Text: **Software Engineering: A Practitioner's Approach** by Roger Pressman.

Other Readings: Each team will need to identify appropriate background reading for their particular project. Each student will read current literature in a particular topic of the student's choice. An oral report will be presented to the class on the material in the article(s).

Objectives: Students will apply their theoretic background, together with current research ideas to solve real problems. They will draw from their entire computer science curriculum, noting how theoretic results apply to real problems. A major goal of the course is for students to develop and hone their skills in writing – both technical and general.

Method: Students will carry out team projects which involve real industrial problems. Each team will deal with all the stages of addressing a software problem: requirements analysis, solution design, implementation, testing, and documentation. Because the problems come from various parts of industry, each team will interact with an industrial partner to clarify a variety of issues related to the problem definition. They will then do background reading specific to their particular problem.

Each team will prepare a requirements document, which means a precise description of what the project requires.   This document must be clear and detailed so that both the CS team and the client for whom the project is being prepared will have an unambiguous agreement about the final product.

Students will then discuss a variety of ways to address their problem, considering efficiency, correctness, reusability, ease of use, modularity, and other aspects of design, ultimately choosing a particular design to implement. The team must prepare a design document that includes both an overview and a detailed description of each component the project will include. This is an example of technical writing.

They will prepare test plans for their solution according to software engineering guidelines. These plans must be carefully and accurately documented.   Moreover, as the tests are performed, there must be documentation that explains the results of every test, both what faults have been identified and what needs to be done to correct those faults.

All stages of the work will be carefully documented. This gives students experience with technical writing, one very important component of the software engineering process. The final product will include a complete history of the project, written according to a particular format. Students must also prepare two major project documents as done in

every industrial software engineering project – a document called the "user's manual," for the user of the software, giving detailed instructions about how to use every function of the software and a document called the "programmer's manual," for software engineers who must maintain the software, making updates and adjustments as needed.

These documents will be submitted on a periodic basis and students will be given formative feedback alerting them to both good aspects of their work and features that are not adequate with suggestions for improvement. Students will then rewrite the documents addressing the feedback they have received.

During the last week of the course, students will demonstrate their projects. Further, each team will be given documentation for the work of another team and will use that documentation to try out the software as users using the user's manual, and they will try to make at least one update using the programming manual.

Exams: There will be quizzes on material in the textbook, emphasis being placed on how the material applies to the projects.

Grading: At each stage of the project, students will be required to present their findings both in a written and oral report, prepared according to guidelines provided by current SE research. Team grades will be assigned at each of these stages. Peer evaluations will be used to distinguish among team members.

The project will determine 60% of the final grade. The other 40% will come from exams and class participation.

Professor: Joan Krone
Meeting: Knapp 308   MTWF 11:30
Office: Gilpatrick House   Daily 10:30, appointments any time, just ask.

Each team will present weekly progress reports. Guidelines will be provided.

Due dates for quizzes and other assignments will be announced in class.

The tentative schedule is subject to change. Any changes will be announced in advance.

Week	Topic	Readings
August 28	What is Software Engineering?	Ch. 1, 2
	Software Process	Ch. 3 - 6
September 4	Requirements	Ch. 7 - 11
	Project Introduction	
September 11	Design	Ch.11 - 13
September 18	Design	Ch. 14 - 18
September 25	Design	Ch. 31, 33
October 2	Management	Ch. 32, 34
October 9	Management	Ch. 35
October 18	Management	
October 23	Documentation	Ch. 19 - 20
October 30	Quality Management	Ch. 21 - 23
November 6	Quality Management (Testing)	Ch. 24 - 26
November 13	Quality Management (Testing)	Ch. 37
November 27	Process Improvement	Ch. 38
December 4	Trends in SE	
December 11	Project Presentation	

Disability statement
Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately as soon as possible to discuss his/her specific needs. I rely on the Office of Academic Support & Enrichment center in 104 Doane to verify the need for reasonable accommodations based on documentation on file in their office.

Academic integrity
The students and faculty of Denison University and the Department of Communication are committed to academic integrity and will not tolerate any violation of this principle. Academic honesty, the cornerstone of teaching and learning, lays the foundation for lifelong integrity.

Academic dishonesty is, in most cases, intellectual theft. It includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for evaluation. This standard applies to all work ranging from daily homework assignments to major exams. Students must clearly cite any sources consulted – not only quoted phrases but also for ideas and information that are not common knowledge. Neither ignorance nor carelessness is an acceptable defense in cases of plagiarism. It is the student's responsibility to follow the appropriate format for citations.

As is indicated in Denison's Student handbook, available through mydenison.edu, instructors must refer every act of academic dishonesty to the Associate Provost, and violations may result in failure in the course, suspension, or expulsion. (For further information, see http://www.denison.edu/student-affairs/handbook/article7.html.)