ITP 265: Object-Oriented Programming
Units: 4
Fall 2019-TBD-TBD

Location: TBD (See schedule of courses)

Instructor: Kendra Walther
Office: OHE 530E
Office Hours: TBD. See contacts on Blackboard
Contact Info: All general course/assignments questions should be asked on Piazza (every student will receive an invitation at the start of the semester).

Other questions should be asked via email: kwalther@usc.edu
(General timeline for replying to emails is within 24 hours)

Teaching Assistant: TBD
Office: TBD
Office Hours: TBD
Contact Info: TBD

IT Help: Provided by Viterbi IT
Hours of Service: 8am–5pm M-F
Walk-in: DRB 205
Contact Info: (213) 740-0517
Email: engrhelp@usc.edu

Course Description
This course focuses on problem solving within the object-oriented programming paradigm. This is the second course in the introductory series for the programming minor. Students will expand upon what they learned in their introductory programming course, applying it to the Java programming language. Students will learn how to design and create classes in Java using constructors, accessors, and mutators to maintain object state. The course focuses on object-oriented programming design, and students will learn about inheritance, polymorphism, abstract classes, and interfaces. Students will learn best practice approaches for software project design using object-oriented principles and some basic design patterns. Students will be introduced to collection classes and how to use basic data structures. By the end of the course, students should feel comfortable designing a system with multiple classes using inheritance.

Learning Objectives
- Build and strengthen programming and software design skills
- Understand the difference between classes and objects
- Design classes within Java to represent real-world data
- Understand basic object-oriented principles such as inheritance and polymorphism
- Use the Java collection classes to solve real-world problems
- Design a system with multiple classes using inheritance

Prerequisite(s): ITP 115 or ITP 165

Course Notes
Format: This course will make use of several tools for content and assignments including Google Drive, Blackboard, and an online class discussion forum. Lecture notes and any supplemental course content will be posted to Google Drive and/or Blackboard for use by all students. Any and all announcements for the course will be posted to the class discussion forum. All assignments will be posted to Blackboard and will be submitted through Blackboard.

Required Readings and Supplementary Materials
The required book for this course will be customized version of <u>Java Early Objects with zyLabs</u> by Roman Lysecky and Adrian Lizarrago through an online textbook platform, ZyBooks: https://www.zybooks.com/catalog/java-early-objects/

Course Structure
The class meets for one hour and 50 minutes twice a week for a total of 3 hours and 40 minutes. One exam and several in-class tests will be given. Programming assignments and the final project will be assigned to be completed outside of class time. Access to a laptop computer during class is required. ITP does have a laptop loaner policy for students enrolled who do not have a personal laptop.

Grading Breakdown

Item	% of Grade
Assignments (weighted proportionally)	45
Final Project	15
Tests (3 total, weighted equally)	20
Final Exam	20
Total	**100**

Grading Scale
Course final grades will be determined using the following scale

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

If you are taking the class with a grade of P/NP, you must earn a grade of 70% or higher in order to receive a P.

Programming Assignment Policies

Programming assignments will generally be due one week after they are assigned and should be completed individually. All code should be submitted on Blackboard (unless otherwise stated) and must compile.

Homework
The assignments will be posted on the Google Doc Course Schedule, and submission link will be on Blackboard under the "Assignments" section. Each assignment will include instructions, requirements, point breakdown, a due date, and a link for electronic submission. Assignments must be submitted using this link. Assignments will be digitally submitted through Blackboard except where explicitly specified.

It is the student's responsibility to submit assignments **on or before** the due date. Assignments turned in up to 24 hours late will have 15% of the total points deducted from the graded score.

Assignments turned in 24-48 hours late will have 30% of the total points deducted from the graded score. Assignments turned in 48-72 hours will have 50% of the total points deducted from the graded score. After three days, submissions will **not** be accepted, and will result in a score of 0 (zero). Each student will be allowed **TWO** 24-hour late assignments for "free", which may not be used on final project, and students must fill out the "Late Assignment" Google form.

