CSC302: Engineering Large Software Systems

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http://www.cs.toronto.edu/~sme/CSC302

About the Course

- → Course website
  - www.cs.toronto.edu/~sme/CSC302/
- → Textbooks
  - Fowler: UML Distilled (3rd Edition)
- → Lecture Notes
  - Available on the course website prior to each lecture
- → Coursework
  - Involves an ongoing open source project, using legacy code
  - Carried out in teams of 6 (±1)
  - Each team submits one report (per assignment)
  - Each team member also submits a peer-assessment form
    - Use these to tell us how much your team mates contributed to the project
    - If some members are contributing significantly more than others, we will adjust the grades

About the Course

- **Build on what you've learned in CSC301**
  - How do these skills scale up to larger projects?
  - What new techniques and processes are needed?
- **Important Topics**
  - advanced modeling (UML)
  - project management
  - reverse engineering
  - requirements analysis
  - verification and validation (especially testing)
  - software architecture and design

Assessment

- **4 team assignments:**
  1. Phase 0: Reverse Engineering / Familiarization (5%)
     - 3 weeks. Generate models from the legacy code
  2. Phase 1: Select and implement change requests (10%)
     - 3 weeks. Submit analysis of CRs, plus implemented and tested changes
  3. Phase 2a: Requirements analysis and test plan (15%)
     - 4 weeks. Analyse requests for new features, and write test cases
  4. Phase 2b: Implement new features and review process (15%)
     - 3 weeks. Submit implemented and tested features, plus lessons learned report
- **2 tests:**
  - Midterm test (20%)
  - Final Exam (35%)
    - Must obtain at least 30% on this exam to pass the course.

Course Policies

→ Assignment Deadlines

- Are very strict (use a U of T medical certificate if you are seriously ill)
- Assignments are due in the first 10 minutes of a lecture (i.e. 1:20pm)
- Daily penalties apply to late work

→ Re-grading

- Will only be done by the professor (TAs will not re-grade your work)
- The whole report will be re-graded (not just individual sections)
- Your mark may go up or down

→ Communication

- Ask questions in Lectures and Tutorials
- Announcements will appear on the course website. Please check it regularly.
- TAs and instructor will not answer any queries related to the assignments in the 24 hour period prior to the deadline
- I will rarely respond to email
  - Spam filter may kill email from non-UofT adddresses
  - I will (try to) answer emailed questions in the next available lecture/tutorial.

Discussion

1. Review of CSC301
2. Your goals for this course
3. Options:
   - → Bonus for changes accepted back into project base?
   - → Trade projects at end of phase 1: bonus for popular projects?
   - → Shorter iterations?
   - → TA's as "on-site users"?
   - → TA's as management consultants?
   - → Extra material on project management & Risk assessment?
   - → NASA Case studies?
   - → …

Summary

- This course addresses the challenge of big projects
  - Working with legacy code
  - Analyzing problem situations
  - Deciding which features can be feasibly implemented
  - Delivering quality software systems
- This course is different to most CS courses
  - You will be contributing to a much larger project
  - You will decide for yourself what is feasible to do
  - You will manage your own project risks
  - You will figure out how to work in a (large?) team
  - You will learn think as an engineer
- Your mileage will vary
  - There are no right and wrong answers
  - We give credit for good judgment about which things to implement
    - …and may penalize you for trying to do too much