

NIRMA UNIVERSITY

Institute:	Institute of Technology
Name of Programme:	Integrated B.Tech.(CSE)-MBA
Course Code:	CSI0704
Course Title:	Software Project Management and Quality Assurance
Course Type:	Core
Year of Introduction:	2021-22

Credit Scheme

L	T	Practical Component				C
		LPW	PW	W	S	
3	0	2	-	-	-	4

Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

1. interpret various phases of software project management and quality assurance
2. apply the feasibility analysis in project management and network analysis tools for cost and time estimation.
3. implement a quality software project through effective team-building, planning, scheduling and risk assessment
4. develop skills to use modern software project management and development tools

Syllabus: Total Teaching hours: 30

Unit	Syllabus	Teaching hours
Unit-I	<p>Software Project Management Concepts: The Management Spectrum, People, The Product, The Process, The W⁵HH Principle</p> <p>Project Scheduling: Management Activities, Project Planning, Project Scheduling, The Relationship Between People and Effort, defining a Task Set for the Software Project, Activity Network, Time-Line Chart</p>	06
Unit-II	<p>Process and Project Metrics: Metrics in Process and Project Domains, Software Measurement, Size-Oriented Metrics, Function-Oriented Metrics, UseCase-Oriented Metrics, Metrics in Software Quality, Defect Removal Efficiency, Integrating Metrics within the Software Process</p> <p>Estimation for Software Projects: LOC-based Estimation, FP-based Estimation, UseCase-based Estimation, COCOMO I and II Model, Estimation of Object-Oriented Projects, The Make/Buy Decision</p>	08
Unit-III	<p>Risk Management: Reactive versus Proactive Risk Strategies, Software Risks, Risk Identification, Risk Projection, Risk Refinement, Risk Mitigation, Monitoring, and Management, The RMMM Plan</p> <p>Project Execution and Closure: Reviews, Project Monitoring and Control, Project Tracking, Milestone Analysis, Defect Analysis and Prevention, Project Closure</p>	05

Unit-IV	Quality Concepts: Software Quality, Software Quality Requirements, Software Quality Models, Software Quality Standards Review Techniques: Cost Impact of Software Defects, Defect Amplification and Removal, Review Metrics and Their Use, Informal Reviews, Formal Technical Reviews	05
Unit-V	Software Quality Assurance: Elements of Software Quality Assurance, SQA Tasks, Goals, and Metrics, Formal Approaches to SQA, Statistical Software Quality Assurance, Software Reliability, The SQA Plan Software Configuration Management: SCM Activities, Baselines, Software Repository and Its Branches, Configuration Control, Software Configuration Audit	06

Self-Study: The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents

- Suggested Readings/References:
1. Roger Pressman, Software Engineering A Practitioner's Approach, McGraw Hill Publication
 2. Claude Y. Laporte, Alain April, Software Quality Assurance, Wiley
 3. PankajJalote, Software Project Management in Practice, Addison-Wesley Professional
 4. Daniel Galin, Software Quality Assurance: From Theory to Implementation, Pearson Education
 5. Ian Sommerville, Software Engineering, Addison – Wesley

Suggested List of Experiments:	Sr. No.	Title	Hours
	1	Define modules of a software project & design the project plan (Using Microsoft Project) for the same and identify deliverables with time line.	04
	2	To explore and perform software project management using Zepel tool.	02
	3	To explore and perform software project development using JIRA tool.	02
	4	To explore and perform software project management and development using Github tool.	02
	5	To explore and perform project functionalities using Kanbanize tool.	02
	6	To explore and perform testing for quality assurance using Jenkins tool.	04
	7	To explore and perform project management activities using GitLab tool.	04

Suggested Case List: -NA-