Students are required to keep a copy of all of their assignments. Frequent backups to an external drive or to the cloud is strongly recommended. ITP is not responsible for any work lost.

Grading Timeline
Assignments will be graded, and students will receive feedback within two weeks after submission.

Grading Issues
Students will have two weeks after graded feedback is given to contest scores (e.g. assignments, tests, exam, and project). After two weeks, scores will not be changed.

Final Project Details

Requirements
The **design** for final project will be assigned as Homework 10, due Sunday at noon of Week 14. Students should immediately start programming their final projects and will submit an intermediate checkpoint of their project progress on Friday at midnight of Week 14. The final project and report will be due by 8am at the start of study days.

The final project will be graded on how it fulfills the requirements and the quality / completion of the code. Students must plan and implement a multiple-class, fully functioning application in Java. Successful projects will have a clear inheritance hierarchy, read and store data to files, allow for user interaction, and demonstrate concepts learned during the course. A project must represent the student's sole effort; online tutorials or other examples may be consulted, but they must be improved upon and noted in the final documentation. Failure to note and provide links to reference material will be considered cheating.

Grading Rubric

Item	Points
Final Design Document (Report on project)	15
Inheritance Hierarchy	10
Use of Java Interfaces and Abstract Classes	10
File I/O and robust user interaction	20
Use of MVC Design Pattern for code organization	15
General Code Correctness and Style	30
Total	**100**

Additional Policies
General
No make-up exams or test (except for documented medical or family emergencies) will be offered.

Attendance may be taken during lecture sessions electronically, verbally, or via a roster passed around the room. Do not sign in for another student; doing so is an academic integrity violation. Attendance is not mandatory, but students are responsible for any announcements made during lecture time and understanding material covered in class. Student work will be graded on the assumption that they have mastered material from class.

Do not reproduce, distribute, or post any lecture material, assignments, or exams publicly without my written consent. Students may take notes and make copies of course materials for their own use. Students may not post my course materials on sites such as CourseHero. Doing so is a copyright violation and in some cases may also be an academic integrity violation that will be dealt with accordingly.

ITP offers open lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes. Hours are at https://itp.usc.edu/current-students/open-lab-schedule/. In addition, ITP has a laptop loaner program for students who may need temporary use of a laptop in order to complete an assignment.

Late Add
Per university policy, students are allowed to add the course until the end of week three. Any students wishing to add the course should plan on attending the course from the beginning of the semester. Upon adding the course after week 1, the student should email the instructor **immediately** to make sure there is a plan for completion of work and learning missed materials. Any missed work is required to be completed and submitted according to the schedule provided by the instructor.

Academic Integrity
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles.

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in **SCampus** in Part B, Section 11, "Behavior Violating University Standards" https://policy.usc.edu/scampus-part-b/ .   Other forms of academic dishonesty are equally unacceptable. See additional information in **SCampus** and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct.
Academic integrity tutorials can be found at https://libraries.usc.edu/research/reference-tutorials

Examples of behavior violating University standards:
- The submission of material authored by another person but represented as the student's own work, whether that material is paraphrased or copied in verbatim or near-verbatim form.
- Obtaining for oneself or providing for another person a solution to homework, a project or other assignments, or a copy of an exam or exam key without the knowledge and expressed consent of the instructor.

- Unauthorized collaboration on a project, homework, or other assignment.
- Fabrication: Submitting material for lab assignments, class projects, or other assignments which is wholly or partially falsified, invented, or otherwise does not represent work accomplished or undertaken by the student.

