# ETGG 2802: Computer Graphics 2

## Class Information

**Semester** Spring 2019

**Time/Day** M/W 2-4:15PM

**Location** ATC 256

**Credit Hours** 3 (2 lecture, 3 lab)

**Prerequisites** ETGG 2801

**Description** This class is a continuation of ETGG2801 and is intended to provide advanced mathematical concepts, techniques, and algorithms for 3D computer graphics. Topics covered may include texture mapping, curves and surfaces, image processing, alpha-blending, bump mapping, anti-aliasing, pixel-shaders, volumetric lighting, and other topics. Lab activities will include various programming projects using a modern 3D graphics API.

## Faculty Information

**Name** James Hudson

**Office** ATC 318

**Office Hours** MTWR 8-9AM

**Office Phone** 740-351-3686

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## Readings

There is no assigned textbook for this class. I strongly suggest paying attention in class and taking good notes!

## Grading System

Labs/Homeworks/In-class work: 100%

## Attendance Policy

Regular attendance is strongly encouraged. If you miss class, you are responsible for any material covered, announcements made, assignments given, or handouts distributed. Make-up exams are only given if prior arrangements have been made with the instructor. Missed homework assignments cannot be made up.

## Grading Scale

The course grading scale is as follows. There is no rounding.

| | | | | | |
|---|---|---|---|---|---|
| 94-100 | A | 80-83.9999 | B- | 67-69.9999 | D+ |
| 90-93.9999 | A- | 77-79.9999 | C+ | 64-66.9999 | D |
| 87-89.9999 | B+ | 74-76.9999 | C | 60-63.9999 | D- |
| 84-86.9999 | B | 70-73.9999 | C- | 0-59.9999 | F |

## Academic Integrity

All assignments are to be your own work. Discussion of problems with others is encouraged, but anything you turn in should be entirely your own work. Referring to external sources (forums, web pages, etc.) for ideas is fine, but ***be sure to cite them!*** If evidence of academic misconduct is found, *all of the individuals involved will be penalized, regardless of who copied from whom.* If you disagree with the penalty received, there is an appeals process outlined in the Student Handbook.

## ADA Statement

Any student who believes he or she may need an accommodation based on the impact of a documented disability should first contact a Coordinator in the Office of Accessibility Services, Hatcher Hall, 740-351-3106 to schedule a meeting to identify potential reasonable academic accommodation(s). Students are strongly encouraged to initiate the academic accommodation process in the early part of the semester or as soon as the need is recognized. After meeting with the Coordinator, students are encouraged to meet with their instructors during the instructor's office hours to discuss their specific needs related to their disability. The accommodation letter will be sent to the instructor and student via secure e-mail prior to the semester start date. Any questions regarding the accommodations on the letter should be addressed to the Coordinator of Accessibility Services. If a student does not make a timely request for academic accommodations and/or fails to meet with the Coordinator of Accessibility Services, a reasonable academic accommodation might not be able to be provided.

## Objectives

Upon successfully completing this course, students should be able to:

- Demonstrate mastery of a variety of advanced 3D graphics concepts
- Write code using a modern graphics API that implements several different advanced 3D graphics concepts

## Topic Outline

The following is a tentative list of topics for the course. This is subject to change.

- Billboards
- Geometry shaders
- Framebuffer Objects
- Blur
- Glow
- HDR lighting
- Lens flare
- Fog
- Noise
- Bump mapping
- Particle systems
- Transform feedback
- Advanced lighting models
- Shadows
- Deferred rendering
- Planar reflections
- Stencil buffer
- Projective textures