

Principles Of Software Engineering

Course Outline (Spring 2019)
CSCI 3321

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Course Description

Students explore, and discuss, issues involved in developing large-scale software systems. Major topics in the course include models for the software lifecycle; techniques and tools of analysis, design, programming, testing, debugging, and maintenance. Students design, and present, prototypes for a real life application; these presentations will include slides and actual prototype demonstrations. Those students, not presenting, will play the role of stakeholders that question the design and implementation strategies. The presentations will be critiqued.

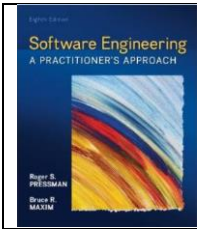
Major Topics Include

- Software Engineering
- SE Process Models
- Agile Development
- Understanding Requirements & Specifications
- Requirements Modeling: Scenarios, Information, Class Diagrams
- Design Concepts
- Designing Systems To Minimize Training & Reduce User Manual Requirements
- Architecture Design & Architecture Diagrams
- User Interface Design
- C# Prototyping
- Communicating Design To Stakeholders
- Presentation Strategies
- WebApp Design
- Quality Assurance
- Software Testing
- Software Reuse
- Real Time Systems
- Product Metrics & Formal Modeling
- Project Management
- Software Cost Estimation
- Risk Management
- Maintenance & Reengineering
- Presenting Software Design Concepts
- Presenting Architecture Diagrams To Stakeholders
- Presenting Class Diagrams To Stakeholders
- Presenting Prototypes To Stakeholders
- Formal & Informal Code Reviews, Design Review, etc.

Upon successful completion of this Oral and Visual Communication (OVC) course, students will have demonstrated the ability to:

1. identify and use the elements of effective oral and visual communication.
2. create and deliver effectively structured oral presentations using language correctly and appropriately.
3. use visual media that are effective, appropriate, and well integrated into the presentation.
4. analyze and critique oral and visual components of presentations.
5. respond effectively to questions and comments from audience members.

Textbooks



Required Textbook

Software Engineering (8th Edition)
ISBN: 978-0078022128
by Roger S. Pressman



Optional Textbook

Software Engineering (9th Edition)
by Ian Sommerville

4 Exams

Tentative Exam Schedule

Exam	Date	Points
Exam I	2/7	200 Points
Exam II	2/28	200 Points
Exam III	3/28	200 Points
Exam IV	4/25	200 Points

Homework & Other Labs

Series of Prototypes and Presentations related to final project ~ 250 Points

Final Project & Final Project Presentations

Final Project

Series of Prototypes and Presentations related to final project ~ 650 Points

Work Load

Work Load

In order to do well in this course, most of you should plan on nine-ten hours a week reading chapters, studying slides, doing homework, using design tools, and doing design.

Labs

Lab Assignments / Projects

Laboratory assignments/projects will be assigned regularly throughout the semester. All Labs & Homework Are Due The Next Class Period Unless Specified Otherwise On Class The Schedule Page! It is your responsibility to check the class schedule page daily.

No lab is complete until:

- (1) If an Individual Assignment → the student sign the pledge form associated with the lab and get that form to Dr. Hicks – the late penalty clock will continue until this form is given to Dr. Hicks in lecture or placed in the mailbox outside his office – don't forget to include the amount of time you spent working on the lab.**
- (2) If a team Assignment → all students on the team must sign the pledge form associated with the lab and get that form to Dr. Hicks – the late penalty clock will continue until this form is given to Dr. Hicks in lecture or placed in the mailbox outside his office – don't forget to include the amount of time you spent working on the lab.**
- (3) The student(s) place all required lab components, if any, in the professor's drop box.**

Late penalties shall accrue until all of the requirements, above. are satisfied.

Assignments are due at the beginning of class. Labs submitted after the beginning of class are late! Do not come to class late or skip class in order to complete your assignments, this will put you behind on the new material!

Be sure to keep backup copies → Back up your work to your flash drive. Backup your work to your network folder. Backup your work to your personal computer.

Do not leave copies of your work on any university computer! → where others might have access to your work!

When Labs Are Due

All Labs & Homework Due Next Class Period Unless Specified Otherwise On Class The Schedule Page!

Short Answer Questions – Study Groups

Some of the labs will include some short answer questions.

- 1) The answers to all short answer questions must be handwritten in pen or pencil; they must be written in the space provided on the lab forms!
- 2) You must answer at least 90% of the short answer questions correctly in order to get credit!

- 3) All short answer questions will be spot checked and graded for completion, but not checked for accuracy. No answer key will be provided for the short answer questions.
- 4) I encourage students to form a study group (comprised of other students in this class); get together to prepare for exams.
- 5) You may not share your class work with others outside this class; it is a violation of academic integrity to share your work with others outside the class.
- 6) It is also a violation of academic integrity to share your academic work with others in this class ...BUT I will return all labs --- Once each lab are returned, I encourage you to compare your answers with others in your study group who HAVE also completed and had that lab returned.
- 7) Do not share, or compare, with those in your group who have not completed the respective labs.

Last Date To Turn In Late Work

No Late Assignments, Except Final Presentations, Will Be Accepted After Noon on the first Reading Day!

Late Penalties

Late Lab Assignments / Projects

Programming Homework & Labs will have a late penalty of no more than **25% Per Day** (MTWRF --> Saturday and Sunday not included).

Homework that only consists of short answer questions should be turned in on time → thus the late penalty for this type of homework will be no more than **50% Per Day** (MTWRF --> Saturday and Sunday not included).

Attendance Policy

Attendance & Class Participation is mandatory.

- 1] A lot of the software engineering information can be easily learned through reading the book, reading through my slides, and working through tutorials. I will try not to bore you with endless slides unless I feel the material is sufficiently important/complex to warrant this.
- 2] A lot of our class time will be devoted to working together with your team. You will make many important design decisions during lecture. **It is absolutely critical that you be there.**
- 3] Some of the activities will be completed as a team; your team suffers when you are not here.
 - (a) Each of you are given two excused absences for sickness or personal reasons. **SAVE YOUR ABSENCES IN CASE YOU ARE REALLY SICK.** You will not be considered absent if you are (1) attending/presenting at a university sponsored conference, off campus interviews, or representing the university { university programming team competitions, university athletic team competitions, university debate competitions, etc.}

- (b) There will be a 40 point reduction in your total points for your third absence, your fourth absence, your fifth absence, your sixth absence, etc. I had one student miss seven classes last year. The point reduction had had the same effect of changing is A on Exam I to a 0.

If I am forced to cancel class for some reason, I will generally send class participants an email in advance.

If You Are Not There When I Take Roll, You Are Absent For The Day

Grade Breakdown

Exams	~ 800	points
Labs, Homework, Presentations, & Projects	~ 900	points
Attendance – 5%	~85	points
Total	~1700	points

The Final Grade will be calculated by dividing the Points Earned By The Points Possible. Each student should record their quiz grades and retain all graded assignments from the entire semester. It is the responsibility of the student to maintain the number of points they have earned so that they can do a current grade calculation at any time.

Grading Scale

A 93% - 100%	B+ 87% - 89.9%	C+ 77% - 79.9%	D+ 67% - 69.9%	F 0% - 59.9%
A- 90% - 92.9%	B 83% - 86.9%	C 73% - 76.9%	D 63% - 66.9%	
	B- 80% - 82.9%	C- 70% - 72.9%	D- 60% - 62.9%	

Students will receive at least the grades indicated by the scale above.

Lab Access

What if the Lab is Down For A Period Of Time?

Should university access to computer facilities significantly affect your ability to complete an assignment, due dates will be appropriately adjusted; these dates will not be altered if a lab is down for only part of an evening. It is not necessary to call Dr. Hicks if the network goes down. Labs should be done as scheduled!

Having Problems?

Having difficulties?

1. Check your mail!
2. Seek help from group members.
3. Bring printed copies of information that will help us detect your problems without going on-line!

E-Mail → thicks@trinity.edu

Can you send me email?

Yes! I try to check my e-mail once a day in the early morning, but I am sometimes detained by students. I do answer many short questions.

I do not debug programs mailed to me!

I do not accept labs by email – They are to be submitted with a Pledge Form!

Websites

<http://carme.cs.trinity.edu/thicks> [Primary]

<http://krypton.cs.trinity.edu/thicks> [Back-Up]

Letters Of Recommendation

When Seeking A Letter Of Reference

- bring an informal transcript
- a letter listing work experiences, awards, scholarships, etc.
- a placement form to add the recommendation to your file (if applicable)
- stamped and addressed (typed) envelopes (if applicable)
- hard copies of significant programming efforts that I have not seen (computer science majors)
-

Academic Integrity

The Integrity Policy and the Code share many features: each asserts that the academic community is based on honesty and trust; each contains the same violations; each provides for a procedure to determine if a violation has occurred and what the punishment will be; each provides for an appeal process.

The main difference is that the faculty implements the AIP while the Code is implemented by the Academic Honor Council. Under the Integrity Policy, the faculty member determines whether a violation has occurred as well as the punishment for the violation (if any) within certain guidelines. Under the Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to investigate, adjudicate, and assign a punishment within certain guidelines if a violation has been verified.

Students who are under the Honor Code are required to pledge all written work that is submitted for a grade: “On my honor, I have neither given nor received any unauthorized assistance on this work” and their signature. The pledge may be abbreviated “pledged” with a signature.

My recommendation for students cheating is an automatic "F" in the course, a letter submitted to student affairs, and the proper following of Trinity University academic integrity policy.

Take great care to erase all labs from university computers so that others may not submit your work as their own! Do not loan any lab or project to a fellow student! Do your own work!

Before you resort to turning in someone else's work as your own, let's talk. If you are under undue pressure to aide other students in such a way that your own security is threatened, let's talk. It is not worth failing a three hour course and risking your entire academic future!

Office Hours

Office Hours: CSI-270Q [First Come- First Serve]

Day	From	To
Tuesday/Thursday	8:30 AM	9:55 PM
Tuesday/Thursday	2:00 PM	3:30 PM
Wednesday	9:00 AM	12 Noon

I am almost always in my office or helping a student in a lab during office hours; if I must miss my office hours, I generally post a note on the door and/or send mail to my students and/or notify students in lecture. If I am not physically in the office, I will have most often near by in one of the second floor labs. If I have someone in my office and you need to see me, please knock once at the door so that I know you are waiting; there are plenty of places outside my office to work/wait.