Course Description: This course has a comprehensive survey of software maintenance and testing, principles, methodologies, management strategies, techniques and tools. Software testing at the unit, subsystem and system levels using various test design techniques, as well as integration, regression, and system testing methods, and software testing tools. Designing and implementing software technologies to increase maintainability and testability; evaluating software for change and validating software changes.

Learning Objectives:

1. Understand and communicate basic software testing terminology, principles and techniques
2. Develop unit, module, subsystem, integration and system test cases for a variety of systems including object-oriented, web-based, concurrent, embedded and distributed systems
3. Apply quantitative, technical and practical testing methods and tools for testing and modifying evolving software
4. Design and implement software for easier testing, maintainability and reuse
5. Evaluate software for change impact and validate software changes
6. Recognize the roles and responsibilities of a software test engineer

Bibliography: