Project life cycle activities assessment <ul style="list-style-type: none"> • Verification and Validation • Various types of Reviews • Inspections • Walkthrough • Software testing • Impact of CASE Tools 	10
Chapter 4 : SQA Infrastructure Components <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • McCall's Quality Model • Product, Process quality metrics 	5
Chapter 6 : Standardization <ul style="list-style-type: none"> • ISO 9001 and ISO 9000-3 • SEI-CMM, • IEEE 1012 standard • ISO/IEC 12207 standard 	4

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Chapter 7 : Configuration Management

4

- Change control
- Release and version control
- Software configuration management audit

Unit 4: Quality Improvement Technique and cost

9

Chapter 8 : Quality Improvement Technique

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- Pareto Diagrams
- Cause-Effect Diagrams
- Scatter Diagrams
- Run Charts

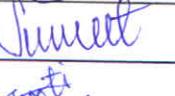
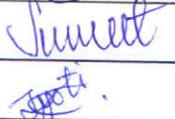
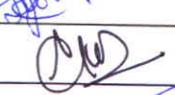
Chapter 9 : Quality Costs

5

- Quality Cost Measurement
- Utilizing Quality Costs for Decision-Making

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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