Programming Graphical User Interfaces

ITP 368 (3 Units)
Spring 2019

Catalogue Description	Programming applications with dynamic graphical user interfaces. Topics include events, controls, resources, data bindings, styles, and user experience.
Course Objective	Build and strengthen programming and software design skills in Java while learning how to use Java APIs for building applications, animations, simple games, and user interfaces. Strengthen understanding of object-oriented programming design and software project design using design patterns. Understand and apply fundamental UI design principles while programming desktop UI components.
Prerequisites	CSCI 104 or ITP 365
Instructor	Kendra Walther (kwalther@usc.edu)
Office Hours	Mon 2:15-3:30pm. Tues 11-12pm. Thurs 1-2pm **Office Location:** OHE 530E
Lab Assistants	Listed on Google Doc Course Overview
Course Hours	MW 12:00-1:50pm in GFS 222 | TuTH 2:00-3:50pm in OHE 540
Course Structure	The class meets for one hour and 50 minutes twice a week for a total of 3 hours and 40 minutes. Four in class tests will be given, with the lowest dropped. Programming assignments or projects 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.
Required Readings	Readings for this course will be available through **Safari Books Online**. To access, students will need an ACM student membership ($19) and can subscribe to the course playlist. Directions for access will be given in class. Books referenced will include: ● Core Java Volume I and Volume II by Cay Horstman ● Learn JavaFX8: Building User Experience and Interfaces with Java 8 by Kishori Sharan ● Mastering JavaFX 10 by Sergey Grinev ● Head First Design Patterns by Eric Freeman, Elisabeth Robson, Bert Bates, and Kathy Sierra
Grading	The following percentage breakdown is used to determine the final grade. Final Project 20% Assignments (weighted proportionally) 45% Tests (4 total), lowest dropped 35% --- TOTAL POSSIBLE 100 %
Grading Scale	The following scale is used to determine the letter grade:

93% and above	A		77 - 79%	C+
90 - 92%	A-		73 - 76%	C
87 - 89%	B+		70 - 72%	C-
83 - 86%	B		69 – 65	D
80 - 82%	B-		64 and below	F

	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. Final grade percentages are calculated to two decimal places and rounded to hundredths.
Late Add	Per university policy, students are allowed to add the course until the end of week 3. 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.
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, 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 specifically specified.
	It is your 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 you will receive a 0. Each student will be allowed **TWO** 24 hour late assignment for "free", which may not be used on final project, and you must fill out the "Late Assignment" Google form.
	You are required to keep a copy of all of your assignments. Frequent backups to an external drive or to the cloud is strongly recommended. ITP is not responsible for any work lost.
Policies	No make-up exams or quizzes (except for documented medical or family emergencies) will be offered. The lowest quiz will be dropped.
	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 you are responsible for any announcements made during lecture time and understanding material covered in class. Your work will be graded on the assumption that you have mastered material from class.
	Do not reproduce, distribute, or post any lecture material, assignments, or exams publicly without my written consent. You may take notes and make copies of course materials for your own use. You may not post my course materials on sites such as CourseHero. Doing so is a copyright violation and 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.

Kendra Walther's Spring 2019 Schedule

You are welcome to visit my office during office hours and any time my door is open!

Kendra Walther Schedule Spring 2019

	Monday	Tuesday	Wednesday	Thursday	Friday	
10 am	ITP 109 Java		ITP 109 Java			10 am
11 am	VKC 252	Office Hours OHE 530E 11-12	VKC 252			11 am
	Lunch		Lunch			
noon	ITP 368 GUI (Ocean) GFS 222		ITP 368 GUI (Ocean) GFS 222		Available by advance appointment only	noon
1 pm		ITP 470 Student Meetings		Office Hours OHE 530E 1-2		1 pm
2 pm	Office Hours OHE 530E 2:15-3:30	ITP 368 GUI (Sand) OHE 540	Not available	ITP 368 GUI (Sand) OHE 540		2 pm
3 pm						3 pm
4 pm						4 pm
5 pm						5 pm
Coding	ITP 109 Section 31837	ITP 368 Section 31851	ITP 368 Section 32097	Office Hours	Sometimes available	

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.

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

Academic Integrity, cont'd	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.**
Disability Services	*The Office of Disability Services and Programs*, information at *http://dsp.usc.edu* provides certification for students with disabilities and helps arrange the relevant accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. **Please be sure the letter is delivered to your course instructor as early in the semester as possible.** If you need accommodations for an exam, the form needs to be given to the instructor at least two weeks before the exam, but preferably at the beginning the semester.
Emergency Preparedness	If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information*, information at http://emergency.usc.edu/, will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.
Support Systems	Discrimination, sexual assault, and harassment are not tolerated by the university. **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

Support Systems, cont'd	**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/ **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

ITP 368 Course Outline*

Note: Approx. 6 hours/week of work outside of class: Reading (2 hrs/wk) + HW (4 hrs/wk)
(Use Google Doc Outline for most up to date reading assignments.)

Week	Topics	Assignment
1	Introduction to Java	HW0: Introduction
	OOP Classes. Using Eclipse. Scanner class (I/O).	HW1: Debugging. Class Design.
2	Inheritance, Enums. Project Design Testing & Debugging, Interfaces.	HW2: Small Inheritance Project
3	MLK Day (**No Class**) Exceptions. Collections. Code Design	HW3: Collections Project
4	**Test 1.** Design Patterns Design Patterns + UML Project Design	HW4: Big Inheritance Project Part 1
5	Functional Programming. Lambdas. Streams. Java FX Basics. Java Bean Properties.	HW5: Big Inheritance Project Part 2
6	More Java FX Basics Java FX Animations. (Transitions)	HW6: Shape and Animation Project
7	Presidents Day (No Class) **Test 2.** Layouts Panes and UI Controls.	HW7: Simple UI Design
8	Animation Demos. UI Controls. Guest Lecture (Concurrency) or Open Lab	HW8 Scene Builder
9	SceneBuilder. Gestalt and UI Design Events. Event Handling. Key & Mouse Events.	HW9: Game Design Preparation.
10	Interface Design Rules. Game Design **Test 3.** Movement. Animation Timer	HW10: Lights Out Game Design
11	Accessibility Multimedia. Listeners. Binding	HW11: Moving Game
12	Localization. Internationalization Lists and List Customization	HW12: List and i18n Project
13	Persistence. Tables. Field checking **Test 4.** Menus	HW13: Final Project Design
14	Final Project Guidelines and Samples Final Project Workshop.	HW14: Final Project Checkpoint
15	Deploying JavaFX Applications Final Project Workshop.	HW15: Final Project Checkpoint

Study Days: Special Office Hours will be Announced on Piazza
Final Project Presentations, individually presented during class exam period
* The above course outline is for planning purposes and is subject to change.