CSC 480 – Special Topics in Multimedia Programming, Spring 2020

MonWed 4:30-5:50 PM, Old Main 158, or remote attendance via Zoom
http://faculty.kutztown.edu/parson Class time Zoom link: https://kutztown.zoom.us/j/346596784
Dr. Dale E. Parson, Old Main 260, parson@kutztown.edu, 484-646-4296
Office Hours Tu 2:30-4:30, Wed 12:00-2:00, Fri 1:30-2:30, or by appointment**.**
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.[1]
Prerequisites: CSC220 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.
Textbook is optional, there is 1 copy on one-day reserve in Rohrbach Library. Buying it is cheap.
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.

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[1] http://faculty.kutztown.edu/parson/fall2019/CSC480_2019.pdf

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.**