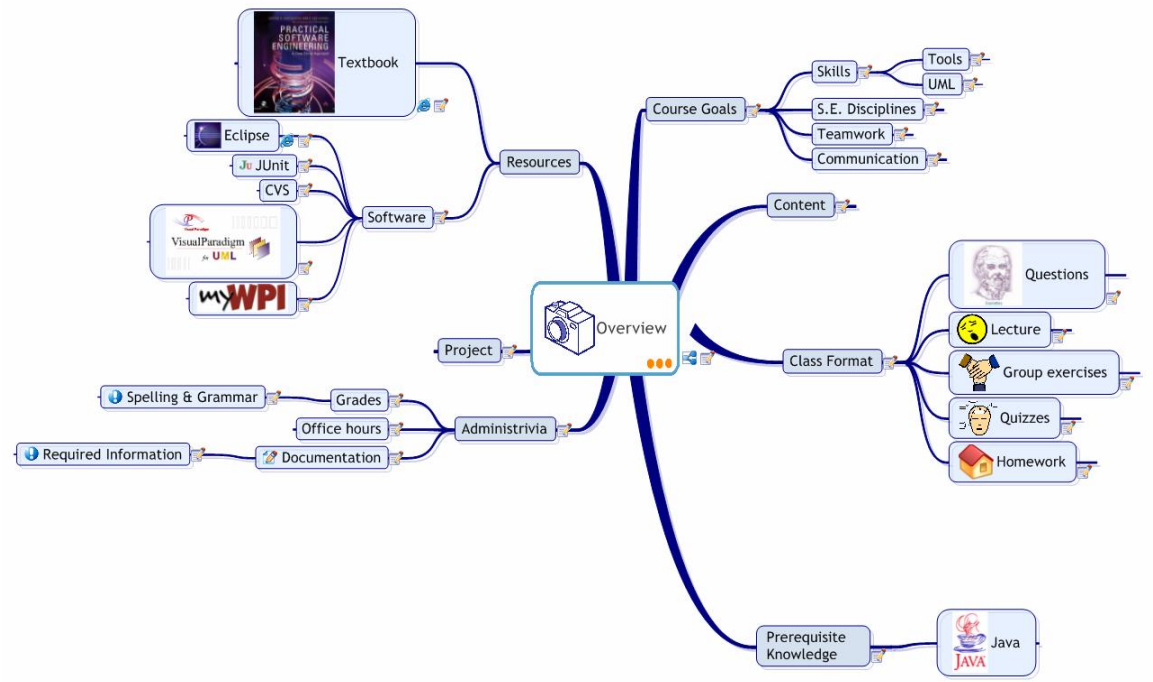
Overview



See document: CS3733 Overview.mmap

Every student should look this section over carefully. There are several reasons for this:

- You need to know what to expect and how much time you should plan in your schedule to successfully complete the course.
- You need to know what you're expected to know coming into the course. Although there are no hard prerequisites, the section on What You Should Know lays out what you should be very comfortable with before taking the course.
- You need to know what you're going to get out of the class (other than a grade) and determine if it fits your overall education plan.
- You need to know how the class will be run, the rules and regulations, and how you'll be graded.
- You need to know who to contact and how to contact them when you need help.

Course Goals

What good is taking a course unless you know what you're going to get out of it. At WPI professors are encouraged to identify a small set of *outcomes* that students should realize when they have successfully completed the course. The outcomes and goals for this course are presented in this section.

Skills

One of the things you're probably most interested in is the set of skills you will acquire, or improve by taking this course. Software engineering is unlike some of your other computer science classes. It is a broad course that combines many disciplines.

Besides the major disciplines, teamwork, and communications, you will learn several specific skills by taking this course.

Tools

You will become proficient with a variety of tools during this course. Specifically:

- The Eclipse development environment
- JUnit, a unit testing framework for Java
- Rally project management software
- Visual Paradigm for UML
- CVS

UML

The Unified Modeling Language (UML) has become a standard for describing models of software and other types of systems.

In this course you will learn the basics of UML by learning how to create use case, class, and sequence diagrams.

S.E. Disciplines

One way to think about software engineering is to think of it as the application of various *disciplines* in concert with each other, for the purpose of producing software intensive systems.

Some software development processes, such as the Unified Process (UP), is presented in terms of disciplines. The main disciplines from the UP are:

- Business modeling
- Requirements management
- Analysis and Design
- Implementation
- Quality / testing
- Deployment

There are other supporting disciplines as well. The purpose of the disciplines is to present the activities, artifacts, and roles described by the process, in an ordered way.

