

# Software Testing (SWE 637)

## Spring 2022 Course Syllabus

**Professor:** Brittany Johnson-Matthews (call me Dr. B ; Professor or Prof works too ☺ )

**Office:** ENGR 4440

**Email:** johnsonb @ gmU . edu

**Website:** <http://brittjay.me>

**Twitter:** @drbrittjay

### **Office Hours (currently virtual):**

Tuesdays, 12-2pm

(link and password posted on Piazza)

**TA:** Raihan Islam Arnob

**Office hours:** Wednesdays, 3-5pm (Location TBA)

**Class meeting time:** Th 4:30 – 7:10 pm

**Location:** Horizon Hall 1010

Below are listed my/Mason's usual course policies. However, this is not a "usual" time. I fully understand that each of us may face new obstacles, or old obstacles in novel ways, during this time. Please communicate with me if such things are getting in your way for this class. **My goal is to facilitate your growth and success in this strange and uncertain time;** I can only do that if you tell me what is happening.

### **Textbooks**

[Introduction to Software Testing \(edition 2\)](#), Ammann and Offutt – *Strongly recommended*

[At the GMU bookstore](#)

[On Amazon](#)

[Publisher electronic version](#)

### **Course Catalog Description**

Students learn the theory behind criteria-based test design and how to apply that theory in practice to design high quality tests during all phases of software development. Topics include test design, test automation, test coverage criteria, and how to test software in cutting-edge software development environments.

## Prerequisites

SWE 619 is recommended. While this course provides extremely practical skills, it is, at heart, an applied math course. You will need knowledge of discrete math, programming, data structures and basic software engineering. Most examples will be in Java and many assignments will require JUnit tests, so Java experience is important.

## Office Hours & Availability

*Office hours* are times that I commit to being available, first-come first-served.

***Currently I am only doing virtual office hours.*** You do not need an appointment and I'm available to talk during these hours about *anything* (course related or otherwise).

If you can't make my office hours, I'm happy to make appointments. I will inform the class if I have to miss office hours. I will also from time to time post availability for virtual homework help and test prep (along with virtual office hours, in the event that my office hours don't work for your schedule).

## Safe Space Policy

My classroom and my office (virtual or otherwise) are safe spaces. There is a lot going on in the world right now, and I want to make sure that you all feel comfortable and accommodated in every way. There is a **ZERO TOLERANCE** policy for disrespectful, racial, or otherwise prejudicial statements or actions in my class or office. If at any time you feel uncomfortable with something that has been said or done (by me or another student), please do not hesitate to contact me.

## COVID-19 Class Attendance Etiquette

[As mandated by the University](#), please do not attend class if you are experiencing symptoms or have recently tested positive for COVID. Masks are not required but please be respectful of the space and preferences of others.

## Readings

I expect you to read the relevant material **before** class meetings. The lectures may not cover all material from the readings and will often include material not

found in the readings. So both reading and attending are important to your success in this class 😊.

## Graded Assignments

There will be six homework assignments. These assignments stress the practical application of techniques discussed during lectures. They will be posted on the class website and any clarifications or hints will be posted on Piazza.

***Assignments must be submitted by the beginning of the class on the day they are due to be counted as on time.*** Late submissions will receive **30% per week** deduction. **Per GMU policy, all assignments must be submitted before the beginning of final exams.**

## Collaboration

You can work on assignments individually if you prefer. However, not only is collaboration how real software is built, but it's also the best way to learn (and more fun!). Therefore, collaborative assignments will receive a **5% bonus credit**.

If you work collaboratively, list every collaborator and include **a short summary of what each person did** (*collaboration summary*). You can submit one assignment with multiple names or work together to analyze the problem and develop the solution, then complete the assignment separately.

You can collaborate in teams of up to **three** students but **only other students in SWE 637 this semester**. You are **NOT ALLOWED** to include "guest names". Every person listed as a collaborator **must contribute**.

If someone is listed as a collaborator but did not contribute, all will be given a zero on the assignment and reported to the university [honor committee](#). ***So please be honest and collaborative when completing your assignments!*** If you have any questions or concerns while completing an assignment, don't hesitate to contact me.

## Quizzes

We will have weekly quizzes instead of midterm exams. Quizzes will be given in the first 10-15 minutes of class and will cover material from the previous class meeting and the reading assigned for that day.

Missing a quiz is an automatic zero. There are no quiz makeups (except for rare circumstances), however, I will drop your three lowest quiz grades at the end of the semester.

### **In-class Exercises**

We will have in-class assignments during most classes. Some will be done as a class, some will be done in small groups, and a few may be individual exercises. They will be announced and distributed during class and count towards your participation grade.

**Important:** Credit can only be received if done in class, although if you miss class, you should do the posted in-class assignments on your own to prepare for the quizzes and final exam.

