

Syllabus: CS 6241

Software Development I

Instructor info: See www.westga.edu/~wlloyd.

Catalog description

CS 6241 Software Development I 2/2/3

Pre-requisite: CS 5202 or equivalent

This course introduces the software development process while improving programming skills. Topics include object-oriented programming, test-driven development, class design, GUI design and programming, and incremental, iterative development. The coursework assumes that the student has fundamental programming, debugging, and code-interpretation skills in an object-oriented programming language.

My description of the course

This course will help you develop a

- practical
- personal
- process

for developing software.

Practical

- Useful
- Pragmatic
- Applied

Personal

Focused on the skills and practices you need to:

- develop software independently,
- be an effective member of a software development team

Process

```
if (softwareDevelopment != hacking)
{
    aDeveloper.Follow(aDevelopmentProcess)
}
else
{
    aDemon.CreateChaos();
}
```

Three Overarching Course Themes

1. The building blocks of software:
 1. Objects
 2. Classes
 3. Interfaces
2. The characteristics of good software
3. The practice of software development:
 1. Divide-and-conquer
 1. Process: iterative, incremental development
 2. Purpose: separation of concerns
 2. Behavior-driven development
 1. Domain modeling
 2. Behavioral contracts
 3. Test-first programming
 3. Using software development tools

How much work to expect

- You learn software development by reading and thinking about it, but above all by doing it.
- Therefore, you'll be working on an assignment almost every week.
- Software development takes a lot of time, so set aside blocks of time you can devote to it.

Note: Most assignments will be due on Monday to give you the weekend to work on them. *So, you need to start before the weekend so you can ask questions.*

Resources

There are no required texts. I recommend three books to all software developers:

- [Code Craft: The Practice of Writing Excellent Code](#), Goodliffe
- [The Pragmatic Programmer](#), Hunt and Thomas
- [Code Complete, Second Edition](#), McConnell

I also recommend that you join the [ACM](#) (Association for Computing Machinery) as a [student member](#).

Grading

- Exercises: 50%
 - To assess comprehension, application, and analysis with assignments on
 - Developing software
 - Testing software
 - Analyzing software
 - Using software tools
- Quizzes: 20%
 - To assess knowledge & comprehension with multiple-choice and short-answer questions
- Participation in class activities: 10%
 - To reward and encourage active engagement
 - Evaluation rubric: courses.cs.westga.edu/file.php/218/Course_overview/participationEval2.pdf
- Presentation: 10%
 - To apply presentation skills and to introduce “breadth” topics
 - Evaluation rubric: courses.cs.westga.edu/file.php/218/Course_overview/PresentationEvaluationRubric.pdf
- Tutorial, demonstration, or explanation web site: 10%
 - To demonstrate technical writing skills and to explore a selected topic in depth
 - Evaluation:
 - Content (accuracy, authority, currency, objectivity, coverage): 7%
 - Usability: 3%

Academic dishonesty

I encourage you to work with others to develop an understanding of the material, but the finished products must be your own work, unless the assignment states that it is to be done by a group.

A student who engages in any form of academic dishonesty will receive an F for the assignment and may receive an F for the course. The incident may also be reported to the Office of Student Affairs so that they can determine if further disciplinary action is warranted. The University policies for handling Academic Dishonesty are found in the following documents:

- The Faculty Handbook, sections 207 and 208.0401: www.westga.edu/~vpaa/handrev/
- Student Uncatalogue: "Rights and Responsibilities"; Appendix J: www.westga.edu/handbook/

Disabilities

Any student sanctioned by the office of Disability Services must share his or her "Student Disability Report" with Dr. Lloyd before any graded work is assigned to make appropriate arrangements. For more information, see: www.westga.edu/~dserve/menu.html.