



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

↳ Carried out in teams of 6 (± 1)

↳ Each team submits one report (per assignment)

↳ All team members receive the same grade (exceptions can be negotiated)

↳ Involves an ongoing open source project, using legacy code





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
- ↳ software architecture
- ↳ (performance modeling and analysis)



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 tutorial (i.e. 11:20am)
- ↪ 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 addresses
 - > 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

- ↳ The course evaluations will be extreme:
 - “At last - a course that actually taught me something useful”
 - “This course should be scrapped - it’s an embarrassment to CS”

