University of Regina | Faculty of Engineering and Applied Science

ENSE 374 – Software Engineering Management (Fall 2018)

Instructor: Tim Maciag | tim.maciag@uregina.ca | 306-337-2407 | ED 410 | http://www.maciag.ca
Lab instructor: Trevor Douglas | trevor.douglas@uregina.ca | 306-585-5269 | ED 474 | http://uregina.ca/~douglatr

Times and dates

Lectures: Tuesdays & Thursdays | 1:00 pm – 2:15 pm | ED 312
NOTE: *Fall break: November 7, 2018 – November 13, 2018*
Labs: Wednesdays @ 2:30pm – 5:15pm (374-092) *OR* Fridays @ 11:30 am – 2:15 pm (374-091) | ED 441
Midterm: October 18, 2018 (Thursday) | 1:00 pm – 2:15 pm | ED 312
Final: December 20, 2018 (Thursday) | 2:00 pm – 5:00 pm | Location TBA
Tim's Office Hours: Tuesday | 10:00 am – 12:00 pm | ED 410 | All other times by request/appointment

Course description

Principles of software engineering: requirements, design, and testing. Review of principles of object orientation. Object oriented analysis using UML. Frameworks and APIs. Introduction to the client-server architecture. Analysis, design and programming of simple servers and clients. Introduction to user interface technology.

Learning outcomes

Improve your programming and project management ability and skills. Develop clear, concise project requirements and documentation. Design, develop, and test applications and graphical user interfaces.

Text/Resources

- Course content will be loosely based on the following texts. Although you don't need to buy these, they are good to have on your (digital) bookshelf if you are serious about this software engineering/development thing
  - A. Hunt and D. Thomas. The Pragmatic Programmer. Addison-Wesley. 2000
  - S. McConnell's. Code Complete, Second Edition. Microsoft Press. 2004
  - R.C. Martin. Clean Code. Pearson Education. 2009
- The first two textbooks are available in the UR bookstore. Note that all of these textbooks are available in Safari Books through the library (and through various resellers, e.g. Amazon, etc.).
- All other resources will be posted in URCourses.

Course evaluation

Labs	Group project	Midterm exam	Final exam	Attendance & Participation	Instructor discretion
20%	20%	10%	30%	20%	+/- 5%

Important Notes

- You must pass the final exam in order to pass the course (i.e. you must obtain a grade greater than or equal to 50% on the final). Failure to pass the final exam as stated will result in a final course grade of 40%
- If you fail to get 60% or higher on the final exam your final grade will omit the group project allocation, adding it to the final exam allocation, making your final exam worth 50% of your final grade and your project allocation 0% of your final grade

- Course attendance and tardiness will be observed and graded (tardiness is equivalent to non-attendance). If you fail to obtain 60% or higher on your attendance and participation grade you will receive 0% for your final attendance and participation grade allocation.
- Participation in the course project is mandatory. If students fail to participate/submit a course project, the student(s) will receive an NP in the course.
    - Throughout the semester, work break-down and progress discussions with the instructor/class will take place. Failure to attend these, as well as failure to illustrate fair collaboration on group work in milestones will result in individual milestone deductions upwards to 100% of the milestone grade allocation as per the instructor's discretion (with detailed rationale/documentation provided).
    - **Special note**: Groups will be able to have a *tribunal* with the instructor, participating in a case to *divorce* group members who have demonstrated a perceived lack of participation. If it is decided by the instructor that a group member is indeed not demonstrating fair and adequate participation, the offending group member, as decided by the instructor, may be separated from the team and required to complete the project, or remainder of the project, individually, among other penalties as decided by the instructor, ranging from additional percentage penalties, with extreme cases resulting in a 0% on the project component for the infracting team member
- Participation and attendance in the labs is mandatory. Failure to attend at least 80% of the labs will result in a 0% grade for your lab allocation

Student safety, behavior, & ethics

- University of Regina, Student Behaviour: https://bit.ly/2Kppljm
- University of Regina, About plagiarism: https://bit.ly/2r9cREm
- University of Regina, Health, Safety, & Emergency Preparedness: https://bit.ly/2HFi0KA

Top Hat

We will be using the Top Hat (www.tophat.com) classroom response system in class. Throughout the semester the instructor will use Top Hat to take attendance as well as engage in live Q/A activity, posing questions throughout lectures for discussion. You will be able to submit answers to these questions in-class/in-person using your Apple or Android smartphones and tablets, laptops, or through text message. This Q/A activity will be used to determine your attendance and participation grade (See page 1).

