

Program Comprehension

COMP 7085/8085 • Fall 2017

Monday, Wednesday 12:40–2:05 p.m.
FedEx Institute of Technology 226

<https://memphis-cs.github.io/comp-7085-8085/>

Instructor: Dr. Scott D. Fleming <Scott.Fleming@memphis.edu>
Office Hours: Mon, Wed 4:05–4:50 p.m.; Tue, Thu 2:05–2:50 p.m.; or by appointment
Office Location: Dunn Hall 303

1 Course Description

COMP 7085/8085 – Program Comprehension (3)

Cognitive and mental models of how people learn to program and how people understand existing large software systems; software environments to assist software developers build, maintain, and evolve software systems; how visualization of software systems aids in program comprehension.

PREREQUISITES: COMP 7012 or permission of instructor.

2 Why This Course?

Program comprehension is an activity that pervades software development and maintenance. With the rise of large software—systems made up of millions of lines of code—developers increasingly struggle to gain the understanding necessary to efficiently perform their development tasks. Furthermore, most software engineering activities, such as reuse, refactoring, and testing, involve the need to understand how code works, how modules interact, what code implements what requirements, etc. This course provides students the opportunity to learn about the fundamental problems of program comprehension (e.g., the concept-assignment problem), and to explore both the state of the art and the state of practice in program comprehension.

3 Textbooks

None. We'll be reading a lot of papers, though.

4 Seminar Format

Most classes will follow a seminar format in which two students present a paper (selected by me) and lead a discussion of the paper. Students play one of three roles in a seminar: *presenter*, *rebutter*, or *member of the peanut gallery*.

4.1 Presenter

The presenter must prepare a 20-minute presentation in which he/she provides a summary of the assigned paper. Detailed presenter instructions will be provided in a separate document.

4.2 Rebutter

Following the presentation, the rebutter must present a 5-minute rebuttal to the paper. The rebuttal should critique any weaknesses of the paper. Of course, this means that the rebutter must have thoroughly read the paper. The rebutter should be prepared to give detailed examples that illustrate his/her point(s). The rebutter may not use slides.

4.3 Peanut Gallery

The Peanut Gallery must have read the paper (at least enough to understand the main points), and come prepared to ask questions and participate in the discussion.

5 Evaluation

Grading weights:

- 30% presentations
- 30% participation
- 40% essay

To convert from overall 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.

5.1 Presentations

Each presentation will be graded out of 100 points. The points students earn will be based on the quality of their presentations: how well it followed the above requirements, how well put together and thoughtful it was, etc.

5.2 Participation

Students are expected to attend class and participate in classroom discussions. You must earn 1 participation point per class to receive full credit. To earn the point, you must

- show up on time (strict!),
- stay until the end of class,
- participate in discussions, and
- fulfill any extra duties you're assigned (e.g., presenter, rebutter duties).

5.3 Essay

Each student must write a 3000-word essay for the course. Details of what specifically you should write about will be decided about halfway through the course. In addition to the quality of the ideas presented, the essays will be graded on grammar, spelling, understandability, and overall appearance (e.g., formatting).

5.4 Grade Distinction between 7000- and 8000-Level Sections

Students enrolled in the 8000-level section of the course will have different grading requirements compared to students enrolled in the 7000-level section. In particular, the differences will be as follows:

- 8000-level students will do more presentations than 7000-level students. The exact numbers vary depending on the number of students enrolled in each section and the available time; however, in the past, 7000-level students have tended to do roughly two presentations and 8000-level students have tended to do roughly three.

- 8000-level students will be expected to write longer, more in-depth essays than 7000-level students. Specifically, 7000-level students' essays must be at least 3000 words and cite a minimum of 8 papers, whereas 8000-level students' must be at least 4500 words and cite a minimum of 12 papers.

6 No Late Submissions

You are expected to complete work on schedule. Work will not be accepted late unless there are extenuating circumstances and prior arrangements are made with me.

7 Accommodations for Disabilities

Reasonable and appropriate accommodations will be provided to students with disabilities who present a memo from Disability Resources for Students (<http://www.memphis.edu/drs/>).

8 No 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>.

8.1 Beware!

- I use plagiarism-detection software, and it works very well (scouring both the internet and other student's submissions).
- Never use copy/pasted text – especially in your essay.
- If you are caught cheating, you will receive an F in the course.

8.2 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.