In this course, you will become most familiar with the second trough the fourth disciplines described above.

Teamwork

Software is rarely developed by individuals. You will work as part of a team. This course will give you opportunity to hone your interpersonal skills.

You will be expected to contribute to your team's success. ***It is extremely important to understand that you cannot succeed in this class unless you are able to work effectively in a team environment.***

Communication

Being able to communicate well goes hand-in-hand with the ability to work as part of a team. In this class you will have the opportunity to improve your written and oral communication skills.

Content

The content of the course is primarily taken from the text book. We will augment this with additional topics and readings.

Class Format

This should be an interactive class. I don't want to spend 50 minutes, four times a week talking to a bunch of sponges. I want the course to be a dialog. There are a few ways that I'm going to try to stimulate the course to help encourage discussion and vary the approach to the material.

Questions

One of the best ways to really learn something, besides teaching it to others, is to answer questions. The questions may be ones you can readily answer, or they may be ones that you will have to do some research in order to answer them.

I plan on using questions to spark the dialog. This Socratic approach will be a main method of keeping the class moving.

Lecture

There will be some standard lecture, but I do not plan on using a lot of PowerPoint slides as I have for some of my courses.

Group exercises

We will spend some time on group exercises. The exercises might involve designing a specific class, or set of classes, drawing a UML diagram, or some other exercise that will improve your OOAD skills.

Quizzes

There will be some short (5-10 min.) quizzes. These will not be announced and you will not be able to make them up unless you have a school-authorized excuse for missing the class.

Homework

Yes, there will be homework. Much of it taken from the exercises in the book. One of the criticisms I got last year was that there were too few homeworks, and the ones that were there were too *big*. So, this year I'll have more smaller ones. You should expect one homework assignment a week, possibly more often if they are very small and simple.

Homework is due by class time, the day they are due. The course web pages, and these notes, contain the assignments. We will use turning for submitting assignments, unless otherwise specified.

Prerequisite Knowledge

This course involves a project and some homework assignments that will require you to write programs in Java. I assume that you have this prerequisite knowledge. If you do not know Java, but want to take this class you will have to learn the language outside of the normal workload. The instructor and other staff members will be available to help you and, if there are enough people who request it, we will run group help sessions.

Java

Administrivia

See the course web page for class policies, staff, office hours, grading, and other information.

Web pages are at: http:\\www.cs.wpi.edu\~gpollice\cs3733- b04

Grades

Grades will be determined approximately according to the following distribution:

- Exams 25% (combined)
- Project 35%
- Homeowrk 30%
- Quizzes 10%

Spelling & Grammar

I will take points off for poor spelling and grammar.

Office hours

See the project web pages.

Documentation

While documentation is a by-product of software development, it is important. You need to ensure that you establish a standard format for documentation. For this class you are expected to have all of your team documents contain the following information.

Required Information

Every document must have:

- Team name
- Team member names
- Date
- Revision history
- Title

Project

The project for this class is the creation of a software system to help operate a kennel. The kennel is primarily for cats, but other animals are planned to be accommodated.

See the class project web page for more details.

Resources

Textbook

See document: maciaszek

The text for this course is *Practical Software Engineering* by Maciaszek and Liong.

There are on-line resources for the book that can be found at the associated URL.

Software

You will use several programs during this course. Each of these is described with information on where to get them. All of the software you need will be available in the computer lab machines as well.

Eclipse

See document: www.eclipse.org

Eclipse is the Java IDE that I expect you to use. It contains everything you need to be an effective software developer for building Java applications, including integration with tools to test, manage changes, and package your work.

The link shown takes you to the Eclipse home page. Currently, Eclipse 3.0 or beyond is the recommended choice.

JUnit

JUnit is the unit testing package / framework that you will use to test your work. It is integrated into Eclipse and comes with the standard Eclipse Java development tools that is installed by default.

CVS

CVS is the recommended, but not required, version control software. You will be able to set up a CVS project on the computer science machine. If you do not have a CS account, notify the staff.

Visual Paradigm for UML is the UML modeling tool we will use for this course. It is available on the lab computers and can be downloaded to your own system. The license key for the academic license for the Standard Edition 3.2 will be posted on myWPI along with download instructions

You're expected to check myWPI regularly for announcements and discussions.