



SYLLABUS   
College of Computing and Software Engineering  
Department of Software Engineering and Game Design

SWE 3643: Software Testing and Quality Assurance  
Spring, 2024

**Course Information**

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Classroom/In Person, Atrium, room 156, Mon/Wed 6:30pm till 7:45pm

Monday January 8th through Monday April 29, 2024

**Instructor Information**

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Name: Jeff Adkisson

Email: JAdkiss1@Kennesaw.edu  
Office Location: Available after almost all lectures (adjunct, no office)

Preferred method of communication: In person or via email (*not D2L mail)*

**Course Description**

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This course will show how software quality assurance and configuration management is performed and how software process improvement is maintained in order to assure the highest possible quality. Topics include software process metrics and their use in QA, testing approaches, methods and techniques. Development of QA plans, reviews, inspections and audits will be done. Configuration control boards and methods for software process improvement is discussed.

**Prerequisites**: SWE 3313 Introduction to Software Engineering

**Class**: 3 Hours. **Lab**: 0 Hours. **Credit:** 3 Hours

**Course Materials**

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**Textbook** (required): The textbook is freely available online at: <https://go.oreilly.com/kennesaw-state-university/library/view/software-testing-principles/9788177581218/>  
Should you wish to purchase a printed copy of the textbook, here is the information: ***Software Testing Principles and Practices*** (1st Edition) Srinivasan Desikan, Ramesh Gopalaswamy (Author). Pearson. ISBN-13: 978-8177581218, ISBN-10: 817758121X.

**Downloads from D2L:** Other electronic resources as made available by the instructor.

**Technology requirements:** To be discussed during the selection of the course project.

**Learning Outcomes**

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By the end of this course, you will be able to:

1. Demonstrate an understanding of the notion of quality and the definitions of quality.
2. Demonstrate an understanding of setting quality goals, measuring techniques, and analyzing product and process quality.
3. Develop test plans, test processes, test scenarios, and test cases to achieve the quality goal.
4. Use a range of techniques to achieve the quality goals for software product through:
   1. inspections/reviews
   2. black box/white box testing techniques
   3. unit, integration, system (and regression) testing

Software engineering requires a lifetime of learning after college to be competitive in the marketplace and remain relevant. A goal of this course is to help you develop the confidence that you can learn how to learn new techniques and information in a timely fashion and apply them in at a professional level. You will be assigned project work in this course where you must work out complex problems on your own requiring you to perform research, trial-and-error, and other problem-solving techniques.

**Course Requirements and Assignments**

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This course involves the following components:

* *Readings* – In each learning module, you will read assigned readings related to testing and quality assurance. Assigned readings will support your completion of the module homework assignment.
* *Videos* – you will be provided with various online lectures and tutorials that you are expected to review.
* *Homework* – you will have five homework assignments.
* *Quizzes* – Each module contains a quiz to test your understanding of basic concepts.
* *Exams* – There is an in-person midterm and an in-person final exam.
* *Project –* A semester project will be used to evaluate your understanding and ability to use the learned concepts.

**Evaluation and Grading Policies**

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Homework Assignments 20%

Quizzes 20%

Mid-term 25%

Project 25%

Final Exam (*optional*) 10%

*Optional* Extra Credit (2 points max)

* Visit the KSU Writing Center .5 points per visit, max 1 total point
* Participate in Spring Hackathon (Feb 22, 23) 1 point (must be on a Hackathon team)

Please refer to D2L for a detailed description of individual assignments and deliverables.

**Maximum grade policy:**

Your course grade is limited to one grade higher than your project.

**Automatic failure:**

You cannot pass this class if you miss a major assessment (mid-term or project) or more than one homework assignment.

**Grade Rounding:**

I will calculate grades to 2 decimal places. Rounding will occur at the 3rd decimal position. For example:

* 89.984 becomes 89.98
* 89.985 becomes 89.99
* 89.994 becomes 89.99
* 89.995 becomes 90.0

**Grade Components**

Homework Assignments

You will have a total of five homework assignment in which in which you demonstrate your understanding of the course material.

All written assignments will be evaluated in Turnitin for originality. Do not reuse work from other classes. If you use outside sources, you must cite them properly to avoid a penalty for plagiarism.

To simplify the grading process, you must format your work according to the instructions posted in D2L. You will lose points if you do not adhere to formatting requests. This is not an English class, but you can lose points for improper grammar and/or spelling.

Quizzes  
You will be required to take a quiz for every learning module. Quizzes are open book, open notes, open resources. Pay attention to quiz due dates. They will not be re-opened if you miss one unless you have a documented, excused reason for missing the quiz that spans a reasonable amount of time before the due date.

Exams

There are two exams.

The midterm exam is in-person. You will complete it in the classroom using your laptop and the Respondus browser. Make sure your laptop has Respondus installed before arriving and your battery is fully charged. Operational hardware and software are your responsibility.

The final exam is *optional*.

* If you do not take the final exam, your final exam score will be set to your class average.
* If you take the final and exceed your current average, you will receive the higher score.
* If you take the final and do not exceed your current average, your final exam score will be set to your class average (same as not taking it).

There is no risk taking the final exam. Before taking the final, you need to do the math to determine whether it can lift your score to the next higher grade. Otherwise, it is a waste of your time.

Project

You will produce a project this semester. You will be given all the parameters and requirements of the project in D2L. You can work alone or in a team of two (no more). If you work alone, you are responsible for all the work. If you work with a partner, you and the partner share the same grade, even if one the partners does not carry their part of the project. Choose wisely.

Your project will be submitted via GitHub – not D2L. Your project GitHub repository will include:

* Documentation and README files all written in [Markdown](https://www.markdownguide.org/getting-started/).
* Source code along with detailed instructions how to clone and execute.
* A link to your video project presentation.

Extra Credit Opportunities

* Visit the KSU Writing Center to work on your communication skills one or two times. Each visit is worth .5 extra points, up to a maximum of 1 extra point. Great engineers are great communicators. Strive to be an outstanding writer and communicator. I highly recommend this University resource, particularly when you are working on your group project’s written test plan and your final presentation script.
* Participate in the Spring 2024 Hackathon on Feb 23 and 24. You must be on a team and participate end-to-end. You do not have to win. 1 point. This is a good way to get some experience working with an unknown domain and possibly get the attention of one of the Hackathon’s company sponsors. It is also a team effort, which is good experience (even if deeply frustrating at times). On top of that, you might win some money. <https://owllife.kennesaw.edu/organization/ccse>

**Course Policies**

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**Late Assignments/Projects**

Late work will be penalized by deducting 20% of its total grade per calendar day and will not be evaluated if submitted with more than 2 day’s delay. Late work is penalized for two reasons: to be fair (all students must receive the same time limits) and to help you to have sufficient time for each assignment (if you spend too much time on one assignment, you will not have sufficient time for the next one).

If you will have to miss a deadline for extraordinary reasons (e.g., personal illness, death in the family, etc.), you should inform me as soon as you can, indicating when you will submit the work. I will try to accommodate your needs.

**Make-up Policy:**

If a student must miss an exam due to a documented, legitimate reason (illness with an official doctor’s note, family death, etc.), then a make-up test/exam will be administered. To coordinate this, contact me as soon as possible, preferably before the test is given. It is the responsibility of the student to coordinate this in a timely manner and provide documentation to support the absence.

**Attendance**:  
You are expected to attend each class session. You are responsible for knowing about announcements/assignments made in class, whether you are present. If you miss a lecture, talk to your classmates and review D2L. There is no extra credit for attendance though you are more likely to be successful if you regularly attend.

This is a face-to-face course, so I will do not record the material except when I am unable to attend our regularly scheduled lectures. I will post an online lecture when I am unable to attend or if we have weather (or other) course interruptions. If you are going to miss class, you might consider asking a classmate to record the lecture. Please do not email me asking for a summary or material for lectures you have missed.

**Cell phones, games, and other ways to waste time in class:**   
I do not expect you to pay attention, but please be quiet and do not disturb your classmates. I recommend that you avoid distractions like social media during the lecture. You are adults and I will treat you like adults. That said, if you do not pay attention during class, you are more likely to perform poorly in the course and that is a poor use of your time and tuition.

**Institutional Policies**

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**Federal, BOR, & KSU Course Syllabus Policies:** <http://curriculum.kennesaw.edu/resources/federal_bor_ksu_student_policies.php>

[**Student**](http://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php) **Resources:**<http://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php>  
 **Academic Integrity Statement:**   
<http://scai.kennesaw.edu/codes.php>

**Withdrawal Policy**

Please refer to the KSU Undergraduate Catalog

(<http://catalog.kennesaw.edu/content.php?catoid=24&navoid=2171&hl=Withdrawal&returnto=search#withdrawalfromclasses>) The last day to withdraw without academic penalty is February 27, 2019. Ceasing to attend class or oral notice thereof DOES NOT constitute official withdrawal from the course. Students who simply stop attending classes without officially withdrawing usually are assigned failing grades. Students wishing to withdraw after the scheduled change period (add/drop) must obtain and complete a withdrawal form from the Academic Services Department in the Registrar’s Office.

**Academic Integrity Statement**

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the university’s policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an “informal” resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct’s minimum one semester suspension requirement. See also <http://www.kennesaw.edu/scai/content/ksu-student-code-conduct>.

Please note that all your work for this course is evaluated using the Turnitin tool provided by D2L. Plagiarism will not be tolerated; penalties range from a 0 on the assignment to academic misconduct charges that become part of your permanent record.

***The provisions of the STUDENT CONDUCT REGULATIONS, II. Academic Honesty, KSC Undergraduate Catalog will be strictly enforced in this class.***

**KSU Student Resources**

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This link contains information on help and resources available to students: <https://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php>

**Writing Center**

The KSU Writing Center helps students in all majors improve their writing. Experienced, friendly writing assistants help with topic development, revision, research, documentation, grammar, and more. For more information or to make an appointment, visit writingcenter.kennesaw.edu or stop by English Building, Room 242 (Kennesaw campus) or Building A, Room 184 (Marietta campus).

**Communication Policies**

* Announcements will be made on the home page of the course in D2L several times a week to keep you informed. Check in regularly.
* You are responsible for being aware of due dates on the calendar without being reminded.
* The instructor will only reply to e-mails that are sent from KSU student email accounts and list the course number in the subject line of the e-mail (SWE 3643).
* Do not use D2L e-mail. I do not check it. Ever.
* Any e-mail messages are responded to during the regular workweek, typically within a half days’ time. Weekends and or holidays might delay the response time. I will post announcements if I will be unavailable via e-mail.
* E-mails received after 5:00 pm will not be answered until the following day.
* Graded assignments will not be accepted via e-mail. Assignments must be turned in as instructed above.
* The instructor will NOT email or telephone to tell you everything you missed in class if you did not attend that day.
* Because of the number of students we typically have, there may be some delay in the instructor's response to an individual's e-mail.
* Do not send time-sensitive information via e-mail, speak to the instructor in person. A delivered e-mail does not relieve you of the responsibility of informing the instructor about some concern.
* Do not send a personal email correspondence to the instructor via the email class list.
* Changes to the posted schedule will be announced in the news pane of the course website. I will not re-publish a new schedule in the event the posted schedule is changed unless changes are significant.

**Projected Schedule**   
This schedule is a guideline and will likely remain unchanged, but I do reserve the right to modify it as needed. Due dates are also posted in the D2L Course Calendar. Dates in the D2L calendar, dropboxes, or discussion forums supersede any due date shown on the course calendar.

