

COMP 7085/8085: Program Comprehension

Fall 2012

Tuesday, Thursday 2:40–4:05 p.m.
Dunn Hall 227

<http://www.cs.memphis.edu/~sdf/comp7085/>

Instructor

Dr. Scott D. Fleming <Scott.Fleming@memphis.edu>

Office Hours: Tuesday, Thursday 2:00–2:30 p.m., 4:10–5:10 p.m., or by appointment

Office: Dunn Hall 303

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.

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.

Textbooks

None.

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*.

Presenter

The presenter must prepare a 20-minute presentation in which he/she provides a brief summary of the assigned paper.

The presenter must strictly follow these rules:

- Hard limit of 20 minutes—rehearse to get the length right!
- 10-slide limit
- Slides must have a white background
- Minimum font size: 24pt (20pt for figures and code samples)
- For any copied figures, include references to the source of the figure

And the presenter must address all of these items:

- **Motivation for the research (1-slide min):** What problems (big and small) did the research address? Why is it interesting? Why should anyone care about this work?
- **Authors' claims (1-slide min):** What are the authors trying to convince you of? What is the authors big idea?
- **Authors' method (1-slide min):** How did the authors go about trying to convince you of their claim? Or how did they validate their claim?
- **Papers' findings (1-slide min):** What were the authors' results, and how did the authors interpret them?
- **Contributions (1-slide min):** What did the work contribute (in addition to its findings)?
- **Background:** You may need to present some background information to understand one or more of the above.
- **Technical details:** Cover technical details only briefly and only if they are of particular interest.

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.

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.

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.

Presentations

Each presentation will be graded out of 10 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.

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!) and stay until the end of class; you must participate in discussions; and you must fulfill any extra duties you're assigned (e.g., presenter, rebutter duties).

Essay

Each student must write a 1500-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).

No Late Submissions

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.

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 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/>.

Acknowledgments

I based this course's seminar format largely on the one used by Martin Robillard in his COMP 762 (Winter 2012) course.