CSC 220CPVL – Object Oriented Multimedia Programming, Fall 2019, First Day Handout

TuTh 12-1:20 or 1:30-2:50 PM, Old Main 159, http://faculty.kutztown.edu/parson
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Office Hours Monday 12:30-2:30, Tuesday 3-4, Wednesday 2:30-4:30, or by appointment.

This course introduces students to object-oriented programming in the context of implementing multimedia systems. Object-oriented programming topics include classes, information hiding and encapsulation, delegation, several types of inheritance, mechanisms for code reuse, and design for flexible refactoring. Students will use object-oriented programming to manipulate graphical images, video streams, audio signals, physical devices containing electronic sensors and effectors, and a partial combination of these media. There will be solo and team programming projects.

Prerequisite: CSC120, or CSC136 with a grade of C or better.

The following textbooks are all optional and on reserve in Rohrbach Library. If you haven't programmed in Java, get the first book below.

Textbook: *Learning Processing*, Second Edition, Daniel Shiffman, ISBN 978-0123944436.

Processing, 2nd Edition, A Programming Handbook for Visual Designers and Artists, Reas and Fry.

See also https://processing.org/, http://learningprocessing.com/, http://p5js.org/, http://py.processing.org/.

Grading (A = 92:100, A- = 90:91, B+ = 87:89, B = 82:86, B- = 80:81, C+ = 77:79, C = 70:76, D = 60:69, F = 0:59)

Midterm exam	15% of grade
Final exam	15% of grade
Projects	70% divided among the project assignment deliverables.

Programming project assignment grading criteria

Please follow my detailed requirements in assignment handouts.
Test everything before turning it in via D2L.
When you think you are finished, read the requirements to avoid missing anything.
Test it after any changes.
I will deduct points for missing documentation comments required in the handout.
Team project grades will include peer review points from your teammates.

The academic integrity policy is at http://cs.kutztown.edu/pdfs/AcademicIntegrityPolicy.pdf

Your first reading assignment is to read the above policy statement.
You may openly discuss ideas, algorithms, pitfalls, and the use of programming tools.
You may not share code, test drivers or test data except within groups for group projects.
Group projects, when assigned, have documented partitioning of student responsibilities.

Class attendance is not graded, but I will be teaching using data sources and concepts both inside and outside the scope of the textbook. You are responsible for all material covered in class, including technical information, coding standards and conventions, verbal specification of assignments, and your questions about topics that are not clear to you. Please, there should be no classroom conversations, cell phones, text messaging, eating, sleeping, obscenities, smoking (tobacco or artificial), vaping, listening to music or other disruptions of the class. I will deduct 5% from an assignment for each infraction.

If you have already disclosed a disability to the Disability Services Office (215 Stratton Administration Building) and are seeking accommodations, please feel free to speak with me privately so that I may assist you. If you have an injury sustained during military service including PTSD or TBI, you are also eligible for accommodations under the ADA and should contact the Disability Services Office.

If you have preferred pronouns for yourself, or a name that differs from the MyKU roster, please let me know.

W1	Introduction to Processing, the course, and the planned projects.
2	2D drawing primitives, geometric transforms, modular coding. **Hand out assn1**.
3	Java data types, functions/classes/methods/interfaces, inheritance, framework, libraries.
4	Loading and displaying images, 2D vector images, saving images, pixel manipulation.
5	3D coordinates, perspective & orthographic projection, point-of-view navigation. **Assn2**.
6	More image & vector outline processing. Lab time.
7	Embedded system multimedia processing using Android, Raspberry Pi, Arduino, or other. **Assn3**.
8	Streaming audio, pulse code modulation, audio file formats, audio I/O libraries.
9	**Mid-term exam**. Introduction to symbol-level (MIDI & OSC) and signal-level digital audio.
10	Java MIDI library for control and music I/O. Visualizing and generating sound. **Assn4**
11	Exceptions, integration of Processing framework into Java. Object-oriented concepts, events.
12	How to animate images and compose video sequences. **Assn5**
13	Consolidation. Work session.
14	Interactive graphics in the Kutztown University Planetarium.
15	**Final exam**, 15% of grade

Each of the **assn[1,5]** above is a planned assignment handout. It will be due during the week of the following assignment handout.