

SYLLABUS
PART I
EDISON STATE COMMUNITY COLLEGE
CIS 126S SOFTWARE TESTING IN PYTHON
2 CREDIT HOURS

COURSE DESCRIPTION

Continuation of software testing using the Python programming language with an emphasis on software testing principles (DRY, KISS, and F.I.R.S.T.). Students will also learn about code coverage, test automation, code refactoring, assertions, context managers, decorators, integration testing, unit testing, test documentation, TDD, BDD, and best practices for software testing. Prepares students for the Certified Associate in Testing with Python (PCAT) certification exam. Prerequisite: CIS 116S and CIS 121S. Lab fee.

COURSE GOALS

The student will:

Bloom's Level		Program Outcomes
2	1. Explain the importance of software testing.	3, 4, 7
2	2. Explain the differences between various types of software testing.	3, 4, 7
4	3. Analyze, run, and implement the output of unit tests.	3, 4, 7
4	4. Organize unit tests into test modules.	3, 4, 7
5	5. Design, develop, and refactor multi-module computer programs written in Python with high-quality built-ins.	3, 4, 7
5	6. Create code by following the Test-Driven Development programming approach.	3, 4, 7
5	7. Design, write, and implement code according to recognized principles (DRY, KISS, and F.I.R.S.T.).	3, 4, 7
4	8. Implement the means for finding dead or complex code.	3, 4, 7

CORE VALUES

The Core Values are a set of principles that guide in creating educational programs and environments at Edison State. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Software Testing Principles
2. The Test Pyramid
3. Code Coverage
4. Test Automation
5. Code Refactoring
6. Assertions
7. Context Managers
8. Decorators
9. Integration Testing
10. Unit Testing
11. Test Documentation
12. Test-Driven Development (TDD) and Behavior-Driven Development (BDD)
13. Best Practices in Software Testing