

MAJOR BASED ELECTIVE –I -SOFTWARE QUALITY ASSURANCE

UNIT – I

Software Quality in Business Context : Defining Quality – Need for Quality – Quality Control Vs Quality assurance – Quality assurance at each phase of SDLC.

Managing software Quality in an organisation: QMS – Need for SQA group in an organisation.

Planning for SQA: Software Quality assurance plans – Organizational level initiatives. (Chapters 1.1, 1.3 – 1.5, 2.1, 2.4, 3.1, 3.2)

UNIT – II

Product Quality and Process Quality: Introduction – Software systems evolution – Product quality – Models for software product Quality – Process Quality.

Software Measurement and Metrics: Introduction – Measurement during s/w life cycle context – Defect metrics – Metrics for s/w maintenance – Classification of s/w metrics – Requirements related metrics – Measurements and process improvement – Measurement principles. (Chapters 4, 5.1 – 5.9)

UNIT – III

Walkthroughs and Inspections : Introduction – Structured walkthroughs – Inspections – Various roles and responsibilities involved in Reviews / Inspections – Some psychological aspects of reviews.

Software Configuration Management : Need for SCM – Software configuration management activities – Personnel in SCM activities.(Chapters 6.2 - 6.6, 7.2, 7.3, 7.5)

UNIT – IV

ISO 9001 : ISO 9000 – Origin of ISO 9000 – Work of ISO – ISO standards development process. ISO 9001 : 2000 – ISO Certification – Assessment / Audit preparation – Assessment process - ISO consulting services and consultants.

Software CMM and other Process Improvement Models : The Capability Maturity Model for software - An overview – Practices followed at mature organizations – Types of CMM Models. (Chapters 8.2 – 8.5, 8.7, 8.9, 8.10, 8.11, 9.2, 9.3, 9.5)

UNIT – V

Software Testing : Purpose of testing – Differences between inspection and testing – Testing Vs debugging – Testing life cycle – Roles and responsibilities in testing – Test artifacts – The test plan – The V- Model for testing phases – Testing techniques – Test metrics - Risk-based testing – Human issues and challenges in testing.(Chapter 10 Except 10.13, 10.14, 10.15, 10.17)

TEXT BOOK :

Nina S. Godbole, Software Quality Assurance Principles and Practice, Narosa publishing house.

REFERENCE BOOKS :

1. Alan C. Gillies, Software Quality (Theory and Management), Second Edition, Thomson International student edition.
2. Mordechai Ben – Manachem, Garry S. Marliss – Software Quality, Producing Practical, Consistant Software, Thompson Learning.