

# SENG 3020 Software Verification and Validation

## Fall 2024

<b>Instructor</b>	Mr. Aleksei Vilkomir
<b>Scheduled Class Time</b>	Monday, Wednesday, and Friday 12:00 pm to 12:50 pm Class meets in Austin 202
<b>Instructor Office</b>	Science & Technology Building, C-111
<b>Office Hours</b>	Monday, Wednesday 11:00 am – 11:30 am, 2:00 pm – 3:15 pm Friday 11:00 am – 11:30 am, 2:00 pm – 3:00 pm  Feel free to make an appointment with me if you need to meet outside of these hours. If I cannot hold office hours at a regularly scheduled time, I will announce this on Canvas.
<b>Instructor Phone</b>	252-328-9439
<b>Instructor Email</b>	<a href="mailto:vilkomira21@ecu.edu">vilkomira21@ecu.edu</a> , responses within 24 hours during the week, potentially longer during holidays or weekends
<b>Course Web Page</b>	<a href="https://ecu.instructure.com/">https://ecu.instructure.com/</a>
<b>Required Textbooks</b>	<b>Essentials of Software Testing</b> by Ralf Bierig  Online ISBN: 9781108974073 Online publication date: August 18, 2021  Hardback ISBN: 9781108833349 Hardback publication date: October 27, 2021

## Course Description and Objectives

This course provides practical and theoretical knowledge of software testing. Students will learn verification and validation strategies and techniques throughout the software life-cycle. Methods of software testing. Students are required to complete a team project over the course of the semester.

Upon completion of this course, each student will be able to:

- Understand the processes, principles, and techniques of software testing, software verification, and validation
- Develop software testing plans and models
- Generate test cases according to various testing criteria
- Apply different types of testing approaches
- Develop and apply continuous verification methods
- Conduct test reviews and formalize documentation

## Course prerequisites

SENG 1020 – Data Structures for Software Engineers

## Grading

Students will be evaluated based on the combination of class activities. The final grade will be assessed with the following criteria:

Grading	
A	≥ 94
A-	90-93
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	below 60

Students will be evaluated based on the combination of class activities:

Quizzes / Assignments:	25%
Middle-term test:	25%
Project:	25%
Final exam:	25%
Total:	100%

## Final exam

Time and examination day: 11:00 - 1:30 pm Thursday, December 5, 2024.

## Attendance Policy

This is a face-to-face class, and attendance is expected. You can miss up to three classes without an excused absence. Each class missed beyond the first three will deduct 3 points from your final course grade (e.g., if you have five absences that are not excused, you will lose 6 points from your final grade). **Ten** unexcused absences will automatically give you **an F for this class**. This is done to emphasize the importance of attendance.

Excused absences fall into two categories: university-excused absences and planned absences that have been approved.

A university-excused absence is defined here <https://deanofstudents.ecu.edu/home/university-excused-absence/>. If your absence is planned (e.g., participation in university-related activities, religious observations), you should work with your team to ensure you are not scheduled to present

on the same day and that your work on the project is up to date. You should also contact your teammates and me to ensure I am/they are aware of it, even when not presenting. I can also brief you on what we worked on in class that day. If you have an emergency where you cannot contact me and/or your teammates (e.g., a sudden illness), you should follow up once you are better as quickly as possible to see what you missed. Ensure you get a doctor's note if you miss class for medical reasons.

An excused absence is a bit broader: it includes university-excused absences and adds planned absences you discussed with me. This includes absences for job interviews, attending conferences related to your studies, and family emergencies. It would help if you endeavored to minimize conflicts with class, but I know this isn't always possible. If you have already discussed an absence with me in advance, and I've approved it, you can assume you have my permission, but feel free to ask if you are unsure. Similarly to the above, keep your team in the loop.

As is to be expected, **if you are sick, do not come to class!** This is an excused absence. Just contact me as soon as you are able.

The class may be moved to an online format for up to two weeks in case of an outbreak. During this period, the above attendance policy will remain in effect. You, instead, will be expected to attend online during our regular class time. If you have poor Internet access, contact me within 48 hours of the announcement of the online move to work out a plan for attendance. You will also want to coordinate with your teams in that case.

You are responsible for announcements and assignments given in class. If you miss a class, it is up to you to obtain notes and any other information provided in the class. Excuses that you did not know about something because you did not come to class and did not obtain the information will not be accepted. If you are having trouble keeping up with the work in this course, come during office hours or ask for help right away. If you wait until the end of class to seek help, there is very little that you can do to improve your score.

## **Usage of AI and Machine Learning Tools**

Students are allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2) on assignments in this course if instructor permission is obtained in advance. Unless given permission to use those tools, each student is expected to complete each assignment without substantive assistance from others, including automated tools. If permission is granted to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2), they must be properly documented and credited. Students should seek out the appropriate source (e.g., MLA, APA, etc..) and cite in the most correct format according to the style guide. Note, online style guides are being updated continually to include new sources such as ChatGPT.

