

Software Engineering

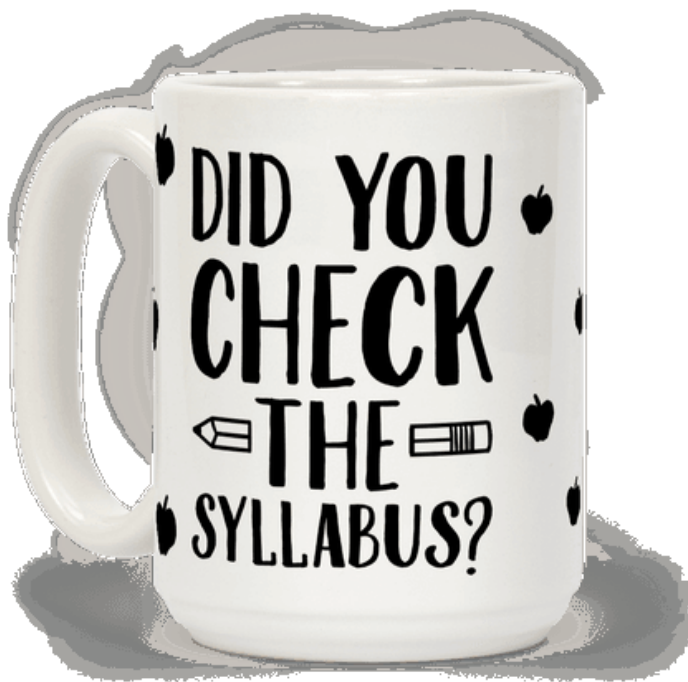
CSC, NC State, Spring 2018

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Syllabus



CSC 510 - 001 (2167)

NcState, ComSci

Spring 2018

EB3, 2201

Tues,Thurs 6:00PM - 7:15PM

Overview

Topics

An introduction to software life cycle models; size estimation; cost and schedule estimation; project management; risk management; formal technical reviews; analysis, design, coding and testing methods; configuration management and change control; and software reliability estimation. Emphasis on large development projects. A group project required following good software

engineering practices throughout the semester.

Objectives

Students are expected to gain practical exposure to tools, processes, and principles of software engineering through hands-on projects while being able to explain empirical and theoretical evidence, technical mechanisms, and models supporting software engineering.

Prerequisites

- CSC 316 and CSC 226

Textbook

- Optional Software Engineering: A Practitioner's Approach, 7th International edition by Roger Pressman

Group Slack group

It is each student's responsibility to join the Slack group:

- <https://seng18.slack.com>
- Students are strongly encouraged to contribute their questions and answers to that shared resource.
- Note that, for communication of a more private nature, contact the lecturer on the email shown below.

All class communication from staff to students will be via this Slack group.

Assessment

Student will sit exams to determine their understanding of lecture material.

Students will work in groups of four using Github to test their ability to work in groups to deliver software.

Grades will be assigned as follows:

- Spot quizzes, misc (quick) home works, 5 marks.
- Team check ins : 5 marks, teams must meet with a tutor at least 5 times in the semester (1 before end-Jan, 2 before end-Feb, 2 before end-March) to assess your progress.
- Mid-term: Tuesday, February 27, 15 marks
- Final exam: 6pm Thurs May 3, 15 marks
- Participation in evaluations: 10 marks (one per evaluation)
 - Students will be issued 10 "chits" with 10 magic numbers
 - When they perform any evaluation, they hand over the "chit"
 - When students hand in their Mar1, May1 reports, they list the chit numbers of the students

present for their evals.

- Chits must be "spent" in other projects (you cannot hand in chits from your own people for your own project).
- Project: 50 marks (deliverables each month).

With the final grades, the following grade scale will be used:

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A+ (97-100), A (93-96), A- (90-92)
B+ (87-89), B (83-86), B- (80-82)
C+ (77-79), C (73-76), C- (70-72)
D+ (67-69), D (63-66), D- (60-62)
F (below 60).
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Project

Project1: Build your own (Jan, Feb)

Do something cool, Evaluate it (using your peers) |

what	when	marks	notes
1a	Feb1	5	5 page planning doc. Describes what and why. Also, an evaluation plan
1b	Mar1	10	10 page report doc. . What your did. Why did you do it that way? How to install and run the code. Eval results
1c	March12,14	5	5 minute presentation, 15 slides, 20 secs per slide. Descibe what, why and the eval
1d	March12,14	5	Peer assessment: how "cool" is your project?

Project2: Maintain someone else's (Mar, Apr)

Grab some other group's system, improve it, evaluate it.

Note: No more than 2 Proj2 teams can work on the same Proj1 task

what	when	marks	notes
2a	Mar30	5	5 page progress report doc. What you are doing. What was done before. What you are trying to do better.
2b	Apr16, Apr23	5	10 minute presentations on what was achieved
2d	Apr16, Apr23	5	Peer assessment: how "cool" is your project?
2c	May1	10	10 page report doc. What you did. Why. Evaluation of new, and compared to old. Recommendations

Notes:

- Its ok to "fail" and say the old way was better. The thing here is can you maintain someone else's code and can you evaluate it.
- Reports must be in pdf generated from Word or Latex using [these templates](#); e.g. [this doc](#). Reports that are too short or expand font size or margins sizes will lose points propotional to

that expansion.

