EECE 443/543: Orientation

Software Project Management
Philippe Kruchten

ece *Electrical and Computer Engineering*

UBC *a place of mind*

Philippe Kruchten, Ph.D., P.Eng., CSDP

Professor of Software Engineering
NSERC Chair in Design Engineering
Department of Electrical and Computer Engineering
University of British Columbia
Vancouver, BC Canada
pbk@ece.ubc.ca

Founder and president
Kruchten Engineering Services Ltd
Vancouver, BC Canada
philippe@kruchten.com

00 - Orientation Winter 2014

Instructor (cont.)

- 7 years at Alcatel (now Alcatel Lucent)
  - Telephone switches
- 17 years at Rational Software (now IBM)
  - Software architect
  - Command and control, embedded systems
  - Managed the development of Rational Unified Process® (RUP®)
- 2 Academic stints
  - Paris (Eng. School), 3 years, 1976-79
  - New-York (NYU), 2 years, 1982-84

00 - Orientation Winter 2014

Teaching Assistant

- Derick Hsieh
- DerickH@ece.ubc.ca
- Kaiser 4085 : Software Engineering and Architecture Lab
- Cell: (604) 518-1741

00 - Orientation Winter 2014

Objectives

- Management aspects of software development projects, or software-intensive product development
  - i.e., not design, nor programming
- Identify the issues at stake, the context
- Show some of the techniques and standards applicable to small or large projects.
- Define the role of the project manager

00 - Orientation Winter 2014

Objective (cont.)

- Provide conceptual models to allow the student to critically reason about the value of the practices, methods, tools, or techniques, and their applicability to a given type of software project.
- Introduce to issues of ethics, IP rights, professionalism specific to SW development
- Illustrate a few concepts by simulation games, or short videos, or exercises
- Practice through assignment with small elements of management artifacts

00 - Orientation Winter 2014

At the outset you should be able to…

- Distinguish different kinds of software projects
- Select or adapt lifecycle and practices to a given project
- Estimate effort and cost of SW development
- Track progress on multiple aspects: time, risk, deliveries, quality, staff, …
- Understand key issues dealing with people and teams
- Understand some of the legal and ethical issues surrounding software projects
- Understand communication issues, especially in large or global projects
- Reflect on your own practice

00 - Orientation Winter 2014

What will you do…

- Lectures
  - Monday, Wednesday, Friday 12:00 – 12:50
  - Slide handouts to be found on Connect
- Assignments
  - 8 individual assignments spread across 13 weeks
- Reading
  - Book(s) and Papers
- Examination
  - Mid-term + final
- Tutorials
  - Groups exercises, case studies, discussions
  - Three simulation games

00 - Orientation Winter 2014

Course Outline

1. Introduction
2. Managing risks
3. Managing time
4. Managing quality
5. Managing objectives and scope
6. Managing complexity
7. Managing changes
8. Managing software assets
9. Managing software products
10. Managing people
11. Managing external stakeholders
12. Managing the software process
13. Managing larger projects

00 - Orientation Winter 2014

Evaluation

- Assignments: 40 %
  - Assignments #1 to #6 , and #8: 4 %
  - Assignment #7: 12 %
- Mid-term exam: 15 %
  - 45 min. February 14th
- Final exam: 45 %
  - 2 hours, date TBD (after April 5th)
- May be adjusted +/- 5 points
  - For attendance, participation, etc.

00 - Orientation Winter 2014

Assignments (2013W)

- 8 Graded Assignments (topics are tentative)
  - Due at 1:00pm on Tuesdays
    1. January 21 – Tool purchase
    2. January 28 - Risk
    3. February 4- Effort estimation
    4. February 11 - Release planning
    5. March 4 – Metrics & Quality
    6. March 11 – Assessing practices
    7. March 25 – Complete development plan
    8. April 1 – Ethical issues
- Connect and Mailbox McLeod 4th floor

00 - Orientation Winter 2014

Assignments

- Individual
- Submitted in print, so instructor or TA can write on them
- Submitted in Connect: date stamp, grades in Connect
- Keep them brief and clean
  - Answer the question, with some justification
  - This is technical material, not a novel
  - No regurgitation of the course material
  - Do not "suck up" to the prof
  - Keep it visually structured and organized (so that we can find the answers)
  - Keep the cosmetics minimal
  - Use a spell checker (but do not trust it)

