"A common mistake people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools." - Douglas Adams - Mostly Harmless

Overview
Software engineering is a discipline for solving business problems by designing and developing software-based systems. As with any engineering activity, a software engineer starts with a problem definition and applies tools of the trade to obtain a problem solution. However, unlike any other type of engineering, software engineering seems to require great emphasis on methodology or method for managing the development process, in addition to great skill with tools and techniques. Experts justify this with the peculiar nature of the problems solved by software engineering. These “wicked problems” can be properly defined only after being solved.

This course introduces the theory and practice of software engineering, with a focus on planning and design processes. Topics include methods and tools for software specification, design, and documentation, software development processes, professional ethics, responsibility, and liability in the software lifecycle. You will learn about current software engineering practices and tools, and complete team projects in the process. Interaction with project sponsors from industry, government, and academia will provide realistic experience with software engineering from a professional perspective.

The general learning objectives for this course include the following ABET Outcomes:

- A: An ability to apply knowledge of mathematics, science, and engineering.
- C: An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired standards.
- D: An ability to function effectively on teams to accomplish a common goal.
- E: An understanding of professional and ethical issues and responsibilities.
- F: An ability to communicate effectively with a range of audiences.
- G: An ability to analyze the local and global impact of computing on individuals, organizations and society.
- H: Demonstrate a recognition of the need for and an ability to engage in continuing professional development.
- I: An ability to use the techniques, skills, and modern engineering tools necessary for engineering.
- J: An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based
systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

• K: An ability to apply design and development principles in the construction of software systems of varying complexity.

The primary key to this course is its practicality and direct relationship to the types of things you will be doing in the real world. The goal is to have you equipped with a broad set of tools and ideas that will prepare you for real world software engineering.

General Information
Place: PHSC 323
Days: Tuesday & Thursday
Time: 10:30 – 11:45 am
Email: kdcrawford@ou.edu
Office Hours: By appointment, before or after class
Prerequisites: CS 4263
Course assistant: TBA

Materials
A Concise Introduction to Software Engineering, Pankaj Jalote – get the book from here:
http://www.academia.edu/8187918/A_Concise_Introduction_to_Software_Engineering-pankaj_jalotte

Schedule
For the most part, Tuesday will be lecture, Thursday will be project time. The last two weeks of class will be reserved for project presentations.

Evaluation
In this course you will be learning and applying software engineering theory and practice – especially practice! We will follow a standard grading scale:

• 90-100: A
• 80-89: B
• 70-79: C
• 60-69: D
• < 60: F

The contributions to your grade will be as follows:

• Homework: 25%
• Team projects: 50%
  • Project Meeting Minutes: 5%
  • Team Evaluations: 5%
  • Project papers, presentations, presentation attendance: 40%
• Final Exam: 25%
Project presentations

The last 4 classes will be reserved for project presentations, and we will have 3 per class. You should plan to attend all three classes to see all of the presentations.

Presentations can be on the white board or via PowerPoint or whatever media suits you (electronic media is preferred to save time). Each team member should participate in some way in the presentations.

Project Meeting Minutes

Brief (bullet point) project meeting minutes are due each Thursday after we begin meeting in project groups. This is simply a statement of what you did since the last report, what you are planning next, and whether or not anything is blocking your progress. The idea comes from Agile scrums. You should let me know asap if something is blocking your progress. You only need to turn in one project status per team.

Team Evaluations

You will be evaluating each of your team members concerning the project. Evaluation forms will be on D2L.

Policies

Class Attendance
Class attendance is important. You will be responsible for anything in class regardless of your attendance, except as otherwise stated in the Policies below. There will be small group work at times, as well as unscheduled quizzes that cannot be made up.

Class Home Page
This class will use Desire2Learn (D2L) for our home page. Log in with your 4x4 using your standard OU password. If you have difficulty logging in, call 325-HELP. This software provides a number of useful features, including a list of assignments and announcements, an electronic mailing list, newsgroups, and grade book. I will use this web site for all updates, and you should check it regularly.

Academic Misconduct
All work submitted for an individual grade, such as quizzes, should be the work of that single individual – not their friends, and not their tutor.

- Do not show another student a copy of your homework or projects before the submission deadline. The penalties for permitting your work to be copies are the same as the penalties for copying someone else’s work.
- Upon the first documented occurrence of collaborative work (other than working on group projects with your assigned team), I will report the
Academic misconduct to the Campus Judicial Coordinator. The procedure to be followed is documented in the University of Oklahoma Academic Misconduct Code.

**Accommodation of Disabilities**
The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173.

**Adjustments for Pregnancy/Childbirth Related Issues**
Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact me as soon as possible to discuss. Generally, modifications will be made where medically necessary and similar in scope to accommodations based on temporary disability. Please see [http://www.ou.edu/eoo/faqs/pregnancy-faqs.html](http://www.ou.edu/eoo/faqs/pregnancy-faqs.html) for commonly asked questions.

**Title IX Resources**
For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24/7, counseling services, mutual no contact orders, scheduling adjustments and disciplinary sanctions against the perpetrator. Please contact the Sexual Assault Response Team at 405/615-0013 (24/7) to learn more or to report an incident.

**Use of Evaluations**
The College of Engineering uses student ratings as one of the bases for evaluating the teaching effectiveness of each of its faculty members. The results of these forms are important data used in the process of awarding tenure, making promotions, and giving salary increases. In addition, the faculty uses the forms to improve their own teaching effectiveness. The original request for the use of these forms came from students, and it is students who eventually benefit most from their use. Please take this task seriously and respond as honestly and precisely as possible, both to the machine-scored items and to the open-ended questions.

**Religious Holidays**
It is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays.