GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 4th Semester
Branch: Software Development
Subject Name: Software Testing and Project Management
Subject Code: 1140201

With effective from academic year 2018-19

Type of course: Core
Prerequisite: Software Engineering
Rationale: The course aims to provide an understanding management issues during software project management. It provides holistic views of different aspect of development process necessary for the management of the project which includes various activities, resources, quality, cost and system configuration etc. It also provides the student the detail understanding of software testing methods.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory		Practical		
L	T	P	C	University exams (ESE)	Internal evaluation (PA)	External Practical /viva Exam(ESE)	Internal Practical /viva Exam(PA)	
3	-	-	3	50	-	-	-	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Teaching Hrs.	Module % Weightage
1	**UNIT–I** **Testing basics and Development Models:** Principals and context of testing in software production, Usability and Accessibility Testing, Phases of Software Project, Process models to represents different phases, Software Quality Control and its relation with testing, validating and verification, Software Development life cycle models, various development models. **White Box Testing:** White Box Testing - Static Testing, Structural Testing-Unit code functional testing, Code coverage testing, code complexity testing, **Black Box Testing-** What? Why and when to do Black box testing, Requirements based testing, Positive and Negative Testing, Boundary value testing, Decision Tables, Equivalence Partitioning, State Based or Graph Based Testing, Compatibility Testing, User Documentation Testing, Domain Testing.	10	20
2	**UNIT–II** **Integration Testing:** Introduction and types of integration testing, Scenario testing, defect bash. **System and Acceptance Testing-** Overview, functional and non-functional testing, Acceptance testing. Overview of some software testing tools: WinRunner, LoadRunner, Test Director.	8	20

	(Some practical should be conducted using these tools)		
3	**UNIT–III** **Performance Testing-** Introduction, factors related to performance testing, methodology for performing testing, Regression Testing, **Ad hoc Testing-** Overview, Buddy & pair testing, Exploratory testing, Interactive testing, Agile and extreme testing. **Testing of Object Oriented Testing –** Introduction, Differences in OO testing.	8	20
4	**UNIT–IV** **Software Project Management:** Overview, Software Project Management Framework, Software Development life cycle, Organization Issues and Project Management, Managing Processes, Project Execution, Problems in Software Projects, Project Management Myths and its clarifications. **Software Project Scope:** Need to scope a software project, scope management process, communication techniques and tools, communication methodology **Software Requirement Gathering and Resource allocation:** Requirement specifications, SRS Document preparation, Resources types for a software projects, requirement for resources allocation.	8	20
5	**UNIT–V** **Software Project Estimation:** Work Breakdown structure (WBS), steps in WBS, Measuring efforts for a project, techniques for estimation – SLOC, FP, COCOMO and Delphi methods. **Project Scheduling:** Scheduling and its need, scheduling basics, Gannt Chart, Network scheduling techniques, Pert and CPM **Using a Project Management Tool:** Introduction to MS Project 2000, Managing tasks in MS Project 2000, Tracing a project plan, creating and displaying project information reports.	8	20
	Total	**42**	

Reference Books:

1. Software Testing & Quality AssuranceTheory and Practice, Kshirsagar Naik and Priyadarshi Tripathy, Wiley Student edition
2. Software Testing, M G Limaye, Tata McGraw-Hill Education, 2009
3. Software Project Management, Sanjay Mohapatra, Cengage Learning
4. Software Engineering: A practical Approach, Roger S. Pressman, McGraw-Hill

GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 4th Semester
Branch: Software Development
Subject Name: Software Testing and Project Management
Subject Code: 1140201

With effective from academic year 2018-19

Suggested Specification table with Marks (Theory): (For BVOC only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	0	0	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Course Outcomes:

Sr. No.	CO Statement	Marks % Weightage
CO-1	Understand concepts of testing and development models.	20
CO-2	Understand different types of testing.	20
CO-3	Understanding of Object Oriented Testing and test case.	20
CO-4	Understanding of detail methodologies of software project management.	20
CO-5	Learning of different project management tools.	20

Laboratory work: NA

List of Open Source Software/learning website :

Students must refer to following sites to enhance their learning ability.
1) Vlabs.iitb.ac.in
2) NPTEL tutorials
3) http://www.opensourcetesting.org/
4) http://www.onestoptesting.com/
5) http://opensource.com/business/14/1/top-project-management-tools-2014