COEN 4830 / EECE 5830 – Introduction to Computer Graphics
Fred J. Frigo, Ph.D.
Fall 2023

Course Description:
Introduction to computer graphics algorithm design and implementation; includes considerable actual computer graphics experience. Topics include point-plotting and line-drawing techniques, two-dimensional curve fitting, two-and three-dimensional graphics, clipping, windowing, hidden line removal, modeling, input-output devices, and other topics as future trends dictate.

Additional Details:
We will examine topics related to computer graphics and use simple examples to gain a deeper understanding of the ideas and concepts of this course in such areas as: pixel data, colormaps, volume rendering, animation, dithering, image formats, video formats, compression, metadata, and use of graphics for web pages. Example source code in C/C++, OpenGL, CUDA, & MATLAB will be shared from the class GitHub repository, and students will have access to the necessary hardware and software for implementation. Class notes and lecture recordings will be shared on D2L. Assignments will be given at least 2 weeks prior to the due date.

Location & Schedule:
Class meets in Olin 119 on Tuesdays & Thursdays: 5:00pm-6:15pm

Grading:
Homework and Projects: 60%
Mid-term exam: 20%
Final exam: 20%

Recommended Text:

Steve Marschner, Peter Shirley, *Fundamentals of Computer Graphics 5th Edition*, CRC Press, 2021.
ISBN-13: 978-0367505035
ISBN-10: 0367505037

Other Notes:
Students are required to comply with all policies outlined in the Undergraduate/Graduate Bulletin, including the Marquette University Honor Code and Honor Policy. Attendance is required. Excessive unexcused absences may result in grade of 'WA' or 'WF'.

Office Hours:
By appointment: using Microsoft Teams or in-person Haggerty Hall – Room 235
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