CSC 480 – Special Topics in Multimedia Programming, Fall 2021

Tuesday Thursday 4:30-5:50 PM, Old Main 158, or remote attendance via Zoom, your choice.
CSC's 400- and 500-level courses may be attended in person or remotely via Zoom.
http://faculty.kutztown.edu/parson **Class time Zoom link is on the course D2L page**.
Dr. Dale E. Parson, Old Main 260, parson@kutztown.edu, 484-646-4296
Kutztown University intends for classes to return to "normal". I insist on maintaining 6 feet of distance from myself in order to reduce the odds of carrying the virus home to my one-year-old granddaughter. I plan to wear a mask in transit. I strongly encourage the unvaccinated to get vaccinated unless a medical condition precludes that. The unvaccinated will not only infect each other, they will also provide an environment in which the virus can mutate to more dangerous strains.

Office Hours Monday 2-4, Wednesday 4-6 (Zoom only), Thursday 10-11 or by appt. All available via Zoom.

This course increases breadth and depth of knowledge for students with experience in object- oriented programming for multimedia systems. Advanced topics include working with camera point-of-view and lighting sources for 3D graphics, recursive shapes and fractals, pixel-level image processing, and animated video composition. Students will program graphical images, video streams, audio signals, physical devices containing electronic sensors and effectors, and combinations of these media. There will be solo and team programming projects.

Prerequisites: CSC220 with a grade of C or better, waived for students who have prepped over summer.
The textbook is optional. If you haven't programmed in Processing, get the book below.

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

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,
F = 0:69. There are no D's in a 400-level course at KU.)

Projects 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.

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.

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.

Any course work submitted to the instructor (including but not limited to assignments, tests, and projects) may be photocopied and retained for the purpose of assessment, accreditation and quality improvement, after removal of any information identifying the student.

W1	Review of Processing, the course, and the planned projects. Importance of reading code.
2	3D camera point of view, lighting, navigation. **Hand out assignment 1**.
3	Extending a graphical remote control on Android for assignment 1.
4	Recursion for generating 2D and 3D graphical shapes. **Hand out assignment 2.**
5	Pixel manipulation and blending. Introduction to thread-safe multithreading in Java / Processing.
6	Image transparency in 2D & 3D graphics. Recursive images.
7	Vector manipulation and texturing. Animated data visualization. **Hand out assignment 3.**
8	Video generation and recording. Open Broadcaster https://obsproject.com/ . Lab time.
9	Student team project selection & team formation. **Hand out assignment 4.**
10	Embedded system installations using Raspberry Pi.
11	Team project phase 1 work & debugging.
12	Team project sanity check. **Hand out assignment 5.**
13	Team project phase 2 work & debugging.
14	Disaster recovery, initial demos of work in progress on team projects.
15	**Final project demonstrations.**