

Syllabus

Black Box Software Testing (CSE 3411)

Instructor

Cem Kaner

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Office hours: Mondays 3 to 4 pm, Wednesday, 2 to 3 pm and by appointment

Info about me: www.kaner.com

FINAL EXAM: DECEMBER 15, 3:30 TO 5:30 P.M.

Catalog Course Description

Explores functional (black box) methods for testing software systems, reporting problems effectively and planning testing projects. Students apply what they have learned, throughout the course, to a sample application that is commercially available or under development. The choice of sample application changes from term to term.

Learning Objectives for this Course

Testing is a type of technical investigation. If you think of it as a routine task, you'll do crummy testing. So, the essence of what I hope you'll learn in the course is how to investigate, how to plan your investigation, how to report the results, and how to tell whether you're doing a good job. Excellence in the course will require you to extend your critical thinking, writing, and teamworking skills. Finally, the work that you do in this course might help you land a job. Many of the course tasks were designed to be realistic or impressive (to an employer) and to give you a chance to do professional-quality work that you can show off during a job interview.

Texts

Kaner, Bach, Pettichord: Lessons Learned in Software Testing.

Whittaker: How to Break Software.

Sample Application

We will test the Calc module of OpenOffice 1.1.2, which you can download at <http://download.openoffice.org/1.1.2/index.html>

Please register at <http://www.openoffice.org/servlets/Join>

Then join the OpenOffice QA Team (see <http://qa.openoffice.org/>) so that you can file bug reports in Issue Tracker, <http://qa.openoffice.org/servlets/ProjectIssues>. The bug reports you file will be public. You'll be able to show them off to job interviewers. We'll do a lot of work in the course that is intended to help you write these reports well.

Please register with the OpenOffice development community using your FIT email address. Some project managers will provide some special handling of bugs for students in our course (faster response, more careful answers). It's hard for them to tell who we are and how much we are contributing as a group if they don't have an easy way to search on our email addresses.

I need a student volunteer to help other students with system administration issues associated with OpenOffice. If someone has a question about how to download or set up OpenOffice or is having trouble getting it to run on a university lab machine, the volunteer is the one everyone will go to. This will count as a bonus task, worth 5 or 10 points depending on how much work I decide that it was and how much you learned from the task. If you're the administrator, then for me to understand how big the job is, I'll need status reports from you every two weeks.

Grading

- In-class quizzes and homework: 10 points
- Assignments: 30 points
- Mid-term exam: 30 points
- Final exam: 30 points
- Optional Bonus assignments: 10 points
- (Total 110 points possible)

Think of the class grading being in two parts: exams and assignments. You must earn at least a D on the exams in order to pass the course. A 'D' on the exams and an 'A' on the assignments might (depending on the actual numbers) average to a 'B', but an 'F' on the exams and an 'A' on the assignments will earn you an 'F' in the course.

Optional (Bonus) assignments are for people who are doing reasonably well in the course to earn a higher grade. They are not for people who are not doing well to earn a marginally passing grade. Therefore, bonus points cannot be used to raise an 'F' to a higher grade. Don't spend effort on bonus assignments until you're sure you've earned at least a 'D' in the course.

I do not grade on a curve. There are 110 points possible in the course, including the optional bonus assignments. If everyone gets 90 points or more, everyone gets an 'A'. Similarly, 80 for 'B', 70 for 'C', 60 for 'D'.

I like giving high grades. Please help me do this by preparing well for your exams and doing quality work on your assignments.

Website

We'll use Florida Tech's Blackboard website (<http://fit.blackboard.com>) . Create an account if you don't have one already and sign up for the class (Software Testing—CSE 3411).

We will also use the Center for Software Testing Education Website, <http://www.testingeducation.org/k04/index.html>.

I have restricted the access to the class. The password is "blackbox". If your account name is not recognizably similar to your name as listed in the class rolls, please email me at the same time as you enroll to let me know what your real name and your account name is.

Policies

- Homework (small assignments) and in-class quizzes are graded on a one point scale: Either you do well enough to get credit on it, or you don't.
- I will not accept late homework.
- Assignments (large) are graded on a 10-point scale.
- Late assignments lose 1 point (10% of the possible) for each day late.
- Please prepare all written work on a text editor or word processor. I will accept text files, RTF files, OpenOffice Word files, or Microsoft Word format files. If this is difficult for you, email or talk to me.
- Submit homework and assignments through the Assignment Complete/Submit page or the Digital Drop Box on Blackboard. For the purpose of assigning late penalty points, I will use the timestamp assigned by Blackboard.
- KEEP A COPY of everything you submit. I occasionally lose things, as do various computers. Don't assume that I've received it until you see the grade for it show up on Blackboard. If you don't see a grade when you expect it, ask me if I received your assignment.
- VERY IMPORTANT: When you submit something to the drop box, make sure that the FILE NAME contains: YOUR NAME, and the ASSIGNMENT identifier. As long as it is unique in the class and I can easily recognize it, you can use any combination or truncation of your first and last names or initials. I get a lot of assignments. When I save them to my hard drive, I put them in one directory. When I do that, I no longer know which drop box entry it came from. Also make sure that your name is IN the contents of the file.
- I will not accept bonus assignments after 8:00 am, Monday, November 29, 2004. Use your time after that to study for the exam. It's more important.

