

Syllabus
SE 333/433 Software Testing and Quality Assurance
College of Computing and Digital Media
DePaul University

Fall Quarter 2019

First day of class : Tuesday 17, 2019

Classroom section: Tu 5:45 – 9Pm, LEWIS 01007 Loop Campus

Instructor: Wael Kessentini

Office: CDM 841

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Office Hours: Thursday 3:30 – 5:00pm

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Course Description

This course focuses on the processes, methods, and techniques for developing quality software, and maintaining quality software. Software testing processes at the unit, module, subsystem, and systems levels are discussed. Testing methods covered include: automatic and manual generation of test data, static vs. dynamic analysis, functional testing, inspections, and reliability assessment.

This course introduces concepts, metrics, and models in software quality assurance. The course covers components of software quality assurance systems before, during, and after software development. It presents a framework for software quality assurance and discuss individual components in the framework such as planning, reviews, testing and configuration management. It also discusses metrics and models for software quality. The course will include case studies and hands on experiences.

Topics of Interest

The course topics include:

- Software metrics and anti-patterns
- Design generation, design representation, and heuristics for good design.
- Dynamic software verification: unit, integration, regression, and acceptance testing.
- Static software verification: reviews, walk-throughs.
- Software development tools such as version control and unit testing frameworks.
- Standard representations for requirements, such as user stories and interaction prototypes.

Required Software

Successful participation in this course requires the following software:

1. Office compatible tools to read PowerPoint, Word and Excel documents
2. Java JDK
3. Eclipse

Grading

- Assignments -- 20%
- Project and final paper -- 30%
- Mid-term exam -- 20%
- Final exam -- 30%

- o Written exam. On-line students may take the exam in class
- o No late submission will be accepted unless with a prior approval from the instructor.
- o Any sort of collaboration in the assignments with others without an explicit approval of the instructor will not be tolerated and may result in a failing grade.

Grading scale

A : total ≥ 93	C+ : 80 > total ≥ 77
A- : 93 > total ≥ 90	C : 77 > total ≥ 73
B+ : 90 > total ≥ 87	C- : 73 > total ≥ 70
B : 87 > total ≥ 83	D+ : 70 > total ≥ 67
B- : 83 > total ≥ 80	D : 67 > total ≥ 63
	D- : 63 > total ≥ 60
	F : total < 60

References

This book is not mandatory but it will help you to better understand the materials. In general, the slides of the different lectures are enough to cover all the required knowledge.

Pressman Roger S, Software Engineering: A Practitioner's Approach, 7th Edition, McGraw-Hill, 2010. ISBN-13: 978-0071267823

Email

Email is secondary means of communications for this course. Unless the topic is personal or sensitive in some way, please use D2L instead.

Students should be sure their email listed under "demographic information" at <http://campusconnect.depaul.edu> is correct.

Schedule

Week	Lecture Topics	Assignment/Project
09/17/2019	<ul style="list-style-type: none">• Introduction/Overview/What is Software Quality/What is Software Testing	
09/24/2019	<ul style="list-style-type: none">• Software quality metrics	<ul style="list-style-type: none">• Assignment/project
10/01/2019	<ul style="list-style-type: none">• Code-smells and bad-design practices	
10/08/2019	<ul style="list-style-type: none">• Software refactoring	
10/15/2019	<ul style="list-style-type: none">• Midterm exam• Software configuration management	<ul style="list-style-type: none">• Assignment 2
10/22/2019	<ul style="list-style-type: none">• Project Phase I (presentations)	
10/29/2019	<ul style="list-style-type: none">• Software testing techniques (white/black box...)	<ul style="list-style-type: none">• Assignment 3
11/05/2019	<ul style="list-style-type: none">• Techniques for automatic test-cases generation	
11/12/2019	<ul style="list-style-type: none">• Regression testing	
11/19/2019	<ul style="list-style-type: none">• Software inspection techniques• Model-based testing	<ul style="list-style-type: none">• Assignment 4
11/26/2019	<ul style="list-style-type: none">• Final Exam	

Academic Integrity Policy

This course will be subject to the academic integrity policy passed by faculty. More information can be found at <http://academicintegrity.depaul.edu/>

Plagiarism

The university and school policy on plagiarism can be summarized as follows: Students in this course should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work any assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Incomplete

An incomplete grade is given only for an exceptional reason such as a death in the family, a serious illness, etc. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final, and approved by the Dean of the College of Computing and Digital Media. Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request.

Resources for Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: Student Center, LPC, Suite #370, Phone number: (773)325.1677 Fax: (773)325.3720 TTY: (773)325.7296

Proctored exams for OL courses

If you are an online learning student living in the Chicagoland area (within 30 miles of Chicago), you will need to come to one of DePaul's campuses to take an exam. Online learning students outside of the Chicagoland area are required to locate a proctor at a local library, college or university. You will need to take the exam within the window your instructor gives.