CSCE 4460/5460 (Spring 2023)
Software Testing and Empirical Methodologies

Course Information

Professor: Wajdi Aljedaani
Office Hours: Tuesday (03:00-04:00pm, in the same classroom) wajdi.aljedaani@unt.edu
Email: wajdi.aljedaani@unt.edu
Class Hours: Tuesday/Thursday 10-11:20am (NTDP F285)
TA: Rasool Malik Vempalli (rasoolmalikvempalli@my.unt.edu)
TA Office Hours: Wednesday, 11:00 p.m. to 12:00 p.m
Farhan Ar Rafi (farhanarrafi@my.unt.edu)
Monday 12:00 PM to 2:00 PM and Friday 10:00 AM to 12:00 PM, Cubicle F (Room E247)
Credit: 3 credit hours

Class Textbook:
1. Introduction to Software Testing, Paul Aumann and Jeff Offutt, Cambridge, 2008;

Course Documents: Lecture Notes and Course Documents will be found in Canvas

Course Description and Learning Objectives

This course addresses recent advances in the field of software testing, including empirical methodologies that provide a systematic way to investigate various software engineering techniques and methodologies. Students will learn various fundamental testing techniques and the state of the art in testing techniques, and understand how to design, conduct, analyze, and write up empirical studies of software engineering technologies.

Readings from current literature regarding software testing and empirical studies will be discussed and evaluated. Over the course of the semester, students will present the results from one particular paper in class, and then lead in-class discussion of that paper.

In addition to these paper readings and presentations, students will perform a term project (an individual project for graduate students) that investigates specific software testing research topics: (1) implements an existing (or new) algorithm or methodology including a preliminary empirical evaluation; (2) performs a survey on testing tools or techniques; or (3) performs a formal empirical evaluation of testing tools or techniques. Evaluation will be based on class participation, individual assignments, paper presentation, and class project.

Prerequisite

CSCE 3444/4444/5430 or strong programming skill
Grading Criteria

- Project 45%
- Paper presentation 10%
- Assignments 25%
- Task Challenge 10%
- Survey 10%
- Attendance & participants 10%

Grade Assignments are made based on the following:

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<th>Grade</th>
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<tr>
<td>A</td>
<td>90-100%</td>
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<td>B</td>
<td>80-89.9%</td>
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<td>D</td>
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Course Policies

- Cheating will result in failure in the course. Please reference the UNT academic integrity policy for more information on cheating. All assignments will have specific due dates and penalties will be given for the late submissions (10% deduction per day up to a maximum of three days). The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and TA and contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324 and obtain a ticket number. The instructor, TA, and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.
- **Violation of Academic Dishonesty/Plagiarism:**
  - ✓ The student will fail the course and the plagiarism case will be reported to the CSE department and the office of Academic Integrity.

**Academic Dishonesty/Plagiarism:**

Cheating will result in failure in the course. Please reference the UNT academic integrity policy for more information on cheating. We emphasize that individual work such as homework assignments and pop quizzes must be done on your own and that cheating will result in failure of the course. Do not discuss solutions or share copies of individual work. Unacceptable collaboration will be considered a violation of a Code of Student Conduct, and will result in a failing grade for the course. In addition, the incident will be reported to the CSE department, in accordance with the CSE department policy on academic integrity. Please make sure if you obtain ideas from others you give credit to your source. If questions arise during the course of working on a problem, please feel free to contact the instructor for a clarification.
Face Coverings
UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

If you are experiencing any symptoms of COVID-19 (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

Course Materials for Remote Instruction
Remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a [webcam and microphone – faculty member to include what other basic equipment is needed] to participate in fully remote portions of the class. Additional required classroom materials for remote learning include: [list specific software, supplies, equipment or system requirements needed for the course]. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn.

