Syllabus
SE 333 Software Testing

College of Computing and Digital Media
DePaul University

Spring Quarter 2021

Zoom sessions:
Tuesdays 5:45 PM to 9 PM, March 30 – June 8

Instructor: Dan Walker

Office Hours: (Discord, Zoom or phone)
Wednesdays: 7:15 PM to 8:15 PM
Thursdays: 1 to 2 PM, 4 to 5 PM
Fridays: 1 to 2 PM

Communications
Discord
Web site: http://d2l.depaul.edu/
E-mail: dwalke30@depaul.edu
Tel: 773-706-3573

Course Description

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.

Prerequisites

Data Structures II (CSC301 or CSC403 or CSC383 or CSC393) or
Object-Oriented Modeling (SE430)
(Implies proficiency in object-oriented programming in Java or C++)

Reading Material

Primary Text

Each week I will post links to readings for the given week. The primary reading material will all be available online.

Optional References

- Software Testing: A Craftsman's Approach , by Paul C. Jorgensen, CRC Press
- **Practical Unit Testing with Junit and Mockito, by Tomek Kaczanowski (Kindle only?)**
- Software Testing and Analysis: Process, Principles and Techniques, by Mauro Pezze and Michal Young, John Wiley & Sons
- The Art of Software Testing, Second Edition by Glenford J. Myers *et. al*. Digital copy available in DePaul library.
- Software Engineering: A Practitioner's Approach, Roger S Pressman, McGraw-Hill. Chapters 13 and 14.
- Lecture notes and supplementary materials provided by the instructor. Available in D2L.

Type of Instruction

Realtime online lecture which is recorded for those in the asynchronous section of the class, with assignments, project and final. Links to the recording will be posted in D2L.

Topics

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

- Introduction to software testing
- Inspection
- Static analysis
- Unit testing
- Integration and system testing
- Regression testing
- Functional 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

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 11
3. Intellij IDEA
4. Other open source libraries and tools as needed.

Communication

We will use a mix of tools to communicate and keep in touch with each other:

- **Discord** – We can use this tool for general discussions and questions of general interest, for group communications using channels and for direct person to person messages.
- **Zoom** – For live presentations and real-time discussions, although, this may be handled by Discord as well.
- **D2L** – Will contain assignment descriptions, submission folders and grades. It may also be used for brief quizzes or even perhaps the final.
- **Email** – Of course you can email me if you are more comfortable with that but please keep in mind that direct Discord messages are also private and will probably get answered faster. My email address is dwalke30@depaul.edu.

Grading

- Assignments 45%
- Weekly quiz 10%
- Project 20%
- Final exam 25%
- Late policy
    - Late assignments will be accepted with penalties of 1% penalty per day for up to 7 days

Grading scale
(no pass/fail option this quarter)

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*

Final Exam

Given that proctored exams are not possible in the current environment, the final exam will be given online, using D2L.

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.

Respect for Diversity and Inclusion at DePaul University as aligned with our Vincentian Values

At DePaul, our mission calls us to explore “what must be done” in order to respect the inherent dignity and identity of each human person. We value diversity because it is part of our history, our traditions

and our future. We see diversity as an asset and a strength that adds to the richness of classroom learning. In my course, I strive to include diverse authors, perspectives and teaching pedagogies. I also encourage open dialogue and spaces for students to express their unique identities and perspectives. I am open to having difficult conversations and I will strive to create an inclusive classroom that values all perspectives. If at any time, the classroom experience does not live up to this expectation, please feel free to contact me via email or during office hours.

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.

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 Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx

Preferred Name & Gender Pronouns

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter so that I may make appropriate changes to my records. Please also note that students may choose to identify within the University community with a preferred first name that differs from their legal name and may also update their gender. The preferred first name will appear in University related systems and documents except where the use of the legal name is necessitated or required by University business or legal need. For more information and instructions on how to do so, please see the Student Preferred Name and Gender Policy at http://policies.depaul.edu/policy/policy.aspx?pid=332

Drop dates

See https://academics.depaul.edu/calendar/Pages/default.aspx

Students with Disabilities

Students seeking disability-related accommodations are required to register with DePaul's Center for Students with Disabilities (CSD) enabling them to access accommodations and support services to assist with their success. There are two office locations:

• Loop Campus (312) 362-8002

• Lincoln Park Campus (773) 325-1677

• Email: csd@depaul.edu

Students who register with the Center for Students with Disabilities are also invited to contact Dr. Gregory Moorhead, Director of the Center, privately to discuss how he may assist in facilitating the accommodations to be used in a course. This is best done early in the term. The conversation will remain confidential to the extent possible.

Please see https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx for Services and Contact Information.

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. Please see https://resources.depaul.edu/teaching-commons/teaching/Pages/online-teaching-evaluations.aspx for additional information.