- You will be collecting eval data from your peers. This means you are now the gaurdians of that private data. Remember the 3Rs of data collection:
 - The right to be anonymous: no one should be able to identify individuals in your data. Don't store free text names in Github!
 - The right to refuse: Any member of this clss, when called to an eval session, has the right to decline to participate without having to explain why (in which case, they still get their chit).
 - The right to be forgotten. Any one you collect data from has the right to require their data deleted from your study. So keep anonymous ids for everyone, keep a mapping table real name to anonymous (outside of Github).
 - Regading the "cool" mark described above: the grades from peers will be reviewed by the lecturer to determine the final "cool" mark.
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Staff

Lecturer



Tim Menzies

- Github id: timm
- Slack name: timm
- Office Hours: Tuesday, 2:00-4:00 and by request
- Location of Office Hours: EE II room 3298
- E-Mail: tim.menzies@gmail.com
 - Only use this email for private matters. All other class communication should be via the class news group, listed below.
- Phone: 304-376-2859
 - **Do not use** this number, except in the most dire of circumstances (best way to contact me is via email).

Tutors



Ken Tu

- Github id: huytu7
- Slack name: hqtu
- E-mail: hqtu@ncsu.edu
- Office hours: Tues 11am-1pm
- Office location: 3240



Amritanshu Agrawal

- Github id: amritbhanu
- Slack name: aagrawa8
- E-mail: aagrawa8@ncsu.edu
- Office hours: Thurs 11am-1pm
- Office location: 3240

Other Information

Attendance

Attendance is extremely important for your learning experience in this class. Once you reach three unexcused absences, each additional absence will reduce your attendance grade by 10%.

As to what is an "excused" class, see the list at <https://policies.ncsu.edu/regulation/reg-02-20-03>:

- Anticipated absences:
 - Representing an official university function (e.g. athletics)
 - Required court attendance as certified by the Clerk of Court.
 - Students will be allowed a minimum of two excused absences per academic year for religious observances
 - Required military duty as certified by the student's commanding officer.
- Unanticipated absences. Examples include:
 - Short-term illness or injury
 - Death or serious illnesses in the family when documented appropriately.

Expected Workload

Students must be prepared to dedicate AT LEAST 5-8 working hours a week to this class (excluding the time spent in the classroom). Laboratory instruction is not included in this subject.

Sometimes, the lecturer/tutor will require you to attend a review session during their consultation time. There, students may be asked to review code, concepts, or comment on the structure of the course. Those sessions are mandatory and failure to attend will result in marks being deducted.

Academic Integrity

Cheating will be punished to the full extent permitted. Cheating includes plagiarism of other people's work. All students will be working on public code repositories and **informed reuse** is encouraged where someone else's product is:

- Imported and clearly acknowledged (as to where it came from);
- The imported project is understood, and
- The imported project is significantly extended.

Students are encouraged to read each others code and report **uninformed reuse** to the lecturer. The issue will be explored and, if uncovered, cheating will be reported to the university and marks will be deducted if the person who is doing the reuse:

- Does not acknowledge the source of the product;
- Does not exhibit comprehension of the product when asked about it;
- Does not significantly extend the product.

All students are expected to maintain traditional standards of academic integrity by giving proper credit for all work. All suspected cases of academic dishonesty will be aggressively pursued. You should be aware of the University policy on academic integrity found in the Code of Student Conduct.

The exams will be done individually. Academic integrity is important. Do not work together on the exams: cheating on either will be punished to the full extent permitted.

Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation(REG 02.20.01).

Students are responsible for reviewing the PRRs which pertain to their course rights and responsibilities. These include: <http://policies.ncsu.edu/policy/pol-04-25-05> (Equal Opportunity and Non-Discrimination Policy Statement), <https://oied.ncsu.edu/home/> (Office for Institutional Equity and Diversity), <http://policies.ncsu.edu/policy/pol-11-35-01> (Code of Student Conduct), and <http://policies.ncsu.edu/regulation/reg-02-50-03> (Grades and Grade Point Average).

Non-Discrimination Policy



NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated.

- Note that, as a lecturer, I am legally required to **report** all such acts to the campus policy¹.

¹Note that any remark you make in some on-line comment tracking system like Github is a public document. So take heed of the following cautionary tale. One year, a student was joking around

with his buddy in a Github issue report. Then he was rude enough and stupid enough to add a remark about how the rest of the team was just so □□□□ □□□□□□□□. Needless to say, the rest of the team took great offense at this remark and invoked the University's non-discrimination policies. As a result, everyone lost much time that semester, as well as grades.

Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05> or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Liability Insurance.

Non-scheduled class time for field trips or out-of-class activities are NOT required for this class. No such trips are currently planned.

However, if they do happen then students are required to purchase liability insurance. For more information, see <http://www2.acs.ncsu.edu/insurance/>.