

**TuTh 12-1:20 or 1:30-2:50 PM, Zoom classes & recordings, <http://faculty.kutztown.edu/parson>**  
**IF you don't want to be recorded or are a minor, use PRIVATE ZOOM CHAT to me for questions.**  
**Class-time Zoom link for CSC220: See D2L Course CSC220 -> Content -> Overview for the link.**  
**Dr. Dale E. Parson, [parson@kutztown.edu](mailto:parson@kutztown.edu), Office hours: <https://kutztown.zoom.us/j/94322223872>**  
**Office Hours Monday 1-2, Tuesday 3:30-4:30, Wednesday 12-2, Thursday 3:30-4:30 or by appt.**

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:** C or better in CSC 120 or CSC 123 or CSC 135.

The following textbooks are all optional. 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)

Projects (code, testing, docs, Q&A, no exams) 100% 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. Test it after any changes.

When you think you are finished, read the requirements to avoid missing anything.

I will deduct points for missing documentation comments required in the handout.

#### **Programming project assignment grading criteria**

Grading rubrics will be part of each assignment handout. Late penalty is 10% per each day late, up until I go over the solution. Any assignment turned in after that is worth 0%.

We will use the CS&IT documentation requirements:

<http://faculty.kutztown.edu/parson/CSCDocumentationStandards.pdf>

#### **The academic integrity policy:**

<http://faculty.kutztown.edu/parson/AcademicIntegrityPolicy.pdf>

Please 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.

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.
3	Java data types, methods/classes /interfaces, inheritance, framework, libraries. <b>Hand out assn1.</b>
4	Loading and displaying images, 2D vector images, saving images, pixel manipulation.
5	3D coordinates, perspective & orthographic projection, point-of-view navigation.
6	More image & vector outline processing. Lab time. <b>Assn2.</b>
7	Streaming audio, pulse code modulation, audio file formats, audio I/O libraries.
8	Introduction to symbol-level (MIDI & OSC) and signal-level digital audio. <b>Assn3.</b>
9	Java MIDI library for control and music I/O. Visualizing and generating sound.
10	Distributed system multimedia processing using OSC/UDP datagram protocol.
11	Exceptions, integration of Processing framework into Java. Object-oriented concepts, events. <b>Assn4</b>
12	How to animate images and compose video sequences.
13	Interactive graphics using polar and fractal geometries. <b>Assn5</b>
14	Consolidation. Work session.
15	<b>Final project work session.</b>

Each of the **assn[1,5]** above is a planned assignment handout. It will be due during the week of the following assignment handout. I am trying to pace these to have a 2.5 week turnaround time,  $5 \times 2.5 = 12.5$  weeks, + 2.5 week introduction.

**KU Campus Mask policy:** Resident students must wear a mask anytime they are outside of their personal room and within a building or with anyone else but their roommate. Commuter students must wear a mask anytime they are on campus within a building or with anyone. The course is 100% via Zoom at class time. I will record & post class videos, but want you there at class time.

**PA:** The Secretary's Order requires individuals to wear a face covering, in both indoor public places and in the outdoors when they are not able to consistently maintain social distancing from individuals who are not members of their household, such as on a busy sidewalk, waiting in line to enter a place, or near others at any place people are congregating. Whether inside in a public place or outside, and when wearing a face covering or not, everyone should socially distance at least 6 feet apart from others who are not part of your household.