

# SE 333/433 Software Testing and Quality Assurance

## Instructor

Dennis Mumaugh  
College of Computing & Digital Media, DePaul  
University  
Office: CDM 428  
Email: [dmumaugh@cdm.depaul.edu](mailto:dmumaugh@cdm.depaul.edu)  
Office hours: Tuesday 4:00-5:30 PM (CDM 428)

## Course Information

SE 433 Section 901/910  
SE 333 Section 901/910  
Class time: Tuesday, 5:45-9:00 PM  
Room: CDM, Room 228  
Campus: Loop  
**On-Line Learning:** <http://d2l.depaul.edu/>  
**Course homepage:**  
<http://condor.depaul.edu/dmumaugh/classes/SE433S17>

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## Summary

You can't 'test quality into' a software product, but neither can you build a quality software product without testing and analysis. Software testing and analysis is a core challenge in developing high quality software systems. This course will focus on the processes, principles, and techniques of software testing and analysis. It covers a full spectrum of topics from basic principles and underlying theory of testing to organizational and process issues in real-world applications. The emphasis is on selecting practical techniques to achieve an acceptable level of quality at an acceptable cost. This course will provide software engineering professionals with realistic strategies for reliable and cost-effective software testing.

The course consists of:

- Lectures
- Reading
- Individual homework assignments,
- Mid-term exam
- A final exam
- A short term paper (SE433 only)

## Topics

The specific topics covered by the course will include (tentative and subject to changes)

- Introduction to software testing
- Inspection
- Program analysis
- Unit testing
- Integration and system testing
- Regression testing
- Fundamental testing
- Structural testing
- Test case selection
- Testing of object-oriented software
- Performance testing
- Security testing
- Web application testing
- Graphical user interface (GUI) testing
- Usability testing
- Fault-based testing
- Test automation and tools
- Planning and monitoring the software quality process

## Primary Textbook

[Software Testing and Analysis: Process, Principles and Techniques](#), by Mauro Pezze, and Michal Young, Wiley. ISBN-10: 0471455938 ISBN-13: 978-0471455936

## Recommended texts or supplemental readings

The Art of Software Testing, Second Edition by Glenford J. Myers et. al. Digital copy available in library.

Software Engineering: A Practitioner's Approach, Roger S Pressman, McGraw-Hill, Chapters 14-20, 23.

Lecture notes and supplementary materials provided by the instructor. Available on D2L.

In addition, there is a **reading list/reference web page** with material cited there:

<http://condor.depaul.edu/dmumaugh/readings/SE433readings.html>

## Prerequisites

The following course is listed as a prerequisite.

Data Structures II (CSC301 or CSC403 or CSC383 or CSC393) or Object-Oriented Modeling (SE 430)

Proficient in programming and data structures. Assignments will use Java. Familiar with object-oriented modeling and principles. Familiar with software development processes.

## Mailing List

There is a course mailing list: [se433@mailman.depaul.edu](mailto:se433@mailman.depaul.edu)

You *must* subscribe to the course mailing list. I will bulk subscribe after the first class meeting. If you do not receive a subscription notice, then *subscribe*.

- <http://mailman.depaul.edu/mailman/listinfo/se433>.
- You are encouraged to answer your classmates' questions.
- I will reply to messages I receive to the course mailing list.
- The mailing list is archived.

If you do not wish to receive messages, you may unsubscribe, or subscribe to a digest.

## Contacting the Instructor

The best way to contact me is via email at: [dmumaugh@cdm.depaul.edu](mailto:dmumaugh@cdm.depaul.edu). If you need to meet with me please come during the regular office hours.

## Assignments and Exams

Coursework will consist of periodic assignments that reflect the topics just covered.

**Homework** There will be a number of homework assignments during the quarter. Homework is intended as a means for you to learn and practice the material discussed in class

**Examinations** There will be a mid-term examination and a final examination. The midterm and final examinations will be administered using the Desire2Learn on-line system. The final exam will concentrate on the last five weeks of the course but will also cover the rest of the course to a lesser degree. There will also be final take-home exam, a short paper for SE433 students.

**Submissions** Unless otherwise specified, all assignments must be submitted via Desire2Learn (D2L) (<https://d2l.depaul.edu/>) and are due by 11:59 PM CT, on the assignment due date. The documents may be in Microsoft Word (.doc) format, HTML, or Adobe PDF.

**Time Budget.** Students should allow approximately 3-4 hours of work outside of class for each scheduled hour of class; this works out to 10-12 hours each week (on average) for most students.

## Grading

Your grade will be computed based on your scores on homework assignments, and the mid-term and final exams. The following weights will be assigned:

**Attendance** – 10%

**Assignments and projects** – 50% for SE333, 45% for SE433

**Mid-term exam** – 20%,

**Final exam** – 20%,

**Final take-home exam**, a short paper – 5% SE433 only,

Late policy: no late submissions except for very exceptional circumstances (see below)

Grading will be done on the usual 60/70/80/90 bands but will be adjusted to account for clustering and banding of scores. Bands may be adjusted if there seems to be a systemic bias to the scores.

**Important note:** No extra-credit assignments are offered; it is a far more effective use of time to put the effort that would be expended on extra-credit work into the regular homework assignments instead.

## Other Course Information

**Software:** The software needed for this class includes:

Word processing software. I accept submissions in MicroSoft Word, PDF and plain text formats.

Java development and testing software: Eclipse, JUnit, Ant, Cobertura.

**Examinations:** examinations will be administered using Desire2Learn (<https://d2l.depaul.edu/>).

**Learning Management System:** We will be using Desire2Learn <https://d2l.depaul.edu> for everything: assignments, submissions, lecture recordings, etc.

**Student Support:** Support for both in-class and online students is provided through weekly office hours dedicated to the course and through a mailing list. Students in the Chicago area may come to the instructor's posted office hours. Most questions should be directed to the mailing list. Email to me directly should be used only for personal issues or for student-specific coursework questions. Make all questions clear, concise, and specific.

**Please include the course number and section (e.g., SE 433 - OL) in the email**

**Subject: field and include your full name in the body of the email.**

Note: The instructor does not preview homework assignments. However, the instructor does answer specific questions about assignments.

**Exceptional Circumstances:** Every effort is made to accommodate students who encounter exceptional personal circumstances during the quarter. Students who experience unanticipated personal, work, health, or family emergencies should notify the instructor by email or phone as soon as possible with a brief explanation of the circumstances and any anticipated impact these might have on coursework. Students who have anticipated exceptional circumstances such as secular or religious holiday observances, medical treatment, or work-mandated travel should

notify the instructor as early as possible of these circumstances and any anticipated impact these might have on coursework. In both unanticipated and anticipated cases, a suitable plan for dealing with the coursework impact is agreed upon by the student and instructor. In some cases, the instructor may request suitable documentation of the exceptional circumstances.

## Schedule

The schedule will be posted on the course home page  
<<http://condor.depaul.edu/dmumaugh/classes/SE433S17>> and on D2L.

## School policies:

### Email

Email is the primary means of communication between faculty and students enrolled in this course outside of class time. Students should be sure their email listed under "demographic information" at <http://campusconnect.depaul.edu> is correct.

### Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

## Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in [CampusConnect](#).

## Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/> if you have any questions be sure to consult with your professor.

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 that 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.

## Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at <http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>.

### 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.

### 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: [csd@depaul.edu](mailto:csd@depaul.edu).

Lewis Center 1420, 25 East Jackson Blvd.  
Phone number: (312) 362-8002  
Fax: (312) 362-6544  
TTY: (773) 325.7296