CS 2450
Object-Oriented Analysis and Design
Spring 2016

“Learning is essentially pleasurable.” – Kenneth Eble

Instructor       Robert Ball
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Email            robertball@weber.edu  (Do not send me messages through canvas – I will not see them.)

Office Hours
   Monday/Wednesday: 9:30am - 11:30am and 1:00pm – 1:30pm

Course Information
   Where  TE 109C
   When  Monday and Wednesday from 11:30am – 1:20pm

Course Description
An Object-Oriented Analysis and Design course provides practical guidance on the construction of object-oriented systems. Specifically, you will gain a solid footing in the Software Development Life Cycle (SDLC), and a mastery of object-oriented analysis and design. We will also cover the Unified Modeling Language (UML) in depth, and current software engineering practices.

Prerequisite: CS 1410

Class
Class will consist of lectures, group discussions, assignments, and a large group project. This class is structured to be flexible, and our schedule may change to reflect that. Any changes to our schedule will be announced in class, and posted on the course website.

A significant percentage of the time in class will also be dedicated to lab work to allow for time for the students to work on examples and projects in an environment where one on one help from the instructor is readily available.
This class will follow a hybrid, or flipped format. What this means is that you will be responsible to watch videos and to attend class. There will be quizzes at the start of class to make sure you watched the videos. Then when you come to class, we will practice hands on the material discussed in the videos. Because of this most of your assignments grade will come from in-class assignments.

**Attendance is a must for this class. You should plan on attending everyday.**

These assignments will constitute 40% of your grade. In addition to assignments, you will participate in a group project. Attendance is mandatory, and I will administer a short in-class quiz at the beginning of class each day. These quizzes may only be taken in class. NO EXCEPTIONS. I will drop two quizzes when calculating your grade to compensate for any missed classes etc. This final project and it’s corresponding group participation evaluation will be the remaining 50% of your grade. (30% for the project, and 20% for your groups evaluation of your participation.)

**Taking Notes**

Please do not write down everything I say – I am not that important! The things that you write down should be the insights that you receive during class. A few keywords, a sentence, or even a picture that will help you remember what you just understood is the point behind note taking. Note taking for someone else is pointless because notes are individualistic and if done correctly will not make any sense to another person. Learning involves thinking and internalizing what you hear. Notes are written down personal insights that should help you remember what you learned.

Should you take notes? Yes! Note taking involves active learning. It makes you think, which in turn helps you be confused, which makes you ask questions, help you be curious, etc. If you aren’t taking notes then you probably are bored and not paying attention.

**Attendance**

**Attendance is a must for this class. You should plan on attending everyday.**

In my experience, if you do not attend class you will fail. Course Objectives

At the conclusion of this course, you will be able to:

- Understand how to design, develop, and implement complex software projects.
- Understand, and explain the strengths and weaknesses of various modeling approaches.
- Understand the basics of proper interface design, and be able to design a user interface.

**Relationship of Course to Weber State University's Computer Science Program Objectives**

This course will either reinforce or introduce the following departmental learning outcomes:
1. Students will understand the importance of and will practice professional and ethical behavior, and will understand the professional, ethical, legal, security, and social responsibilities of computing professionals.

2. Students will be able to read and understand manuals, documentation, and technical literature, find and understand sources of information, and learn on their own what they need to continue to perform professionally after graduation.

3. Students will be able to solve new problems and to express their new solutions appropriately.

4. Students will be able to function as a team member and carry out assigned tasks.

5. Students will have the knowledge and the skills needed to be employable, and to be immediately and continuously productive.

6. Students will have a basic understanding of computer theory, software design and operation, project management, databases, networking, and computer hardware.

7. Students will understand algorithm design and how to express and how to implement algorithms using a variety of notation, programming languages, and paradigms.

8. Students will be able to debug computer programs.

9. Students will be able to express themselves clearly both verbally and in writing.

10. Students will be able to critically evaluate the quality and the features of information from various sources and to make informed decisions about the design of information systems.

Allocated Time

You should anticipate spending two to three hours of study per week for each credit hour of a university course. Computer and programming classes typically require time in the upper range.