If the instructor, a grader, or a lab assistant **suspects** you of academic dishonesty, it has to be reported to SJACS (https://sjacs.usc.edu). Do not share assignments with any other people. Do not submit another person's work as your own. Do not look at other students' papers during exams. Do not leave the room during an exam without permission. **Do not cheat! As Trojans, we are faithful, scholarly, skillful, courageous, and ambitious.**

Viterbi Honor Code

Engineering enables and empowers our ambitions and is integral to our identities. In the Viterbi community, accountability is reflected in all our endeavors.
Engineering+ Integrity.
Engineering+ Responsibility.
Engineering+ Community.
Think good. Do better. Be great.
These are the pillars we stand upon as we address the challenges of society and enrich lives.

ITP 265 Course Schedule: A Weekly Breakdown

Note: Approx. 8 hours/week of work outside of class is expected outside of class.
Reading (2-3 hrs/wk) + HW (5-6 hrs/wk).

Week	Topics	Reading	Assignment
1	Course overview. Data Types. Input/Output. Control Structures.	Zybook, Ch 1	HW00: Intro *due before next lecture* HW01: Basic I/O *due day 2 of week 2*
2	For Loops. Arrays in Java. References (Java API)	Zybook, Ch 2	HW02: Looping array (Numbo Game) *due day 2 of week 3*
3	Designing classes in Java **Test 1**	Zybook, Ch 3	HW03: Simple Class Design (TicTacToe or Receipt) *due day 2 of week 4*
4	Constructors, Accessors, Mutators, toString, equals	Zybook, Ch 4	HW04: Multiple Class Design (Restaurant) *due day 2 of week 5*
5	File I/O and Exception Handling	Zybook, Ch 5	HW05: File I/O (Multiple Choice Quiz Program) *due day 1 of week 6*
6	**Test 2** Recursion (File Counting)	Zybook, Ch 6	HW06: Recursion Problems *due day 1 of week 8*
7	Enums, Unit Testing.	Zybook, Ch 7	
8	Multi-dimensional arrays. Introduction to Inheritance	Zybook, Ch 8	HW07: Simple Inheritance (Candy or Yahtzee) *due day 2 of week 9*
9	Inheritance and Polymorphism	Zybook, Ch 9	HW08: Inheritance Hierarchy (Bakery) *due day 1 week 11*
10	Abstract Classes and Methods. Interfaces	Zybook, Ch 10	
11	**Test 3** ArrayLists, Generic Classes, Iterators	Zybook, Ch 11	HW 09: Using Collections (Food Diary) *due day 2 of week 13*
12	Collections: List, Set, and Map	Zybook, Ch 12	
13	Streams and functional programming Threads	Zybook, Ch 13	HW10: Design for Final Project *due Sunday of week 14*
14	Design Principles and Design Patterns	Head First Design Patterns, sections TBA	Final Project Checkpoint *due Friday of week 14*
15	MVC, Final Project		Final Project *due at the start of study days*
Study Days	Special Office Hours will be Announced on Piazza		
Finals	**Final exam** will be comprehensive over all topics covered during the semester. This will take place during the scheduled final exam period (see Schedule of Classes)		

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" https://policy.usc.edu/scampus-part-b/. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct.

Support Systems

Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. https://engemannshc.usc.edu/counseling/

National Suicide Prevention Lifeline - 1-800-273-8255
Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. http://www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.
https://engemannshc.usc.edu/rsvp/

Sexual Assault Resource Center
For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: http://sarc.usc.edu/

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086
Works with faculty, staff, visitors, applicants, and students around issues of protected class.
https://equity.usc.edu/

Bias Assessment Response and Support
Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. https://studentaffairs.usc.edu/bias-assessment-response-support/

The Office of Disability Services and Programs
Provides certification for students with disabilities and helps arrange relevant accommodations. http://dsp.usc.edu

Student Support and Advocacy – (213) 821-4710
Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. https://studentaffairs.usc.edu/ssa/

Diversity at USC
Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. https://diversity.usc.edu/

USC Emergency Information
Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible, http://emergency.usc.edu

USC Department of Public Safety – 213-740-4321 (UPC) and 323-442-1000 (HSC) for 24-hour emergency assistance or to report a crime.
Provides overall safety to USC community. http://dps.usc.edu