

# SWE 3623 SOFTWARE SYSTEMS REQUIREMENTS

## Summer 2020

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**Office Hours:** M,T,W,R,F 9am EST – 10am EST

**Class Info:** Class meets: Online via D2L

## Prerequisites

- SWE 3313 – Introduction to Software Engineering; concepts including software life cycle concepts and software process models
- Math 2345 Introduction to Discrete Mathematics or CSE 2300 Discrete Structures for Computing

## Texts

1. *Software Requirements Third Edition* by Karl E. Wiegers, Microsoft Press, ISBN: 978-0-7356-7966-5

2. *The Software Requirements Memory Jogger: A Pocket Guide to Help Software And Business Teams Develop and Manage Requirements* by Ellen Gottesdiener, GOAL/QPC, ISBN: 978-1-57681-060-6 ([www.MemoryJogger.org](http://www.MemoryJogger.org))

## Course Description

This course covers engineering activities related to the definition and representation of software system requirements. Topics include the elicitation, analysis, specification and validation of software system requirements. Emphasis is on the application of processes and techniques of requirements engineering. Projects focus on current analysis methods and supporting tools for specification, organization, change management, traceability, prototyping, and validating requirements.

# Course Outcomes

If successfully taken, at the end of the semester,

1. You will be able to define and apply the process of requirements engineering in the system development life cycle;
2. You will be able to effectively elicit, analyze, specify and validate requirements;
3. You will be able to use current tools to effectively model, specify, and manage software system requirements.

## Major Topics Covered in this Course

1. Requirement fundamentals: definition of requirements, requirement engineering process, types and characteristic of requirements, requirement management
2. Eliciting requirements, elicitation techniques
3. Requirement specification and documentation, standards, specification languages
4. Requirements validation, reviews, prototyping
5. System modeling: class diagrams, use case analysis, domain modeling, and introduction to formal specification methods
6. Analyzing non-functional/performance requirements, traceability
7. Software process concepts

## Assessment and Grades

### Assessment Elements

#### Participation

Some examples of how you can participate to the class are:

1. Participate and be constructive in all discussions;
2. Ask challenging questions;
3. Comment, build on, or clarify others' contributions;
4. Contact the instructor via email or during the virtual office hours to chat, to ask questions, or to give feedback.

#### Midterm and Final

This course comprise both a midterm and a final. The midterm will be during the 4th week of the semester, while the final will be during the final week. In both cases, you will be given a limited amount of time to take it, but you can autonomously decide when to take it during the assigned week. Detailed instructions can be found in the dedicated folder in content. **A webcam is required for this course to take the Midterm and Final Exam.**

### Individual Assignments

To allow you to practice with the different learned concepts, you will compete five main assignments. Detailed assignment descriptions and instructions will be posted on D2L with sufficient time for assignment completion. Follow the instructions of the description for submitting your solution. All assignments must be conducted independently, unless otherwise stated in the assignment description.

### Project

You will one group project in this class which will lasts the whole semester. The project will be developed in groups composed by 4-5 members. The group project will consist of a number of different components, the full descriptions of which will be posted on D2L.



### **Late Assignments/Projects**

Late work will be penalized by deducing 15% of its total grade per calendar day and will not be evaluated if submitted with more than 3 days delay. Late work is penalized for two reasons: to be fair (all students should be given the same time limits!) and to help you to have sufficient time for each assignment (if you spend too much time on one assignment, it is quite likely that you will have insufficient time to spend on the subsequent 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. The instructor will try to accommodate your needs. Documentation will be required to allow extra time for assignments or projects.



### **How your grade will be computed?**

Class Participation (Discussions/Questions/Engagement)	15%
Midterm	15%
Final	20%
Individual Assignments	25%
Project	25 %

Please refer to the description of individual assignments and deliverables in D2L for more details on individual assessment tools.



In order to **get an A** you need to have a total score greater than or equal to 90 and to score B or higher in all the components of the grade.