Top Hat does require a paid (nominal) subscription fee for the semester ($26 + tax for the semester). A full breakdown of all subscription options available can be found here: www.tophat.com/pricing. You can visit the Top Hat Overview (http://bit.ly/2lPB6Vd) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email, but if don't receive this email, you can register by simply visiting our course website: https://app.tophat.com/e/659925 **NOTE**: our Course Join Code is: **659925**

Special needs policy

If there is any student in this course who, because of a disability, may have a need for accommodations, please contact the Centre for Student Accessibility at: https://www.uregina.ca/student/accessibility (You can also come chat with the instructor as well if you like)

Course schedule *All topics/dates are tentative/subject to change minus the final exam*

[1] A. Hunt and D. Thomas. The Pragmatic Programmer. Addison-Wesley. 2000
[2] S. McConnell's. Code Complete, Second Edition. Microsoft Press. 2004
[3] R.C. Martin. Clean Code. Pearson Education. 2009

Date	Lecture activities	Lab dates	Lab activities	Textbook & other resources
Sept 06	Course introductions; Syllabus overview			
Sept 11	A pragmatic philosophy			[1] Chapter 1 [2] Chapter 33, 34
Sept 13	Project discussion; Board game: Teams that care			
Sept 18	Design thinking activity	Sept 19/21	Requirements elicitation, Milestone 1 chat	Stanford Design School, https://dschool.stanford.edu/
Sept 20	Software design & construction; Pragmatic projects and *before the project* wisdom;			[1] Chapter 3, 7, 8 [2] Chapter 1, 2, 3, 4, 5, 30, 34
Sept 25	Content Modelling; Milestone 2 hand-out; Cascade Server training with Glenn Enright			AListApart: Content Modelling, A Masterful Skill Cascade Server 1&2 PDFs
*****Sept 26**	HealthSummit Hackathon https://healthsummit.ca Optional – up to 5% bonus (Bonus will not allow the final grade to exceed 100%)			
Sept 27	Milestone 1 report-out (requirements and empathy)			
Oct 2	Picturing architecture (flow/data)	Oct 3/5	Introduction to Java & GitHub	[1] Chapter 3, 7 Holub on Pluralsight Holub's personal website (UML cheat sheet)
Oct 4	Creating quality variables			[2] Chapter 10, 11, 12, 13 [3] Chapter 1, 2
Oct 9	Milestone 3 hand-out; Midterm review			
Oct 11	Milestone 2 report-out (content analysis)			
Oct 16	Picturing design (lo-fidelity) & coding activities (Kanban)	Oct 17/19	GitHub help	[1] Chapter 2 NNGroup video Scrum Framework (web/PDF)

Oct 18	Midterm exam			
Oct 23	Midterm results/overview	Oct 24/26	Quality variables & statements	
Oct 25	Bob Martin on SOLID principles https://youtu.be/TMuno5RZNeE?t=742			
Oct 30	Milestone 3 report-out (content model)	Oct 31 /Nov 2	Quality routines & classes	
Nov 1	Pragmatic approaches to architectural design and coding; Creating quality statements routines & classes; Milestone 4 & 5 hand-outs			[1] Chapter 2, 6 [2] Chapter 6, 7, 14, 15, 16, 17, 18 [3] Chapter 3, 6, 10
Nov 6	Creating flexible code (bend, or break, concurrency)			[1] Chapter 5 [3] Chapter 6, 13
Nov 8	Fall break, no class			
Nov 13	Defensive programming & pragmatic paranoia	Nov 14/16	Quality defensive programming	[1] Chapter 3, 4 [2] Chapter 8
Nov 15	Milestone 4 report-out (Lo-Fi interface)			
Nov 20	Continuously improving code (while you're coding)			[1] Chapter 6, 8 [2] Chapter 20, 21
Nov 22	Continuously improving code some more!			[1] Chapter 3, 6, 8 [2] Chapter 22, 23, 24 [3] Chapter 12
Nov 27	System considerations	Nov 28/30	Usability evaluation	[2] Chapter 27, 28, 29 Some of the more "legacy" KM
Nov 29	Knowledge Management			[1] Chapter 3, 6, 7, 8 [2] Chapter 32 [3] Chapter 4
Dec 4	Milestone 5 report-out (demo & reflection)			
Dec 6	Final exam review			
Dec 20	Final exam			

*****Optional event***** Up to 5% may be *unlocked* from the instructor discretion depending on participation and activities (Not to exceed 100% of your final grade tally). Registered participants of the event will have to check-in with me on the day of the event. As I will be attending the event I will be monitoring participant engagement throughout the day and determine an appropriate bonus mark (it will be easy to get a 1% bonus by attending and marginally participating. Please note it will be hard to get a total 5% bonus, but not impossible if you shine and dazzle at the hackathon)