

CS 589: Software Testing and Analysis

Objectives

Students will:

- Understand the theoretical aspects of software testing.
- Demonstrate the knowledge of the existing testing methods.
- Demonstrate the knowledge of static and dynamic analysis methods.
- Demonstrate the knowledge of applying testing and analysis methods in software development and maintenance.

Prerequisites

- CS 487.

Syllabus

- Introduction to software testing and analysis
- Specification-based testing techniques
- Code-based testing techniques
- Unit testing
- Integration testing
- OO-oriented testing
- Model-based testing
- Static analysis
- Dynamic analysis
- Regression testing
- Methods of test data generation and validation
- Program slicing and its application
- Reliability analysis
- Formal methods; verification methods; oracles
- System and acceptance testing

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