MAHENDRA ENGINEERING COLLEGE (Autonomous)-Syllabus						R 2015
DEPARTMENT	INFORMATION TECHNOLOGY		Programme Code & Name			IT
SEMESTER-VI						
COURSE CODE	COURSE NAME	PERIODS/WEEK			CREDIT	MAXIMUM MARKS
		L	T	P	C	
	SOFTWARE TESTING	3	0	0	3	100

Objectives	• Expose the criteria for test cases. • Learn the design of test cases. • Be familiar with test management and test automation techniques. • Be exposed to test metrics and measurements

UNIT-I	INTRODUCTION	9

Testing as an Engineering Activity. Testing as a Process. Testing axioms. Basic definitions. Software Testing Principles. The Testers Role in a Software Development Organization. Origins of Defects. Cost of defects. Defect Classes. The Defect Repository and Test Design. Defect Examples. Developer/Tester Support of Developing a Defect Repository. Defect Prevention strategies

UNIT-II	TEST CASE DESIGN	9

Test case Design Strategies – Using Black Bod Approach to Test Case Design – Random Testing – Requirements based testing – Boundary Value Analysis – Equivalence Class Partitioning – State-based testing – Cause-effect graphing – Compatibility testing – user documentation testing – domain testing – Using White Box Approach to Test design – Test Adequacy Criteria – static testing vs. structural testing – code functional testing – Coverage and Control Flow Graphs – Covering Code Logic – Paths – code complexity testing – Evaluating Test Adequacy Criteria

UNIT-III	LEVELS OF TESTING	9

The need for Levers of Testing – Unit Test – Unit Test Planning – Designing the Unit Tests – The Test Harness – Running the Unit tests and Recording results – Integration tests – Designing Integration Tests – Integration Test Planning – Scenario testing – Defect bash elimination System Testing – Acceptance testing – Performance testing – Regression Testing – Internationalization testing – Ad-hoc testing – Alpha, Beta Tests – Testing OO systems – Usability and Accessibility testing – Configuration testing – Compatibility testing – Testing the documentation – Website testing

UNIT-IV	TEST AMANAGEMENT	9

People and organizational issues in testing – Organization structures for testing teams – testing services – Test Planning – Test Plan Components – Test Plan Attachments – Locating Test Items – test management – test process – Reporting Test Results – The role of three groups in Test Planning and Policy Development – Introducing the test specialist – Skills needed by a test specialist – Building a Testing Group.

UNIT-V	TEST AUTOMATION	9

Software test automation – skill needed for automation – scope of automation – design and architecture for automation – requirements for a test tool – challenges in automation – Test metrics and measurements – project, progress and productivity metrics.

TOTAL PERIODS 45

TEXT BOOKS :

1. Srinivasan Desikan and Gopalaswamy Ramesh, "Software Testing – Principles and Practices", Pearson Education, 2013.
2. Ron Patton, "Software Testing", Second Edition, Sams Publishing, Pearson Education, 2007.

REFERENCE BOOKS:

1. Ilene Burnstein, " Practical Software Testing", Springer International Edition, 2003.
2. Edward Kit," Software Testing in the Real World – Improving the Process", Pearson Education, 2001.
3. Boris Beizer," Software Testing Techniques" – 2nd Edition, Van Nostrand Reinhold, New York, 1990.
4. Aditya P. Mathur, "Foundations of Software Testing _ Fundamental Algorithms and Techniques", Dorling Kindersley (India) Pvt. Ltd., Pearson Education, 2008.