

**University of Detroit Mercy**  
**College of Engineering and Science**  
**Department of Mathematics, Computer Science and Software Engineering**

**CSSE-5610 01 Software Testing**  
**Winter 2016**

**DESCRIPTION OF COURSE:** Quality management and testing, context of testing, structured testing, master test planning, lifecycles of high-level and low-level tests, development of test strategy, test point analysis and estimation, test specification techniques, checklists for quality characteristics, test control, metrics, test process improvement model, test tools, projects.

**CREDIT HOURS:** 3

**PREREQUISITES:** CSC-4150 Introduction to Software Engineering (Recommended).

**PREREQUISITES BY TOPIC:** Ability to program using Java and/or C++ (Visual Studio) programming languages.

**REQUIRED TEXT:** *Software Testing: Principles and Practices*, Srinivasan Desikan and Gopaldaswamy Ramesh, Addison-Wesley Professional, 1/e, ISBN: 9788177582956

**RECOMMENDED TEXTS:** *Introduction to Software Testing*, Paul Ammann and Jeff Offutt, Cambridge University Press, First Edition, ISBN: 978-0521880381

**INSTRUCTOR:** Dr. Shadi Banitaan, Assistant Professor  
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**COURSE OBJECTIVE:** To introduce software testing concepts, processes, and tools that will aid in producing high quality, low defect software.

**COURSE OUTCOMES:** Upon completion of the course, students will be able to:

1. Recognize the duties/responsibilities of a test engineer.
2. Perform test planning for different types of software products.
3. Apply systematic methods for software testing.
4. Define different types of testing methodologies.
5. Be able to articulate automated unit testing with JUnit.
6. Know how to evaluate test cases for the project using coverage tools.
7. Discuss and explain the basic issues and fundamental principles in software testing.

**COMPUTER USAGE:** Students will use JUnit and Cobertura.

**TOPICS:**

- Principles of Testing
- Software Development Life Cycle Models
- White Box Testing
- Black Box Testing
- Integration Testing
- System and Acceptance Testing
- Regression Testing
- Ad hoc Testing
- Testing of Object-Oriented Systems
- Test Management
- Software Test Automation
- Test Metrics and Measurements

**GRADING:**

- 20% Term Paper
- 50% Projects
- 15% Midterm Exam
- 15% Final Exam

**GRADING SCALE:**

93-100% A	87-89% B+	77-79% C+	69-67% D+
90-92% A-	83-86% B	73-76% C	60-66% D
	80-82% B-	70-72% C-	0-59% F

**LATE ASSIGNMENTS:**

Due dates will be provided for homeworks/projects when it is posted. Late assignments will be accepted with a penalty of 10% per day late. Late assignments will not be accepted more than 1 week past the due date. No extensions will be given due to illness, school activities, etc. since there is plenty of time to complete assignments before the due date. Extensions will be considered in the case of serious family emergencies, extended illness, or other lengthy absence only, and must be requested prior to the due date.

**ACADEMIC INTEGRITY:**

Students are expected to conform to a high standard of honesty and integrity in this course. Copying the work of someone else and other forms of cheating are strictly prohibited. Permitting or tolerating such behavior is also prohibited. The minimum penalty for any offense is a 0 on that assignment. The culprits may be subject to

additional sanctions, up to and including expulsion from school for serious offenses, as prescribed by the University Catalog and the Engineering and Science Student Handbook.

## **STUDENTS WITH DISABILITIES**

It is very important for students to be proactive with regard to requesting disability accommodations. While it is never required that you disclose your disability to your professors, all students at UDM are encouraged to talk to their professors to discuss their concerns. Faculty cannot provide disability accommodations without official notification from the Disability Support Services office. If you need an accommodation because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please contact Ms. Emilie Wetherington as soon as possible to schedule an appointment (gallegem@udmercy.edu or (313) 578-0310). Disability Support Services is located in the Student Success Center, Room 319, on the 3rd Floor of the Library, McNichols Campus.

## **LICENSURE STATEMENT**

Notice that the institution cannot confirm whether or not the program meets licensure requirements in the student's state of residence and a list of current contact information for any applicable licensing boards.

***Please note that important messages (such as cancellation of a class session) will be communicated through Blackboard and/or UDM email addresses.***