00 - Orientation Winter 2014

Use of Connect

- Slide handout (PDF, 2-up)
  - Will be updated as we go (check if date says 2013)
  - Set of fall 2010 available as a single pdf file, 6-up.
- Reading material (in PDF)
- Standards and templates
- Assignments: description & submission
- Contact with instructor & T.A.
  - Discussion (public); email (private)
  - Update your email forwarding in Vista
  - Office hours: Ph. Kruchten, Mondays 2 to 5 pm (or by appointment)
  - Better to use pbk@ece.ubc.ca than Connect
- Calendar
- Grade posting

00 - Orientation Winter 2014

Textbook

Bob Hughes & Mike Cotterell, *Software Project Management*

5th edition, 2008

McGraw-Hill, UK

- Highly recommended reading
- Can be shared
- 4th edition is quite OK too

00 - Orientation Winter 2014

The older text book…

- Text book:
  - Pankaj Jalote: *Software Project Management in Practice*, Addison-Wesley, Boston (2002)

  - Alternate reading
  - Out of print… ☹

00 - Orientation Winter 2014

More reading material

- Approx 35 papers (~3 / week) on Vista
  - Usually short and not too academic
- Again, strongly recommended
- I may substitute some for the later modules
  - Do not download and print everything (at least not now)

- Do not repost them outside of UBC (Copyright issue)

00 - Orientation Winter 2014

Standards and templates

- To be used:
  - as a resource when doing assignments,
  - or just to get the flavor of it.
- not to be studied cover to cover
- not needed to pass the exam

- Totally forbidden to repost, copy, etc…
  - Especially the ones that have a diagonal watermark

00 - Orientation Winter 2014

Tutorials

- New in 2014
- In class exercises
- Simulation games
- Additional small lectures

- 2 time slots: Wednesday, 2:00-3:30 or 4:00-5:30
- Not all Wednesdays (see calendar on Connect)

00 - Orientation Winter 2014

Simulation games

- Three *optional* activities
- Two sessions for each

- January 29 (2:00-3:30) or (4:00-5:30)
- February 12 (2:00-3:30) or (4:00-5:30)
- March 26 … (tbd)

00 - Orientation Winter 2014

FAQ

- Re: Lectures
  - Do I really need to come in person?
    - Yes, not everything is written on the slides. I do say things and show material not written on the slides. But I will not check who's in. If you miss a class, check with a colleague. (No, I do not do private catch-up classes during my office hours)
  - When you have a guest speaker, is the class optional?
    - No, why would they say something useless? And yes, what they say can be used in assignment and exams.
  - Can you start a bit later, like 12:10? (Because my bus, …)
    - No, I'll start at 12:00 sharp. Every class.

00 - Orientation Winter 2014

FAQ (cont.)

- Re: Exam / Open book concept…:
  - Can I bring my computer?
    - No, neither can you bring your cell phone, your iPhone, your PDA, your iPod, MP3 player, anything which allows communication with the outside world.
  - Do I need to print all the material (slides, papers, etc.)?
    - The answer is unlikely to be verbatim in a paper or on a slide. Open book does not mean that it is an exercise in fast text searching. It means that having all the books does not matter much. Bring your brains.
  - Can we have a practice exam?
    - Yes, it is called 'mid-term exam'.
  - Can we NOT have an exam at all?
    - No. I am not given this option; this is not a project course.

00 - Orientation Winter 2014

FAQ

- Re: Assignments
  - Can I bring my assignment 2 days later?
    - No.
  - Can we do assignment in pairs or groups?
    - No.
- Re: Grading
  - Where did I lose a point? Or ten?
    - You gain points starting from zero, you do not lose some.
  - What is **the** answer?
    - This is not math; there is rarely one single good answer…
  - And can you show me where it is on your slides?
    - … and the answer is not likely to be verbatim on a slide.

00 - Orientation Winter 2014

EECE443-543 Key dates – Winter 2014

- January 6: First class
- January 21: Assignment 1 due 1:00pm
- January 28: Assignment 2 due
- January 29: Simulation game 1
- February 4: Assignment 3 due
- February 11: Assignment 4 due
- February 12: Simulation game 2
- February 14: Mid-term exam
- February 17, 19 & 21: no class (reading break)
- March 4: Assignment 5 due
- March 11: Assignment 6 due
- March 25: Assignment 7 due
- April 1: Assignment 8 due
- *March 26: Maybe game # 3*
- April 9: Last class & Tutorial
- TBD (after April 10): Final exam

00 - Orientation Winter 2014