OTTERBEIN UNIVERSITY

Syllabus

COMP 2000-01
Object-Oriented Design

Spring Semester 2020

Basic Information

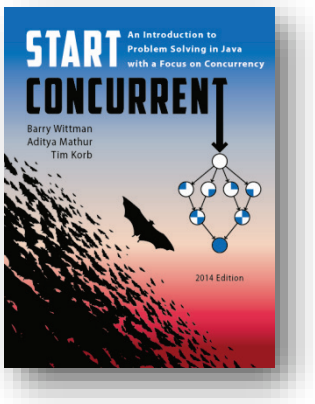
Credits:	4.0
Time:	**MWF** 11:30 a.m. - 12:25 p.m. (Lecture)
	TR 11:30 - 12:50 p.m. (Lab)
Location:	The Point 113
Prerequisites:	COMP 1600

Instructor Information

Name:	Dr. Barry Wittman
E-mail:	wittman1@otterbein.edu
Office:	The Point 105
Phone:	(614) 823-2944
Office hours:	**MWF** 9:00 – 10:15 a.m.,
	MWF 3:00 – 5:00 p.m.,
	TR 9:00 – 9:55 a.m.,
	TR 2:00 – 5:00 p.m.,
	and by appointment

Text Book

Barry Wittman, Aditya Mathur, and Tim Korb
Start Concurrent: An Introduction to Problem Solving in Java with a Focus on Concurrency
Available: https://start-concurrent.github.io



Course Catalog Description

Bridging from analysis to implementation, how to decompose a proposed system so that it can be implemented in a reliable and cost effective manner. Object-oriented design of component-based software is emphasized, and utilizing tools to document the design. The relationship between component design and component implementation is explored. Design Patterns will also be emphasized.

Student Learning Outcomes

By the end of the course, students will be able to:

I. Apply knowledge of computing and mathematics, including common data structures and basic algorithms, to solve problems
II. Design, implement, and evaluate a computer-based system, process, component or program to meet desired needs
III. Describe fundamental principles of the cycle of designing, implementing, compiling, and testing code
IV. Learn to adhere to standards of style and documentation
V. Use inductive or deductive reasoning to formulate solutions to problems
VI. Model real-world phenomena mathematically and computationally
VII. Employ interfaces and inheritance to design reusable software components
VIII. Use exceptions to handle program errors
IX. Construct graphical user interfaces (GUIs)
X. Explain and apply recursion
XI. Read and write binary and text files
XII. Use sockets for network communication
XIII. Implement linked lists
XIV. Apply library classes effectively
XV. Use UML as part of the code development process
XVI. Design and run unit tests
XVII. Use regular expressions for pattern matching

Program Learning Outcomes

The Computer Science major has a set of 10 Student Learning Outcomes (SLOs). Work in this course contributes to the following SLOs:

2. Students can methodically solve algorithmic problems in at least one programming language.
3. Students develop an understanding of the recurring themes of abstraction and computation.
4. Students are proficient in a software development paradigm.
5. Students can apply development practices and processes to a variety of problems.

6. Students can independently learn and apply new methods and tools.
9. Students can effectively collaborate in team projects.

Method for Determining Course Grade

The final grade for this course will depend upon the grades and scores earned on course components weighted as follows:

35% Five equally weighted team projects
Tentative due dates:
Project 1: 02/07/2020
Project 2: 02/28/2020
Project 3: 03/20/2020
Project 4: 04/03/2020
Project 5: 04/24/2020
15% In-class labs
5% Pop quizzes
30% Two equally weighted midterm exams
Exam 1: Tentatively scheduled for 02/10/2020
Exam 2: Tentatively scheduled for 03/23/2020
15% **Final Exam:** 10:15 a.m. - 12:15 p.m., 04/27/2020

Grades will be computed by rounding numerical percentages to the nearest integer and applying the following table:

A	93-100	**B-**	80-82	**D+**	67-69
A-	90-92	**C+**	77-79	**D**	60-66
B+	87-89	**C**	73-76	**F**	0-59
B	83-86	**C-**	70-72		

Grades for each project, lab, quiz, and exam will be recorded in Blackboard. Students may compute their current average by using these scores with the weights listed above.

Attendance and Participation Policy

Attendance is expected of every student at every lecture. Students are responsible for all content covered in class as well as assigned book chapters. Students should come to class with their text books, having read the material to be covered that day. Students who have not prepared for class may be asked to leave. Due to their nature, pop quizzes cannot be made up.

Except in the case of documented emergencies, labs and exams cannot be made up afterwards. For excused absences, students must arrange to take the lab or exam *before* the normally scheduled time. Arrangements must be made with the instructor at least two weeks prior to the scheduled time.

Students are expected to maintain an attitude of respect at all times toward their colleagues, the equipment, and the instructor. Students are expected to refrain from using the computers for non-course related purposes during class time and will be penalized 1% of the final grade for each occurrence. Cell phones and similar devices should be turned off before entering the classroom. Students who use offensive language, misuse computing facilities, or are otherwise disruptive of the classroom will be asked to leave.

Expectations for Out-of-Class Work

Projects

All projects are team projects in this course. For each project, all students must form teams of two (or three in the case of an odd number of students). Students are permitted to select their own teams; however, no two students may partner up for more than one project. In other words, each team will be different for each project. Students should select their teams through Blackboard.

