

CS 216 – Introduction to Software Engineering

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Credits: 3

Bulletin Description: Software engineering topics to include: life cycles, metrics, requirements specifications, design methodologies, validation and verification, testing, reliability and project planning. Implementation of large programming projects using object-oriented design techniques and software tools in a modern development environment will be stressed.

Prerequisites: CS 215

Spring 2014

This course will introduce the student to the basics of software engineering and the Unix platform. Students will be exposed to the techniques and tools that allow large-scale software development in the modern world; while the course will be taught primarily on the Unix platform, the technologies and methodologies used will be applicable to the development of large programs regardless of platform.

Course web page: <http://protocols.netlab.uky.edu/~davidb/cs216>

Meeting Times and Places

Sec.	Teaching Assistant	Lecturer	Lecture Time/Place	Practicum Time	Prac. Place
001	Chao Du	David Bingham Brown	MF 11:00-11:50 AM B&E 148	W 10:00-10:50 AM	Young Library B-35
002	Kyle Blagg			W 11:00-11:50 AM	
003	Xin Li			W 1:00-1:50 PM	
004				W 2:00-2:50 PM	

Course Staff

Staff member	Office	Office Hours	Contact
David Bingham Brown	234 Hardymon	MR 2:30-4	david.b.brown@uky.edu Office: 257-6745
TBD	TBD	TBD	TBD

Course Materials

The only physical course material required is a “Clicker” for attendance and attendance quizzes. Formally, a “TurningPoint ResponseCard”, all students must have one to get credit for attendance. Clickers are available at the UK bookstore; you will need to ask for one at the counter. If you already have a clicker (for example, from CS 215, or any other class at UK that requires them), it should work in this class without issue.

In addition to checking the course web page regularly for assignments, students will also need to interact with the course’s source control system for submission of all assignments. Instructions for use of the source control system will be given during the first practicum session.

Additional course materials will be made available from the course web site.

Grading, Assignment, and Submission Policies

Your final grade in the class will be determined using the following weights and assigned a letter grade based on this scale:

Programming Assignments	35%	90-100%	A
Weekly Assignments (Practica, quizzes, homework)	30%	80-89%	B
Attendance	10%	70-79%	C
Midterm Exam	10%	60-69%	D
Final Exam	15%	<60%	E

Programming Assignments

There will be four programming assignments spaced throughout the semester. Each programming assignment will be announced in class with instructions and grading notes provided through the class web site. Together, these assignments will compromise 35% of your final grade. A rough schedule of the programming assignments for the class is included with the lecture schedule on page 6.

Weekly Assignments

During most weeks, homework will be assigned on Monday or Tuesday and be due Friday night at midnight (all homework will be collected from the source control system).

Most practicum sessions will also require a submission for grading, and will be due the night of the practicum at midnight (again via the source control system). Quizzes may also be given in the practicum sessions, and will also contribute to the Weekly Assignments section of your grade.

All together, these assignments will compromise 30% of your final grade. The two lowest scores in this section will be dropped for calculation of your final grade (the one lowest score will be dropped for calculation of your midterm grade).

Attendance

Starting with the third week (on Monday, January 27th), attendance will be taken in class through use of each student’s “clicker”. This will take the form of (typically) one or two questions asked in class; to get credit for attendance, you must only *answer* the questions, not answer them correctly. Attendance will compromise 10% of your final grade.

Note that attendance is not taken in the practicum sessions, although not attending a practicum session may severely limit your ability to submit the day’s practicum assignment, and no make-up quizzes will be given without a documented excused absence.

Midterm and Final Exams

The midterm (Friday, March 7th, normal class time, Nursing Computer Lab) and final (Monday, May 5th, 10:30 AM, Nursing Computer Lab) will be 10% and 15% of your final grade, respectively. Note that the time of the final exam is a function of the university's final exam schedule, and we have no influence over it. Make-up exams will not be provided without a documented excused absence.

Submission

All assignments (whether weekly problem sets, practicum exercises, or programming assignments) must be submitted electronically via the class's source control system. Use of this system will be explained during the first meeting of the practicum session on Wednesday, January 22nd. **Late assignments (of any type) will not be accepted without a documented excused absence.**

The TA for your section will specify which file formats will be accepted for non-code submissions; at the least, plain text and PDF files will be accepted.

Grades for all weekly assignments will typically be posted (and available for discussion with your TA) within a week of submission; the grading delay for programming assignments, however, may be longer.

Midterm Grades

Midterm grades will be posted in myUK on or before March 14th.

Excused Absences

Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Verification of Absences

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request "appropriate verification" when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Integrity

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Computer Facilities

Practicum sessions will be held in the computer lab in W. T. Young Library, room B-35. All practicum assignments and programming assignments will be compatible with the Linux environment available to all students via their multilab accounts; the first practicum session will be focused on familiarizing students with these resources.

In-Class Engagement

The use of electronic devices for reasons other than note-taking (or attendance via the clicker) and reference is not permitted during class sessions. Students are expected to be engaged while in class and not providing distractions for other students present.

Accommodations due to Disability

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Educational Objectives

This class is designed to introduce the student to the tools and techniques used to develop large software projects in the modern world.

Proficiency Goals

- Programming in a modern, object-oriented language
- Designing, implementing, and testing large projects
- Developing programs in the Unix/Linux environment
- Using an interpreted programming language

Familiarity Goals:

- The software life cycle and software economics
- Methodology of software development for large projects
- Developing programs for the Internet

Schedule of Lectures

Note: This schedule is tentative and subject to substantial change.

Week	Date	Topic	Programming Assignment
-	F 1/17	Course introduction	
1	M 1/20	No Class – Martin Luther King Day	-
	F 1/24	Roguelike object hierarchy discussion	
2	M 1/27	C++ and object-oriented design review; introduction to Unix	1
	F 1/31		
3	M 2/3	XML, serialization, and class library design	
	F 2/7		
4	M 2/10	Development toolchain	2
	F 2/14		
5	M 2/17	Software engineering methodologies	
	F 2/21		
6	M 2/24	Unit and regression testing	
	F 2/28		
-	M 3/3	Midterm review	-
	F 3/7	Midterm Exam	
8	M 3/10	Semester project discussion	3
	F 3/14		
-	M 3/17	No Class – Spring Break	
	F 3/21		
9	M 3/24	Basic design patterns	
	F 3/28		
10	M 3/31	Advanced topics in Object-oriented design	
	F 4/4		
11	M 4/7	Libraries in the Unix environment	
	F 4/11		
12	M 4/14	Advanced topics in C++	4
	F 4/18		
13	M 4/21	Special topics	
	F 4/25		
-	M 4/28	Final project presentations	-
	F 5/2	Final review	
-	M 5/5	Final Exam – 10:30 AM	