If a tool is used in an assignment, students must also include a brief (2-3 sentences) description of how they used the tool, in addition to citing the use of any tool used.

## **Late Assignment Policy**

In general, late work is not accepted. Expectations and due dates are made very clear. If you encounter unexpected circumstances such as serious illness, family emergencies, or technical issues (e.g., computer malfunctions), it is your responsibility to contact me to request an extension during normal business hours (8 am – 6 pm on workdays) before the due date, not after. Proper documentation will be required.

## **ECU Connect**

This course uses the ECU Connect system to provide you with information on your performance within the course. For more information, please see <https://academic-success.ecu.edu/ecuconnect/students/>.

## **Late To Class / Leaving Early**

If you miss more than 20 minutes of the class period (arriving late/leaving early), you will be counted as absent for the entire class period.

## **Cell Phones Use**

The use of cell phones in class is prohibited.

## **Laptop Use**

This class requires reliable access to a laptop for completing class assignments, home assignments, and communication. Webcams are an option for office-hour interactions but are not required. [Please review the ECU Computer Recommendation.](#)

Equipment—including computers, webcams, headsets, and hotspots—is available for checkout at both ECU libraries:

- Equipment Available for Checkout from the main campus library ([link](#))
- Equipment Available for Checkout from Laupus Library ([link](#))

## **Student Conduct**

Please turn off telephones while in class. Students are expected to abide by the university's Student Honor Code. The homework that you do is a critical part of your education. Students are expected to do their own work. That does not mean you are not allowed to discuss your ideas with other students. Working in groups can be beneficial, and I encourage you to talk through ideas with other students. But outright copying is plagiarism and is unacceptable. Students who copy other students' work, allow their work to be copied, or copy their work from other sources, such as the internet, will receive no credit or negative credit for the assignment and may be reported to the university for an academic integrity violation.

Other potential academic integrity violations are cheating, falsification, multiple submissions of the same work in different classes, and attempts at any of these violations. Please see [http://www.ecu.edu/cs-studentlife/policyhub/academic\\_integrity.cfm](http://www.ecu.edu/cs-studentlife/policyhub/academic_integrity.cfm) for more details.

Academic integrity violations can result in a grade penalty up to and including an F for the course.

## **Incompletes**

No incompletes will be issued in this course except for extraordinary circumstances, which generally will be situations where almost all work is complete, this work has been done at an acceptable level of quality, and, realistically, you can pass the course once the remaining work is completed.

## **Copyright on Course Materials**

Course materials, including programming assignments and lecture notes, can only be publicly shared or used for commercial purposes if given permission. This is covered by ECU copyright regulations, available at <http://www.ecu.edu/prr/10/40/02>, which state the following:

7.1.3. Notes of classroom and laboratory lectures, syllabi, exercises and other course materials taken by Students shall not be deemed Student Works, may only be used for personal educational purposes, and shall not be used for commercialization by the student generating such notes or by any third party without the express written permission of the author of such Works. Violation of University Policy may be grounds for disciplinary action pursuant with the ECU Student Conduct Process.

## **Weather Emergencies**

In the event of a weather emergency, information about ECU can be obtained through the following sources:

ECU emergency notices	<a href="http://www.ecu.edu/alert">http://www.ecu.edu/alert</a>
ECU emergency information hotline	252-328-0062

## **Students with Disabilities**

East Carolina University seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must be registered with the Department for Disability Support Services located in Slay 138 ((252) 737-1016 (Voice/TTY)).

For more information, please see <https://accessibility.ecu.edu/students/dss-guidelines/>.

## **Continuity of Instruction statement**

In the case of localized outbreaks affecting our classroom identified by health officials, we will transition to online delivery for up to two weeks for your safety. Health officials will closely monitor conditions and may need to contact you by phone to help them monitor public health conditions. Please ensure [your phone number is up to date in PiratePort](#). After this period of up to two weeks, we will resume on campus in-class activities. The temporary move to online course delivery will not affect the due dates for exams, quizzes, assignments, or any other form of assessment. If the course schedule requires adjustment, I will always notify you.

If the course moves online, you may be required to attend synchronous class meetings at the established class times via Teams. Class meetings will be recorded for students who have poor internet connections.

I will post all course materials and class meeting recordings, if available, on Canvas. Students unable to attend should access those notes and materials and contact me if they have any questions. The Canvas course will be used for all communications, assignments, and assessments. It is recommended you save on your computer and/or print a copy of the syllabus, assignment schedule, and other important course material. In the event of a Canvas outage, I will use email to communicate with you.

## **Caveats**

Occasionally, it may be necessary to revise this syllabus due to extenuating circumstances. I reserve the right to revise this syllabus if the need arises. If I do so, I will announce this on Canvas.