UIT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm) Email: helpdesk@unt.edu Phone: 940-565-2324
In Person: Sage Hall, Room 130
Walk-In Availability: 8am-9pm

Telephone Availability:
- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-10554-4212710328)

Rules of Engagement
Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:
- While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language on the basis of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law will not be tolerated.
• Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
• Ask for and use the correct name and pronouns for your instructor and classmates.
• Speak from personal experiences. Use “I” statements to share thoughts and feelings. Try not to speak on behalf of groups or other individual’s experiences.
• Use your critical thinking skills to challenge other people’s ideas, instead of attacking individuals.
• Avoid using all caps while communicating digitally. This may be interpreted as “YELLING!”
• Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
• Avoid using “text-talk” unless explicitly permitted by your instructor.
• Proofread and fact-check your sources.
• Keep in mind that online posts can be permanent, so think first before you type.

See these Engagement Guidelines (https://clear.unt.edu/online-communication-tips) for more information.

**UNT Policies**

**Academic Integrity Policy**
Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. We emphasize that individual work such as homework assignments and pop quizzes must be done on your own and that cheating will result in failure of the course. Do not discuss solutions or share copies of individual work. Unacceptable collaboration will be considered a violation of a Code of Student Conduct, and will result in a failing grade for the course. In addition, the incident will be reported to the CSE department, in accordance with the CSE department policy on academic integrity. Please make sure if you obtain ideas from others you give credit to your source. If questions arise during the course of working on a problem, please feel free to contact the instructor for a clarification.

**ADA Policy**
UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty
member prior to implementation in each class. For additional information see the [ODA website](https://disability.unt.edu/).

**Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)**

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

**Emergency Notification & Procedures**

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

**Retention of Student Records**

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student’s records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.

**Acceptable Student Behavior**

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT’s [Code of Student Conduct](https://deanofstudents.unt.edu/conduct) to learn more.

**Access to Information - Eagle Connect**

Students’ access point for business and academic services at UNT is located at: [my.unt.edu](https://my.unt.edu). All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail [Eagle Connect](https://it.unt.edu/eagleconnect).
Student Evaluation Administration Dates
Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (http://spot.unt.edu/) or email spot@unt.edu.

Sexual Assault Prevention
UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Academic Support & Student Services
Student Support Services
Mental Health
UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- UNT Care Team (https://studentaffairs.unt.edu/care)
- Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)
**Chosen Names**
A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- **UNT Records**
- **UNT ID Card**
- **UNT Email Address**
- **Legal Name**

*UNT euIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.*

**Pronouns**
Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don’t assume someone’s name, we should also ask and not assume someone’s pronouns.

You can [add your pronouns to your Canvas account](https://canvas.unt.edu) so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- What are pronouns and why are they important?
- How do I use pronouns?
- How do I share my pronouns?
- How do I ask for another person’s pronouns?
- How do I correct myself or others when the wrong pronoun is used?

**Additional Student Support Services**

- **Registrar** ([https://registrar.unt.edu/registration](https://registrar.unt.edu/registration))
- **Financial Aid** ([https://financialaid.unt.edu/](https://financialaid.unt.edu/))
- **Student Legal Services** ([https://studentaffairs.unt.edu/student-legal-services](https://studentaffairs.unt.edu/student-legal-services))
- **Career Center** ([https://studentaffairs.unt.edu/career-center](https://studentaffairs.unt.edu/career-center))
- **Multicultural Center** ([https://edo.unt.edu/multicultural-center](https://edo.unt.edu/multicultural-center))
- **Counseling and Testing Services** ([https://studentaffairs.unt.edu/counseling-and-testing-services](https://studentaffairs.unt.edu/counseling-and-testing-services))
- **Pride Alliance** ([https://edo.unt.edu/pridealliance](https://edo.unt.edu/pridealliance))
- **UNT Food Pantry** ([https://deanofstudents.unt.edu/resources/food-pantry](https://deanofstudents.unt.edu/resources/food-pantry))

**Academic Support Services**

- **Academic Resource Center** ([https://clear.unt.edu/canvas/student-resources](https://clear.unt.edu/canvas/student-resources))
- **Academic Success Center** ([https://success.unt.edu/asc](https://success.unt.edu/asc))
- **UNT Libraries** ([https://library.unt.edu/](https://library.unt.edu/))
- **Writing Lab** ([http://writingcenter.unt.edu/](http://writingcenter.unt.edu/))