**Other grades:**

- B total score greater than or equal to 80 and less than 90 or greater than 90, but with a score lower than B in one or more components of the grade.
- C total score greater than or equal to 70 and less than 80.
- D total score greater than or equal to 60 and less than 70.
- F total score less than 60.

***How to Succeed in this Class:*** Here are three things you can do that will greatly improve your chances of making a satisfactory grade in this class:

- **Read the syllabus:** You should read *every word* in the syllabus during the first week of classes.
- **Read the textbooks:** You will get a lot more out of this class, and so be able to give back more on the assignments, assessments, and examination, if you read the assigned parts of the textbooks *before* the material is first due to be discussed. In my experience, students who don't complete the reading before it is discussed either never complete it or try to cram it all in just before the exam. That doesn't work.
- **Allow enough time:** More unsatisfactory grades are due to procrastination than any other cause. Do not assume that you can complete the assigned work in the thirty minutes before the due date and time; you cannot.



### **What should we expect from each other?**

The first and most important thing that we should expect from each other is respect and this should be shown in all the interactions.

Moreover, on **my side**,

- I will make sure to reply to your email within 24 hours Monday through 5pm EST on Friday (I may not respond to emails sent during weekends or holidays).
- I will be always open to hear your feedback about the course and I will do my best to address or incorporate your comments in the course.
- I will be available for individual or group consultation.
- I will be on time in class according to the schedule.
- I will keep the schedule updated and available in D2L.
- I will return your assignments and deliverables graded within 14 days from the deadline.

On **your side**, I am expecting

- You to come to class on time and actively participate to the lectures and activities.
- You talk to me if you have problems, doubts, or suggestions related to any component of the course.
- You work with effort and integrity on the assigned activities, homework, deliverables, and tests.



## Other policies and useful links

### **Academic Misconduct**

Every KSU student is responsible for upholding all provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. The Code of Conduct ([http://catalog.kennesaw.edu/preview\\_course.php?catoid=27&coid=48103&print](http://catalog.kennesaw.edu/preview_course.php?catoid=27&coid=48103&print)) includes the following:

*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 involved in off-campus activities shall not act in a disorderly or disruptive fashion, nor shall they conduct any dangerous activity.*

*Students involved in off-campus activities shall not take, damage or destroy or attempt to take, damage or destroy property of another.*

### **Students with Disabilities**

*If you have a specific physical, psychiatric, or learning disability and require accommodations, please let me know early in the semester so that your learning needs may be appropriately met. You will need to provide documentation of your disability to the Student Disability Services office, located in the Student Center room 267, and obtain a list of approved accommodations.*

Additional information for students can be found here:

<http://studentsuccess.kennesaw.edu/sds/>

### **Course Withdrawal**

Please refer to the KSU Undergraduate Catalog

(<http://catalog.kennesaw.edu/content.php?catoid=24&navoid=2171&hl=Withdrawal&returnto=search#withdrawalfromclasses>)

### **Attendance**

Attendance in classes, laboratories and lectures is important. All students are expected to attend these activities in accordance with their schedule of courses.

Students must not be absent from announced quizzes, laboratory periods or final examinations unless the reasons for the absences are acceptable to the instructors concerned. Students should also understand that they are responsible for all material covered during their absences and that they are responsible for the academic consequences of the absences. Students who are absent because of their participation in university-approved

activities, such as field trips and extracurricular events, will be permitted to make up the work missed during their absences.

Notice that class participation is part of your grade and to participate you have to be in class.

### **Make-up Policy**

If a student must miss a test due to a legitimate reason (e.g. documented illness, family death, etc), then a make-up exam will be administered. It is the responsibility of the student to coordinate with me as soon as possible.

### **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](http://writingcenter.kennesaw.edu) or stop by English Building, Room 242 (Kennesaw campus) or Building A, Room 184 (Marietta campus).*