COMP 4882: Capstone Software Project
Spring 2017

Mon, Wed 4:00–5:25 p.m.
FedEx Institute of Technology 227

http://www.cs.memphis.edu/~sdf/comp4882/

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Office Hours: Mon, Wed 2:05–3:00 p.m., 5:30–6:00 p.m., or by appointment
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1   Catalog Description

COMP 4882 - Capstone Software Proj (3)
Development of significant team project; continuation of COMP 4081; software project management; risk assessment. software requirements and specifications; software design; software validation; professional and ethical responsibilities. PREREQUISITE: COMP 3115, 4030, and 4081, or permission of instructor.

2   Why This Course?

This course provides students with additional practical experience in software engineering, building on the concepts learned in COMP 4081. Students work in teams to iteratively and incrementally develop a substantial software system. Lecture materials cover topics relevant to computing and software professionals—topics such as teamwork, professionalism, and communication.

3   Student Outcomes

- An ability to function effectively on teams to accomplish a common goal.
  - An ability to collaborate and cooperate with peers in class projects.
  - An ability to plan work and to distribute tasks among team members to maximize team productivity.
- An ability to communicate effectively with a range of audiences.
  - An ability to convey ideas orally through presentations to peers, clients, and faculty.
  - An ability to distill high-level concepts into technical requirements.
- An ability to apply design and development principles in the construction of software systems of varying complexity.
  - An ability to produce high-quality software-development artifacts for each phase of the development cycle.

4   Textbooks

No textbooks are required for this course.

5   Evaluation

Grading weights are as follows:

- 85% Team Project
  - o Initial Plan, Design, and Setup (Iteration 0)
    - ▪ 5% Team Milestone 0
    - ▪ 9% Individual Productivity
  - o Development Iteration 1
    - ▪ 5% Team Milestone 1
    - ▪ 9% Individual Productivity
  - o Development Iteration 2
    - ▪ 5% Team Milestone 2
    - ▪ 9% Individual Productivity
  - o Development Iteration 3
    - ▪ 5% Team Milestone 3
    - ▪ 9% Individual Productivity
  - o 24% Final Evaluation of Project (Team)
  - o 5% Above and Beyond Productivity (Individual)
- 5% Homework and Quizzes
- 10% Participation

Table 1. Grading scale.

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	60–66%
F	≤ 59%

To convert from percentages to letter grades, see Table . 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).

5.1   Team Project

The centerpiece of this course is a team software project. Teams of around 5 students will work together to develop a software system for a customer.

Each team will work on a different project with a different customer. *I reserve the right to assign the teams for projects, and to reshuffle them at will.*

Team projects in an educational setting must balance two concerns: (1) the need for students to work together as cohesive teams, and (2) the need for individual accountability. Thus, half of your project grade will be based on your individual productivity and half will be based on what your team is able to accomplish as a whole.

5.1.1   Individual Productivity

5.1.1.1   Regular Productivity
The majority of your individual productivity points are associated with *regular productivity*. It is expected that each team member will complete his/her assigned tasks in a timely manner. It is also expected that team members will be continuously productive. It is not acceptable to put off your work until the end of an iteration, and then rush to slap something together. Thus, teams will provide the instructor regular progress reports and teammate evaluations. Students who

demonstrate continuous productivity throughout each iteration will receive full credit. Students who do not will lose productivity points.

5.1.1.2 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; thus, your individual productivity grade also accounts for *above and beyond productivity* (aka *A&B*). Throughout the course, you will have the opportunity to negotiate A&B tasks to do in addition to your regular task assignments. Each A&B task typically earns 1 point. You may negotiate A&B tasks with me at most any time. You can earn as many A&B points as you can negotiate with me, but note that you will need at least 5 A&B points to get full credit. Also, you may not earn more than 2 A&B points in a week. The work you do for A&B points must be of good quality (a slightly higher quality standard than regular work). I may require you to fix A&B work that does not meet this standard.

5.1.1.3 Additional Productivity Policies

- **Milestone Deduction for Unproductiveness:** A student who demonstrates unsatisfactory productivity during an iteration may also lose points on the milestone. This deduction is meant to account for the lack of contribution made by an unproductive team member to the project.
- **Late Work:** You are expected to complete work on schedule, as deadlines are a part of the real world. Work will not be accepted late unless there are extenuating circumstances and prior arrangements are made with me.
- **Limit on weekly A&B earnings.** You may earn a maximum of 2 A&B points per week. This policy is mainly to prevent students from putting off doing A&B work until the very end of the semester, and then flooding the instructor with low-quality work in an 11th-hour attempt to earn more points.

5.1.2 Milestones and Final Evaluation of Project

Teams will receive one grade for each milestone as well as a final evaluation of their project. These marks will be evaluated based on criteria, which include the following:

- Quality of artifacts and presentation
- Satisfaction of the customer with the work performed
- How well the team followed procedures

5.2 Homework

There will be occasional homework assignments that you must complete. These will have hard deadlines, and late submissions will not be accepted.

5.3 Quizzes

Quizzes will be administered in class and will be closed everything (i.e., closed book, closed note, closed neighbor, etc.). In general, makeup quizzes will NOT be administered. If you have an extenuating circumstance, you should notify me as soon as possible. Makeups will only be given under extreme circumstances and if I approve the absence before the quiz is given. All excused absences must be documented (e.g., with a doctor's note).

5.4 Participation

Students are expected to

- arrive on time to class,

- stay until the end of class, and
- participate in the middle.

You will begin the semester with 13 participation 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 or more points, then you will receive full credit for participation (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 take attendance at the beginning of class.
- I like to do lots of in-class activities, so the odds of me noticing your absence on a given day are pretty good.

6 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 Office of Student Conduct for further disciplinary action. For further information on U of M code of student conduct and academic discipline procedures, please refer to: http://www.memphis.edu/studentconduct/misconduct.htm.

6.1 Course-Specific Instructions
- Teammates (i.e., members of the same team) may collaborate and share work however they see fit; however, if asked to report what each team member's contributions were, students must provide honest responses.
- Students from different teams may not collaborate in this way.
- Teammate collaboration is limited to project work, and is not allowed on any other course work (e.g., homeworks, quizzes, exams), unless specifically noted.

6.2 TurnItIn (Academic Integrity)
Your written work may be submitted to Turnitin.com, or a similar electronic detection method, for an evaluation of the originality of your ideas and proper use and attribution of sources. As part of this process, you may be required to submit electronic as well as hard copies of your written work, or be given other instructions to follow. By taking this course, you agree that all assignments may undergo this review process and that the assignment may be included as a source document in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents. Any assignment not submitted according to the procedures given by the instructor may be penalized or may not be accepted at all.