



Be The Difference.

COEN 4830 / EECE 5830 – Introduction to Computer Graphics

Fred J. Frigo, Ph.D.

Fall 2021

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 through actual implementation in such areas as: pixel data, colormaps, volume rendering, dithering, windowing, GPUs, CUDA, Mesa3D, OpenGL, image formats, video formats, compression, metadata, use of graphics for web pages and security vulnerabilities.

Location & Schedule:

Class meets Mondays & Wednesdays: 5:00pm-6:15pm

In person - Haggerty Hall 128 – or live stream available via Microsoft Teams.

Grading:

Homework and Projects: 60%

Mid-term exam: 20%

Final exam: 20%

Recommended Texts: *(available as eBooks from MU library)*

John Hughes, et al., *Computer Graphics: Principles and Practice 3rd Edition*, Addison Wesley, 2014.

ISBN-13: 978-0321399526

ISBN-10: 0321399528

Steve Marschner, Peter Shirley, *Fundamentals of Computer Graphics 4th Edition*, CRC Press, 2016.

ISBN-13: 978-1482229394

ISBN-10: 9781482229394

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

Email: Frederick.Frigo@marquette.edu