

COURSE CODE	COURSE TITLE	L	T	P	C
1152IT132	Software testing	3	0	0	3

Course Category:

~~Foundation (0) / Program Core (1) / Program Elective (2) / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry – Higher Learning Institute Interaction (7).~~

a. Preamble :

Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Software testing can also provide an objective, independent view of the [software](#) to allow the business to appreciate and understand the risks of software implementation. Test techniques include the process of executing a program or application with the intent of finding [software bugs](#) (errors or other defects).

b. Prerequisite Courses:

Software engineering

c. Related Courses:

Software engineering and project management.

d. Course Educational Objectives :

Students undergoing this course are expected:

- Ability to apply software testing knowledge and engineering methods.
- Have an ability to design and conduct a software test process for a software testing project.
- To identify the needs of software test automation, and define and develop a test tool to support test automation.(c)
- Identify various software testing problems, and solve these problems by designing and selecting software test models, criteria, strategies, and methods.

e. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Illustrate the concepts in software testing, including software testing objectives, process, criteria, strategies, and methods	K2
CO2	Demonstrate software test automation problems and solutions	K2
CO3	Explain the quality measurement of software using software metrics	K2
CO4	Discuss the various models for software quality assurance	K2
CO5	Illustrate the various testing projects	K2

f. Correlation of COs with POs :

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M											
CO2		M										
CO3				M								
CO4	M											
CO5	M				M							
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H- High; M-Medium; L-Low

g.Course Content :

UNIT I TESTING FUNDAMENTALS:

Principles of testing- Software development life cycle models-Types of testing- White box testing- Black box testing- Integration Testing –System and acceptance testing- Performance testing -Regression testing – Internalization testing – Ad hoc testing – Testing of object oriented systems – Usability and accessibility testing.

UNIT II TEST MANAGEMENT AND AUTOMATION: Introduction – Test Planning – Test Management –Software test automation – Scope of automation – Test automation tools – Generic requirement for test tool/framework – Selecting a test tool – Challenges in automation.

UNIT III SOFTWARE QUALITY METRICS: Software Measurement and Metrics – Measurement Theory – Software quality metrics – Product quality metrics – Software maintenance metrics – Collecting software engineering data.

UNIT IV SOFTWARE QUALITY ASSURANCE: Software quality in business context – Planning for software quality assurance – Product quality and process quality – Software process models – ISO – Capability Maturity Model – CMMi – People CMM – Test Maturity Model.

UNIT V TESTING PROJECTS: Managing Testing projects and groups – Legal consequences of defective software – Managing a testing group – Role of testing group.

TOTAL: 45 periods

Learning Resources

i.References:

1. Gopalswamy Ramesh and Srinivasan Desikan, “Software Testing: Principles and Practices”, Pearson Education, New Delhi, 2006.
2. Nina S Godbole, “Software Quality Assurance: Principles and Practice”, Narosa Publishers, New Delhi, 2004.
3. Glenford J Myers, Corey Sandler, Tom Badgett and Todd M Thomas, “The Art of Software Testing”, Wiley, USA, 2004.
4. Ilene Burnstein, “Practical Software Testing”, Springer – Verlag, New Delhi, 2003.