MANGALORE UNIVERSITY

DEPARTMENT OF M.Sc. COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAS409:SOFTWARE TESTING AND AUTOMATION		
Hours/Week: 4 **Credits : 4**		**I.A. Marks: 30** **Exams. Marks: 70**

Course Outcomes:

CO1: Investigate the reason for bugs and analyze the principles in software testing to prevent and remove bugs.

CO2: Implement various test processes for quality improvement

CO3: Design test planning.

CO4: Manage the test process

CO5: Apply the software testing techniques in commercial environment

CO6: Use practical knowledge of a variety of ways to test software and an understanding of some of the tradeoffs between testing techniques.

UNIT-I	**12 Hours**

Introduction to Testing – why and what, Why is testing necessary? What is testing? Role of Tester, Testing and Quality, Overview of STLC Software Testing Life Cycle - V model, SDLC vs. STLC, different stages in STLC, document templates generated in different phases of STLC, different levels of testing, different types of testing, Static Testing, Static techniques, reviews, walkthroughs.

UNIT-II	**12 Hours**

Basics of test design techniques, Various test categories, test design techniques for different categories of tests. Designing test cases using MS-Excel. Test management, Documenting test plan and test case, effort estimation, configuration management, project progress management. Use of Testopia for test case documentation and test management.

UNIT-III	**12 Hours**

Defect management, Test Execution, logging defects, defect lifecycle, fixing / closing defects. Use of Bugzilla for logging and tracing defects. Test Data Management, Test Data Management –Overview, Why Test Data Management, Test Data Types, and Need for Test Data Setup, Test Data Setup Stages, and Test data management Challenges. Creating sample test data using MS-Excel Basics of Automation testing, Introduction to automation testing, why automation, what to automate, tools available for automation testing.

UNIT-IV	12 Hours

Basics of Automation testing using Selenium**,** Introduction to Selenium, using Selenium IDE for automation testing, using Selenium Web driver for automation testing, understanding Test NG framework with Selenium Web driver for automation testing

REFERENCE BOOKS
1. Rex Black, Managing the Testing Process, John Wiley, 2001, 2 nd Edition
2. Dorothy Graham, Erik van Veenendaal, Isabel Evans, Foundations of Software Testing, Rex Black
3. Elfriede Dustin , Implementing Automated Software Testing - How to Save Time and Lower CostsWhile Raising Quality