### **Final Exam**

The final exam will be held during the University-scheduled exam period and must be taken synchronously. The final exam will likely be a paper exam and like the quizzes must be completed individually. The exam is cumulative and may contain content from any portion of the course. University policy specifies that missing the final exam without previous notice is an automatic F. If you are unable to make it to class for the final exam, please coordinate with me *before the exam*.

### **Extra Credit Opportunities**

Throughout the semester, I will provide random opportunities for extra credit. This will range from wear a fun t-shirt to class to additional practice problems and most engaged student awards. Extra credit can be applied to missed in-class assignments, or additional points to quizzes or the final exam.

### **Discussion Board Use**

All students will be enrolled in the discussion forum for SWE 637 on Piazza. You will receive an invitation via your Mason email. Participation on Piazza will count towards your participation grade. **Ask all technical questions about the material or the assignments on Piazza.** You can also post about software failures, errors in the books or slides, or about topics that extend from our classroom discussion.

### **Participation and Attendance**

You are not required to attend class. However, do keep in mind that your participation grade is 15% of your final grade. So not attending class means

finding other ways to ensure you get full credit for participation (e.g., participations on Piazza). If you miss class, you are responsible for catching up on any material missed.

## **Email Communications**

I will occasionally send course announcements to your Mason email account (through Piazza), so you should check it regularly. Professors are required to use your Mason email, not personal email accounts. Email sent to the professor or TA should have a subject that starts with "**SWE 637**". If not, we may not notice it in a timely manner. **Questions about the technical material and class policies should be posted on the discussion board, not sent through email.**

## **Online Presence**

I always accept LinkedIn requests from current and former students – we clearly have a professional relationship. *Be sure to remind me you took my class.* I tweet random thoughts super irregularly about software engineering and life @drbrittjay and @INSPIREDLabGMU.

## **Diversity, Inclusion, & Anti-Racism Statement**

As a member of the George Mason University community, I will work to create an educational environment that is committed to anti-racism and inclusive excellence. An anti-racist approach to higher education acknowledges the ways that individual, interpersonal, institutional, and structural manifestations of racism against Black individuals, indigenous people, and other people of color contribute to inequality and injustice in our classrooms, on our campuses, and in our communities. Anti-racist work strives to provide our community members with resources to interrupt cycles of racism so as to cultivate a more equitable, inclusive, and just environment for all of our students, staff, faculty, alumni, and friends, regardless of racial background. I believe that the work of anti-racism starts with each individual; together, students and faculty in this course will build knowledge and take actions rooted in principles of equity, inclusion, and justice that we will carry with us throughout our lives.

## **Statement of Collegiate Compassion**

I believe we learn best when we can show up as whole and healthy people. To learn effectively we need to have basic security: a roof over our head, a safe place to sleep, a stable place to live, and enough food to eat. If you are struggling to meet any of these basic needs please talk to me, visit our campus food pantry

(<https://ssac.gmu.edu/patriot-pantry/>), or reach out to other Mason resources <https://learningservices.gmu.edu/campus-resources/>. Remember, asking for assistance and advocating for yourself is an important part of your collegiate experience. I am here to help, and **YOU** are not alone.

## Honor Code Statement

As with all GMU courses, SWE 637 is governed by the [GMU Honor Code](#). In this course, **all** quizzes and exams carry with them an implicit statement that it is the sole work of the author, unless joint work is explicitly authorized. When joint work is authorized, all contributing students must be listed on the submission. Any deviation from this is considered an Honor Code violation, and as a minimum, will result in failure of the submission and as a maximum, **failure of the class**.

## Office of Disability Services

If you need academic accommodations, please see me and contact the [Disability Resource Center](#)(DRC) at 993-2474. All academic accommodations must be arranged through the DRC.

## Other Useful Campus Resources

- Student Support and Advocacy Group: <https://ssac.gmu.edu/>
- Office of Diversity, Inclusion, and Multicultural Education (ODIME): <https://odime.gmu.edu/>
- Writing Center: A114 Robinson Hall; (703) 993-1200; <http://writingcenter.gmu.edu>
- University Libraries "Ask a Librarian"; <http://library.gmu.edu/ask>
- Counseling and Psychological Services (CAPS): (703) 993-2380; <http://caps.gmu.edu>

## Grade Distribution

Participation (discussion board and in-class): 15%

Assignments: 20%

Quizzes: 40%

Final exam: 25%

Numeric scores will map to letter grades as follows:

97+:           A+

90-96: A  
85-89: B+  
80-84: B  
70-79: C  
below 70: F

I delegate quiz and assignment grading to our GTA, and I provide specific grading guidelines. If you have questions about your grade, or if you feel that your work has not been graded correctly based on the grading guidance, then please contact our GTA first. They can probably answer your question or correct any obvious mistakes quickly and easily. If you do not feel that our GTA has adequately addressed your concerns, please contact me. I will consider your concerns and re-grade your work. But understand that while my re-grading might result in a higher grade, it might also result in a lower one.