Teams are responsible for dividing their workload. Except under extreme circumstances, all members of the team will receive the same grade for each project. One member of each team is designated the leader. The files for each project should be zipped up and uploaded by the team leader using Blackboard before the due date. Projects must **not** be stored in a public folder. If the project is late, the group will receive a score of 0. **If the project does not compile, the group will receive a score of 0.**

Projects will be graded based on the following criteria:

1. **Correctness:** Finding the right answer
2. **Formatting:** Displaying the right answer according to instructions
3. **Style and Documentation:** Producing readable code with appropriate comments

Late projects will not be accepted, with the following exception. Each student has 3 grace days. These grace days may be used together or separately to allow a 24-hour extension of the project deadline per grace day. A team wishing to use a grace day must inform the instructor via e-mail *before* the normal deadline. Both students in the team will have the appropriate number of grace days deducted. If the members of a team have different numbers of grace days available, the team will be treated as if it has the maximum number of grace days of any of its members.

In addition to office hours, students are encouraged to ask questions and discuss projects on Piazza.

In-class Labs

All labs are to be done individually, in class, with the assistance of the instructor. Each assignment will be given near the beginning of a class and must be uploaded to Blackboard before the end of the class. Exercises submitted after class is over will not be accepted. To receive full credit, a programming assignment must compile, but partial credit will be awarded based on the understanding of the material demonstrated by the student's code.

Academic Honesty

All academic work should be your own. Academic dishonesty (plagiarism and cheating) may result in automatic failure of the assignment or the course itself, and you will be referred to the Academic Affairs Office for suspension or expulsion proceedings.

You are plagiarizing when you:

1. Copy material from a source without using quotation marks and proper citation.
2. Follow the movement of the source, substituting words and sentences but keeping its meaning, without citing it.
3. Lift phrases or terms from a source and embed them in your own prose without using quotation marks and proper citation.
4. Borrow ideas (that are not common knowledge) from a source without proper citation.
5. Turn in a paper wholly or partially written by someone else.

The complete statement on Plagiarism, Cheating and Dishonesty can be found in the Campus Life Handbook, page 33.

All projects must be completed by the students in a given team, without assistance from anyone other than the instructor. Students can discuss the course material with each other, but all work must be done within the team. For projects, exams, labs, and all other activities in the course, students are expected to act according to the official policy on academic dishonesty and the highest standards of personal integrity.

The first infraction of academic honesty in this course will carry a penalty of a 0 for the project, assignment, or exam in question and a reduction of a full letter grade in the final grade. If a second infraction occurs, the students involved will fail the course, and the instructor will seek the maximum penalty possible under the University's regulations, up to and including expulsion.

Learning Differences

If you have a documented learning difference please contact Kera McClain Manley, the Disability Services Coordinator, to arrange for whatever assistance you need. The Disability Services is located in Room #13 on the second floor of the Library in the Academic Support Center. You are welcome to consult with me privately to discuss your specific needs. For more information, contact Kera at kmanley@otterbein.edu, (614) 823-1618 or visit Disability Services.

Statement on Credit Hour Definition/Expectation for Student Work

For each credit hour of classroom or direct faculty instruction, students are expected to engage in two hours of out-of-class work (readings, homework, studying, project preparation, etc.). A three semester credit hour course requires six hours per week of out-of-class work.

Nondiscrimination at Otterbein

Otterbein University is committed to providing a welcoming environment free from unlawful discrimination. To this end, the University prohibits any form of discrimination against any person on the basis of race, color, sex, gender, pregnancy, religion, creed, marital status, partnership status, age, sexual orientation, gender identity, gender expression, national origin, disability, military status, or any other legally protected status in its programs and activities. All Otterbein faculty and staff share in the responsibility to create a safe learning environment for all students and for the campus as a whole. Please know that as members of the campus community, all faculty and staff (other than those designated as confidential reporters) are designated as responsible employees and therefore have the duty to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. Students who want to report cases involving sexual misconduct should contact either Julie Saker, Deputy Title IX Coordinator at (614) 823-1154/jsaker@otterbein.edu or Scott Fitzgerald, Title IX Coordinator, (614) 823-1130/sfitzgerald@otterbein.edu. Students who believe they have been discriminated against should contact Scott Fitzgerald, Director of Human Resources, (614) 823-1130/sfitzgerald@otterbein.edu. Information about these policies can be found at our Title IX website and our Discrimination and Harassment Policy. If a student would prefer to share information about sexual harassment, sexual violence or discrimination to a confidential employee who does not have this reporting responsibility, a list of those individuals is here:

- University Counselors: Kathy Ryan & Caleb Tipple at counseling@otterbein.edu or (614) 823-1250
- University Chaplain: Judy Guion-Utsler at jguionutsler@otterbein.edu or (614) 823-1409
- WGSRC Coordinator: Suzanne Ashworth at sashworth@otterbein.edu or (614) 823-1028

Tentative Schedule

The following is a tentative schedule of the topics to be covered in each week. This schedule is subject to change as need dictates. Students will be informed of changes by the instructor in class. A schedule will be kept on the course webpage.

Week	Starting	Topics	Chapters	Notes
1	01/13/20	Java Recap	3 - 9	
2	01/20/20	Interfaces	10	MLK Day
3	01/27/20	Inheritance	11 and 17	
4	02/03/20	Exceptions	12	Project 1 Due
5	02/10/20	GUI	7 and 15	Exam 1
6	02/17/20	More GUI	15	
7	02/24/20	Recursion	18	Project 2 Due
	03/02/20	**Spring Break**		
8	03/09/20	Files	20	
9	03/16/20	Network I/O	21	Project 3 Due
10	03/23/20	Linked Lists	18	Exam 2
11	03/30/20	JCF	18	Project 4 Due
12	04/06/20	UML, design, and testing	16	Good Friday
13	04/13/20	Regular Expressions	Notes	
14	04/20/20	Review	All	Project 5 Due