COMP 7012: Foundations of Software Engineering

Spring 2012

Monday, Wednesday 12:40–2:05 p.m.
Dunn Hall 233

http://www.cs.memphis.edu/~sdf/comp7012/

Instructor

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Office Hours: Monday, Wednesday 4:00–5:30 p.m., or by appointment
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Course Description

> ***COMP 7012 - Fndtns/Software Engr (3)***
> *(Same as EECE 7012-8012). Covers project management; Unified Process; software disciplines (requirements, analysis, design, implementation, testing); Unified Modeling Language; mapping designs to code. Students work in teams to develop a significant software system. PREREQUISITE: COMP 3160 or permission of the instructor.*

Why This Course?

This course provides students with a foundation in software engineering by covering popular process models and the steps associated with these models. Students work in teams to develop a medium-sized software system using recommended practices. Upon completion of this course, students will be prepared to develop software systems in an industrial setting or to continue graduate study in software engineering.

Textbooks

Required:

> *Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development* (3rd ed.)
> by Larman, Prentice Hall, 2004.

Optional:

Software Engineering: Theory and Practice (4th ed.)
by Pfleeger and Atlee, Prentice Hall, 2009.

Evaluation

Grading weights:

- 50% software project (HWs)
- 40% exams (17% for midterm, 23% for final),
- 10% participation

To convert from percentages to letter grades, see the chart at right. I reserve the right to *lower* the percentage threshold for letter grades as I see fit (i.e., I may make the grading scale better for you, but never worse).

A+	≥ 97%
A	91–96%
A−	89–90%
B+	87–88%
B	81–86%
B−	79–80%
C+	77–78%
C	71–76%
C−	69–70%
D+	67–68%
D	62–66%
D−	60–61%
F	≤ 59%

Grading scale.

Project

Students will work on the project in teams with 4–7 members. I reserve the right to assign the teams and reshuffle them at will.

You will receive one project grade at the end of the semester. There are 100 possible project points:

- 50 points for individual productivity
- 50 points for (whole project) artifact quality

The project work will be spread across 6 homework assignments (HW0–HW5), each taking 2 weeks to complete. In each HW, each team member will *negotiate* with me his/her expected *HW deliverables*.

HW deliverables. HW deliverables will generally be working implementations of functionality or test code. HW deliverables for a particular HW will generally require 12 hours of work (spread across 2 weeks) by an average student to complete.

Negotiation. Negation happens in class on the day that the HW is assigned. Depending on the particulars of the HW, you may or may not have a say in your HW deliverables. If you miss class on a negotiation day, I will assign your HW deliverables.

Renegotiation day. For some HWs, it may be difficult to estimate how much effort the HW deliverables will require, so there will be an opportunity to renegotiate halfway through the HW. Note: you should do significant work on your HW deliverables in the first week of a HW, so you don't miss your chance to renegotiate if the HW deliverables take more effort than expected.

Productivity Grading

Your individual productivity points will be assessed as follows:

- 40 points for regular productivity (6.66 points per HW)
- 10 points for above-and-beyond productivity

Regular productivity. It is expected that each team member will complete his/her regular work assignments in a timely manner. For each HW, you either will receive 6.66 regular-productivity points or you will receive 0. To receive the points you must complete your deliverables by the HW deadline. Furthermore, your work must be of reasonable quality—that is, it must be clear that you put a good effort into the work. If any part of your deliverables is incomplete or of poor quality, you will receive 0 regular-productivity points for the HW.

Above-and-beyond productivity. To achieve the highest grades in the course (A/A+), you will need to go above and beyond the call of duty. For each HW, you can also negotiate above-and-beyond work to do, typically for 1 point per work item. You may negotiate above-and-beyond work with me at any time. You can earn as many above-and-beyond points as you can negotiate with me, but note that you will need at least 10 above-and-beyond points to get full credit on the project (that's 1.66 per project; you can earn more than 10). The work you do for above-and-beyond points must be of good quality to earn the points (a slightly higher quality standard than regular work). I may require you to fix above-and-beyond work that does not meet this standard.

Unproductive team member deduction. If you fail to earn the regular productivity points for 3 or more HWs, you will receive an additional artifact-quality deduction: 10 points per HW after the second in which you did not receive the regular productivity points. This deduction is meant to account for the lack of contribution made by an unproductive team member to the project artifacts.

Reassigning unfinished regular work. If a team member fails to finish his/her regular work for a HW, that unfinished work will go back in the pool of work to be done in the next HW. Unfinished regular work may make a good candidate for above-and-beyond work in the next HW; however, you will have to negotiate such an arrangement with me. Additionally, a team member can abandon their regular work during a HW (by contacting me; of course they will lose their regular productivity points), making the work available as possible above-and-beyond work for other team members.

Lateness. You are expected to complete work on schedule, as deadlines are a part of the real world. Work will not be accepted late unless prior arrangements are made with me.

Teamwork. Team members may work together however they see fit; however, each team member is responsible for his/her own deliverables, and he/she is the only one who can receive productivity credit for those deliverables. So collaborate, but be careful about spending too much of your time on someone else's deliverables if you're not getting any help on your deliverables in return. Note that even though you're working in teams, plagiarism is still strictly forbidden (see below).

Artifact Quality Grading

Your team's artifact-quality points will be assessed at the end of the semester. Throughout the semester, after each HW is submitted, I will provide quality feedback on the artifacts created/modified for that HW. You should use that feedback to improve the quality of your artifacts. Such incremental improvements will help considerably in the final quality assessment. Quality assessment can be subtle and subjective; so if you have any questions, don't hesitate to ask me.

Exams

The exams will be administered in class and will be closed everything (i.e., closed book, closed note, closed neighbor, etc.).

In general, makeup exams will NOT be administered. If you have an extenuating circumstance, you should notify me as soon as possible. Makeups for exams will only be given under extreme circumstances and if I approve the absence before the exam is given. All excused absences must be documented (e.g., with a doctor's note).

Participation

Students are expected to attend class and participate in classroom discussions. You will begin the semester with 13 attendance points. If I notice that you are missing from class at any time, I will deduct 1 point for that day. At the end of the semester if you have 10+ points, then you will receive full credit for attendance (i.e., you can miss 3 days without penalty); otherwise, you will receive a percentage of your points out of 10 for participation.

Be forewarned: I like to do lots of in-class activities, so the odds of me noticing your absence on a given day are pretty good.

Plagiarism/Cheating

Plagiarism or cheating behavior in any form is unethical and detrimental to proper education and ***will not be tolerated***. All work submitted by a student (projects, programming assignments, lab assignments, quizzes, tests, etc.) is expected to be a student's own work. The plagiarism is incurred when any part of anybody else's work is passed as your own (no proper credit is listed to the sources in your own work) so the reader is led to believe it is therefore your own effort. Students are allowed and encouraged to discuss with each other and look up resources in the literature (including the internet) on their assignments, but ***appropriate references must be included for the materials consulted***, and appropriate citations made when the material is taken verbatim.

If plagiarism or cheating occurs, the student will receive a failing grade on the assignment and (at the instructor's discretion) a failing grade in the course. The course instructor may also decide to forward the incident to the University Judicial Affairs Office for further disciplinary action. For further information on U of M code of student conduct and academic discipline procedures, please refer to: http://www.people.memphis.edu/~jaffairs/.