EECE 417: Software Architecture

Instructor: Karthik Pattabiraman (karthikp@ece.ubc.ca)

Teaching Assistants: Farid Molazem Tabrizi (faridm@ece.ubc.ca)

Website: http://courses.ece.ubc.ca/~eece417/

Course Logistics (Lectures, Office hours and Lab):

What ?	When ?	Where ?
Lectures	Tuesdays and Thursdays (3:30 to 4:45 PM)	Chemical and Biological Engineering bldg, 102
Karthik's Office hours	Thursday (1:00 to 1:45 PM), other times by appointment	Fred Kaiser 4048
Farid's office hours	TBD	TBD

Overview

This is a fourth year course on software architecture. We will study the high-level design of software systems, starting from requirements gathering to their implementation, architectural styles and idioms, connectors, modeling, and visualization. We will also study real world software systems and their architecture through the course of this term.

The pre-requisites for this course are EECE 310 (or equivalent), EECE 320 (or equivalent) and EECE 315 (or equivalent). I will assume that you have some familiarity with building a substantial software system, which would likely be the case if you had taken the prerequisite courses. However, you are responsible for filling in any gaps in your knowledge of the material covered in the prerequisites.

Course Topics

- Architecture in context
- Review of OO modeling
- Basic concepts
- Design patterns
- Styles and Greenfield design
- Software connectors
- Implementation and deployment
- Designing for reliability and security

- Case studies drawn from a wide-range of systems from Operating Systems (OS) to web applications

Textbooks

There are two **required** textbooks. These should be available from the bookstore.

1. Software Architecture: Foundations, theory and practice. Richard N. Taylor, Nenad Medvidovic, Eric Dashofy, Wiley, 2009.

2. Beautiful architecture, Diomidis Spinellis and Georgios Gousios , O'Reilly, 2009.

In addition, there are two **recommended** textbooks:

1. Essential Software Architecture, Ian **Gorton**, Springer, 2006. ISBN: 978-3540287131

2. Software Architecture in Practice, 2nd edition, Len **Bass**, Paul Clemens, Rick Kazman, Addison Wesley 2008, ISBN: 978-0321154958

Evaluation

The evaluation consists of three components as follows:

1. Exams (45%): There will be a final exam that comprises 45% of your grade. There is no mid-term exam for the class though.
2. Project (40%): You will be required to do a final project for the course (we will specify the project). You will have four milestones to meet throughout the course, each of which will count for 10% of the grade.
3. Class presentation and participation (15%): You will be required to present a topic from the "beautiful architecture" book every Thursday (by signup). There will be a presenter and an answerer for each topic. The presentation counts for 10% of your course grade, and class participation counts for 5%.

Policies

1. This course has a zero tolerance policy towards plagiarism. Plagiarism constitutes any and all forms of sharing ideas, designs or implementation details. You can find more information about what constitutes plagiarism here: http://www.library.ubc.ca/clc/airc.html. The penalty for plagiarism can range from getting an F in the class to dismissal from the university: http://www.students.ubc.ca/calendar/index.cfm?tree=3,54,111,960
2. Projects will be done in groups of two. You need to pick a partner by the beginning of the second week. You are free to discuss, share and collaborate with your partner without reservations. However, both of you will be awarded the same grade for the project.
3. All deadlines are hard unless you have a documented medical or family emergency. In both cases, you may be called upon to produce documentation related to the nature of the emergency.
4. Finally, it is your responsibility to keep up with course announcements, lectures and assignments by following the course website. We will use Piazza for answering questions related to the course. Please sign up at the earliest.