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| **Week** | **Dates** | **Topics** | **Chapter** | **Module** | **Quiz / Assignment** |
| 1 | Mon, 1/8  Wed, 1/10 | Introduction to Course What is Software Quality Introduction to Testing | 1, 2 | 1 | Syllabus Quiz |
| 2 | ~~Mon, 1/15~~  *Wed, 1/17* | Test Management and Metrics - No class Jan 15, MLK Holiday *- Wed 1/17, no in person lecture, video lecture will be posted* | 15.3-6, 17 | 2 | Quiz 1 Assignment 1 |
| 3 | Mon, 1/22  Wed, 1/24 | Coverage | 3.3 | 3 | Quiz 2 |
| 4 | Mon, 1/29  Wed, 1/31 | White Box Testing | 3 | 4 | Quiz 3  Assignment 2 |
| 5 | Mon, 2/5  Wed, 2/7 |
| 6 | Mon, 2/12  Wed, 2/14 | Black Box Testing | 4 | 5 | Quiz 4 Assignment 3 |
| 7 | Mon, 2/19  Wed, 2/21 |
| 8 | **Mon, 2/26**  **Wed, 2/28** | **MIDTERM EXAM - Monday 2/26: Exam Prep Review** – Wed 2/28, Midterm Exam - In person, attendance required, bring a laptop |  |  | Quiz 5 |
| 9 | Mon, 3/4  Wed, 3/6 | Software Test Automation JUnit, XUnit | 16 | 6 | Assignment 4 |
| 10 | ~~Mon, 3/11~~  ~~Wed, 3/13~~ | - No class, Spring Holiday |  |  | Quiz 6 |
| 11 | Mon, 3/18  Wed, 3/20 | Integration Testing | 5 | 7 |  |
| 12 | Mon, 3/25  Wed, 3/27 | System and Acceptance Testing | 6 | 8 | Quiz 7 Assignment 5 |
| 13 | Mon, 4/1  Wed, 4/3 | Other Testing Methods - NO CLASS – HOMEWORK 3 DUE | 8 & 10 | 9 | Quiz 8 |
| 14 | Mon, 4/8  Wed, 4/10 | Project Work Days *- No lecture, Jeff in classroom to assist groups* |
| 15 | Mon, 4/15  Wed, 4/17 | Project Work Days *- No lecture, Jeff in classroom to assist groups* |  |  | Quiz 9 |
| 16 | Mon, 4/22  Wed, 4/24 | Project Work Days *- No lecture, Jeff in classroom to assist groups* |  |  | Project due Friday 4/26 by 11:59 PM |
|  | Mon, 4/29 | Last day of class / no lecture |  |  |  |
|  | **FINAL *optional*** | **Optional Final Exam Online via Respondus Complete between Apr 30-May 6** |  |  |  |

**KSU Spring 2024 Academic Calendar**

<https://www.kennesaw.edu/registrar/academic-calendars/academic-calendar-spring-2024.php>

**Religious Observance**I encourage students in promoting their spiritual health. Religiously observant students wishing to be absent on holidays that require missing class and/or exam should notify the instructor at least two weeks in advance and discuss acceptable ways of making up any work missed because of the absence. It is up to the student to be proactive and handle this early in the semester.

**Academic Honesty**

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the University Judiciary Program, which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.

Students are required to work independently on quizzes, homework and exams.

Using AI tools such as ChatGPT to perform your work cannot be prevented, but it remains prohibited. Much worse, it is a waste of your time to take this class and let a machine do all the work for you. You might pass the course, but you will not be as well prepared for your career. Also, your exams are in-person, so using AI to execute your assignments will not help you prepare for the in-person exams. Strong performance on your exams is essential to pass this course.

I suggest you review this recent article on ChatGPT’s accuracy within our field as well. I have no doubt AI will continue to improve, but you should be wary of the results it produces: https://www.zdnet.com/article/chatgpt-answers-more-than-half-of-software-engineering-questions-incorrectly/

In the coming years AI will be a critical part of the design and implementation process, but you still must learn engineering theory and methods to one day participate in an engineering team or lead projects (including directing powerful AI systems). The work you perform in this course is like the longhand math problems you laboriously performed in school before being allowed to use a calculator. Using AI at this point will not teach your mind to understand why, when, and how to make good engineering decisions.