Collaboration

I encourage you to work in teams on assignments. Collaboration is a skill that you will find very valuable in your career; it's never too early to start preparing.

For assignments, I expect N times better work from your team than I would from an individual, where N is the number of team members. Depending on the type of assignment, 'better' might mean 'more extensive' or 'higher quality.'

Even with this grading adjustment, most people will find it easier to get better grades working in small teams. Two or three is probably ideal; four or more are probably too many people to get full credit from most assignments after the adjustment.

Teams must consist only of people taking the course for credit. You may not collaborate with others outside of the class. When collaborating on an assignment, make sure you list the names of every person who worked on it.

Exams

Several weeks before each exam, I will pass out study questions. As people work through the questions and find defects in them, I will email corrections and post them on Blackboard. The exam questions will be taken verbatim from these (possibly corrected) study questions.

(Actually, I may make minor corrections in the questions without changing the intent of the question. Such changes, if any, will be marked on the exam in **bold**.)

I strongly encourage you to follow this process when studying for the exam:

- 1) Working by yourself, prepare your own answers to each question.
- 2) Meet with small groups and discuss your answers. If any of you disagree, figure out why. Did the question ask something different than what you answered? Was the question ambiguous? Did someone misunderstand the class or the notes?
- 3) If you believe that something is wrong with the question, tell me about it. Defects might include ambiguity or impossibility. Think of this as your way to test the questions before they come up on the exam.

Because you have the questions ahead of time, I will expect much better answers and I will grade accordingly. Think through each of your answers. Make sure you can answer each question clearly, concisely, and completely.

Exams are cumulative. I sometimes ask the same question on the final exam that I asked on the mid-term.

You may not collaborate with anyone else during an exam.

This exam process is different than most of you have done before. I've posted two papers on the essay answers and on the assessment process in this course.

Optional Assignments (Extra Credit)

You can get a perfect grade in the course without doing any bonus assignments. These are optional.

Because these are bonus points, I evaluate them differently than I do for regular work. I evaluate them quickly. I look for professional quality work. I give only full credit or no credit. If it is quickly obvious to me that the work is of sufficiently good quality to submit to the OpenOffice development team, you earn full credit.

On the other hand, if I don't understand what you've submitted, or I can't quickly reproduce the problem, the work is not of professional quality and you earn no credit. I will not accept appeals. I will not award partial points.

If you submit optional assignments that I think are not acceptable, I will quit grading any other optional assignments from you.

I will not accept bonus assignments after 8:00 am, Monday, November 29, 2004. Use your time after that to study for the exam. It's more important.

Bug Reporting: An Optional Assignment (Extra Credit)

The Open Office staff are volunteers, like you.

These people are not to be abused. Bug reports should be written in a respectful tone. If your reports are disrespectful, sarcastic, or in any other way inappropriate in tone, I will refuse to award any bonus points for any of your bug reports.

Some of these volunteers may reject your reports unreasonably. They might reject perfectly good (bad) bugs. Or they might respond sarcastically or disrespectfully. This happens in industry too. You'll have to learn to deal with it. (But don't respond in kind.)

Submitting bug reports is voluntary, but it is an important training opportunity.

I will award bonus points (up to 5% of your grade can be for bug reports or bug replications) for bug reports. Here are my standards for awarding bonus points for bugs.

1. Many of the bug reports in the *Issue Tracker* database don't meet my standards. Many people who work on open source projects never had training in testing. But you do have that training, and the point of this exercise is to give you experience writing bug reports at a professional level. Therefore I will hold you to a professional standard, not to the standard of a part-time volunteer. I suspect that several bugs that are sent to me will not be awarded bonus points.
2. Reports of already-reported bugs will not qualify for a bonus.
3. I will award UP TO 1 bonus points per bug report (to a maximum of 5). If you developed an acceptable bug report as a group of N people, you will get 1/N points each for that bug.
4. I will not base the decision on personal demonstrations of bugs. If the bug report, as written seems unclear, confusing, or insignificant, it does not qualify. The bonus is for the report, not for the bug.
5. I will not review every bug in the database. I will only look at bugs that you ask me to look at. If I have to wade through mediocre or poor bugs from you, I will give up, even if that means skipping potentially worthy ones. Therefore, please exercise care in pointing me to your submissions. Only send me to your good ones.

Bug reports that are done as part of an assignment are not eligible for bonus credit.

Academic Integrity / Plagiarism

I strongly encourage collaboration. I have seen many instances of people collaborating and doing better work than either of them could have done individually.

I will not tolerate academic dishonesty.

Academic dishonesty may take several forms, including plagiarizing, collaborating with others without acknowledging their work, submitting work that you did previously or that you are doing for another class (unless I give you permission to do this), falsifying results or data, interfering with another student's work, and copyright violation. When in doubt, ask me for clarification.

Make sure you read the CS department's Policy. You will be held responsible for its contents even if you do not read it.

If two individuals or teams turn in substantially similar assignments without acknowledging each other's work, I will mark both of them as zero, and discuss the matter with Dr. Shoaff for possible further department action.