Cheating

Students are expected to maintain academic ethics and integrity in regards to performing their own work. The WSU Student Code states clarifies cheating.

a. Cheating, which includes but is not limited to:
   i. Copying from another student’s test paper;
   ii. Using materials during a test not authorized by the person giving the test;
   iii. Collaborating with any other person during a test without authority;
   iv. Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of any test, without authorization of the appropriate official;
   v. Bribing any other person to obtain any test;
   vi. Soliciting or receiving unauthorized information about any test;
   vii. Substituting for another student or permitting any other person to substitute for oneself to take a test.
b. Plagiarism, which is the unacknowledged (uncited) use of any other person or group's ideas or work. This includes purchased or borrowed papers;
c. Collusion, which is the unauthorized collaboration with another person in preparing work offered for credit;
d. Falsification, which is the intentional and unauthorized altering or inventing of any information or citation in an academic exercise, activity, or record-keeping process;
e. Giving, selling or receiving unauthorized course or test information;
f. Using any unauthorized resource or aid in the preparation or completion of any course work, exercise or activity;
g. Infringing on the copyright law of the United States which prohibits the making of reproductions of copyrighted material except under certain specified conditions;

*CS Department policy dictates that any verifiable evidence of student academic cheating, as defined and determined by the instructor, will result in: 1) an automatic failing grade for the class and 2) a report to the Dean of Students that will include the student’s name and a description of the student’s dishonest conduct.

Instructor Note: The most common form of cheating in programming courses is to “borrow” code from the Internet or copy code from a fellow student. To submit work that you did not create is cheating and will result in failure of the course. No matter how desperate the situation seems, a 0 on an assignment is better than an E for the course. Please do not cheat.

“I really, really need to get a C” policy
The most effective method for obtaining a C or above in this class is to submit assignments when they are due and to stay current with course topics. The curriculum is carefully designed to fit the number of course weeks. In order to uphold academic rigor and integrity, student grades must be based on the degree to which the course requirements listed in the syllabus are fulfilled. Extra credit assignments are not allowed. If you approach me anytime during the term claiming that special allowance should be made because you need a C to move forward in the program, graduate, receive financial aid, etc., I will decline your request and refer you to this clearly worded policy.

Other Important Information
Cell phones
Use the vibrate mode only. If you need to answer a call, please do so outside the classroom. Absolutely no text messaging allowed. If you must take an emergency call or page, quietly leave the classroom to conduct your conversation. We will be using computers in classrooms. Please ensure that all classroom computer activity is directly related to the lecture or assignment.

Emergency campus closure
In the event of an extended campus closure, I will continue to provide instruction by utilizing Canvas, the online course system. I will expect you to log in to the system on a regular basis to keep up with coursework. Assignments will be provided through the online system with clear due dates and expectations. Discussions will be made available to allow you to interact with other students and me.
about course material. I will check my Weber email on a daily basis should you need to communicate with me personally. It is imperative that I am able to contact you and that I have accurate contact info on you. You are responsible for checking your Weber e-mail or for having Weber messages forwarded to accounts you do check.

Accommodations for disabilities
Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in room 181 of the Student Service Center.

Grading
The final grade will be given based on points accumulated through exams and labs. Standard grading will apply:

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<td>90-93%</td>
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Due Dates
The official due date for every assignment is what is shown on Canvas. If Canvas shows that an assignment is due at 10am for a particular date for a particular assignment, then that is when it is due. If you feel that what is shown on Canvas is wrong, then please contact me immediately. If I announced in class a particular due date and time but Canvas shows another due date and time, then Canvas is right and I am wrong. I find this helps students because Canvas is always available and I am not.

Late policy
I do not accept late work unless you have a very good reason. If you had an extenuating situation that required that you turn in your assignment late then you must talk to me in person about the situation.

I am extremely nice and flexible when people ask if they can turn in assignments early. Go for it! Turn everything in early!!

Assignments and Projects
Assignments: 40%
Quizzes: 10%
Final Project: 30%
Group Evaluation: 20%

You will be grouped into teams for your final project a few weeks into the semester. Because you will spend much of your career working in teams, team participation is critical to your success in this class. Teams will have the option of ‘firing’ you if they feel that you are not equitably participating in the project. This means that if you are fired, you will not be on a team, and may receive a zero on the final project and evaluation. You may petition other teams to ‘hire’ you, but if no other team will hire you it will result in a failure for the course.
Please note that as the instructor for this class, I will evaluate all firings for merit. I will not punish you if the firing was unjustified.

Tentative Class Schedule and Course Outline
The class schedule is posted on Canvas. Please note what is said in class and what the deadlines are in Canvas because they may change.