



Course Name: Software Quality Models

(UG/PG): PG

Number of Credits: 3

Level: 4

Learning Objective(s): This course will help the student to acquire the Knowledge of software quality structure, its views and dimensions in the software organizations. Apart from that, this course focuses on building up the capability in the student on software process quantification, identification of critical quality dimensions, preparation of business plan for quality system, planning of activities to measure, analyses, and assure process quality. At the end of this course, it will generate a confidence in the student to add the value in software quality management system in the software organization.

Pedagogy:

Case study discussion
Class work
Role Play
Quiz

Pre-learning: Understanding of Software Development Methodologies
Hands on any programming language will add value to the course learning.

Course Outline:

Sr. No.	Topics	Hours
1	Introduction to Quality	4
2	Quality Principles and Concepts	2
3	Software Quality Factors	2
4	Quality Planning	2
5	Software Reviews	2
6	Cost of Quality	1
7	Documentation Control	2
8	Configuration Management	2
9	Software Risk Management	2
10	Defect Management	2

Sr. No.	Topics	Hours
11	Software Measurements and Metrics	2
12	Metrics Baselines	2
13	Organizational Process Quality Set up	2
14	SEPT Group in Organization Quality Set up	2
15	Introduction to ISO 9001	2
16	Internal Audits	2
17	Overview of CMMI	2
18	ITIL	2
19	TQM	2
20	Service Quality Model	2
21	Customer Satisfaction	2
22	Continuous Process Improvement	2

Book References:

1. Godbole Nina, Software Quality Assurance: Principles and Practices, Alpha Science International Ltd, 2004
2. Kan Stephen, Metrics and Models in Software Quality Engineering, Pearson 2007
2. Horch John W. , Practical Guide to Software Quality Management
3. Fenton, N. E., and S. L. Pfleeger, Software Metrics: A Rigorous Approach, 2nd ed., Boston: International ThomsonComputer Press, 1997
4. Jones, C., Software Assessments, Benchmarks, and Best Practices, Boston: Addison-Wesley, 2000

General Reading

1. Basili, V. R., and J. D. Musa, "The Future Engineering of Software: A Management Perspective," IEEE Computer, 1991, pp. 90-96.
2. Basili, V. R., and D. M. Weiss, "A Methodology for Collecting Valid Software Engineering Data," IEEE Transactions on Software Engineering, Vol. SE-10, 1984, pp. 728-738.
3. Bowen, T. P., "Specification of Software Quality Attributes," RADC-TR-85-37 (3 volumes), Rome Air Development Center, February 1985.
4. Crosby, P. B., Quality Is Free: The Art of Making Quality Certain, New York: McGraw-Hill, 1979 .
5. Deming, W. E., Out of the Crisis, Cambridge, Mass.: Massachusetts Institute of Technology, 1986.

6. Feigenbaum, A. V., Total Quality Control: Engineering and Management, New York: McGraw-Hill, 1961 .
7. Guaspari, J., I Know It When I See It: A Modern Fable About Quality, New York: American Management Association, 1985.

Suggested Evaluation Methods:

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member					
Designation					
Org. / Inst.					
Signature					

Name of the Expert:

Signature:

Date: