EECE 417: Software Architecture

Course Orientation
Course Logistics

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

• **TA**: Farid M. Tabrizi (faridm@ece.ubc.ca)

• **Meetings**: Tuesdays/Thursdays 3:30 to 5 PM

• Looking for alternate classroom in MCLD
What is this course about?

- High-level design of software systems
- Understanding of requirements and constraints in software design
- Mapping of constraints to design decisions
- Describing and documenting a design
Pre-requisites

- EECE 310 – Software Engineering
- EECE 315 – Operating Systems
- EECE 320 – Discrete Structures and Algorithms
- Maturity in building large software systems
Why take this course?

• Gives you in-depth appreciation of S/W design

• Elevate your skills beyond coding
  – Makes sure you won’t be offshored
  – Demand for software architects is high

• Understand the value of good design and apply it in the software systems you build
Differences with EECE 310

EECE 310
• Focus on functional requirements
• Emphasis on single module/class design
• Programming in Java

EECE 417
• Focus on non-functional requirements
• Emphasis on set of interconnected modules
• Programming required only for project (in Java)
Evaluation

• **Three components of evaluation**
  – Exams (45%) – Only one final exam, no mid-term
  – Project (40%) – Complex system design starting from requirements gathering to implementation
  – Class participation and presentation (15%)
    • Presentation from the Beautiful Architecture book (10%)
    • Class participation (5%) – Piazza and in-class
Class Structure & Logistics

• I will lecture on Tuesdays from the Taylor book

• You will present on Thursdays from the Beautiful Architecture book (from Jan 19th)
  – Signup sheets will be passed around next week
  – Two people sign up for each presentation
  – One person makes a PPT presentation
  – Another person answers questions from class
Project

• You will be expected to complete a substantial project in software design (Details next week)

• Three milestones for the project
  – Requirements document (10%) – Early February
  – Design document (10%) – Early March
  – Implementation and Report (20%) – Early April
  – Pieces are cumulative
Exam & Class Participation

• **Final exam will be based on my lectures**
  – Chapters from the Taylor book
  – Focus on application of the concepts
  – Practice quizzes that will not be graded

• **Class Participation**
  – Ask and answer questions on Piazza (not email).
    Sign up for a Piazza account ASAP.
  – Ask questions during Thursday’s presentations
Some thoughts ...

• This course requires a significant time commitment!
  – Lectures, weekly readings and a course project
  – Do not take it if you cannot spare the time!

• Software design is part science and part art
  – You need to be steeped in it in order to appreciate it
  – Some things you can learn only from experience – I cannot teach you everything in the lectures
  – Intellectually rich and rewarding experience
To do (by next week)

• Sign up for this class on Piazza
  – Link available on course website
  – Monitor the website for classroom changes

• Start thinking about project teams (of 2-3)
  – You need to pick your teams by Jan 19\textsuperscript{th}

Decide if you are willing and able to handle the workload for this class