Department of Computer Science
CS 4731 – Computer Graphics
Spring 2019, Term C

Table of Contents:

Section I: Course Logistics

Class Time:	MTRF 10:00 – 10:50 am
Class Location:	Fuller Labs, Lower Perreault Hall

Instructor Name:	Joshua Cuneo
E-mail:	jmcuneo@wpi.edu
Office:	Fuller Labs, ground floor, B33 (just around the corner from lecture)
Office Hours:	1:00 pm – 3:00 pm Tuesdays and by appointment

TA Name:	Ashish Gurung
E-mail:	agurung@wpi.edu
Office Hours:	TBA

TA Name:	Paritosh Goel
E-mail:	pgoel@wpi.edu
Office Hours:	10:00 am – 12:00 pm Wednesdays, Fuller Labs, 3rd floor commons

Course Website:
Canvas (https://canvas.wpi.edu/). Please post your questions on the discussion board to avoid excessive emails and so that everyone can benefit from answers given. You may send email to me if you have questions on matters that concern only you.

Recommended Background: CS 2223, CS 2303, and MA 2071. A basic knowledge of JavaScript is useful but not required.

Required Text:
None. This class will rely exclusively on open-source and other freely-available online materials. Required reading and viewing will be posted on Canvas. You may be required to log in with your WPI account to access some materials.

Recommended Text:
WebGL Programming Guide by Matsuda and Lea (ISBN: 978-0321902924). This is an excellent guide to programming in WebGL. An electronic version of the book is freely available through the WPI library.

Other Required Supplies:
All students should have a laptop or tablet (no phones) that they can bring to class every day. This is a paperless class, so all assignments, quizzes, and other documents will be administered and distributed electronically.

Section II: Learning Goals

Course Description:
This course studies the use of the computer to model and graphically render two- and three-dimensional structures. Topics include graphics devices and languages, 2- and 3-D object representations, and various aspects of rendering realistic images. Students will be expected to implement programs which span all stages of the 3-D graphics pipeline, including clipping, projection, arbitrary viewing, hidden surface removal, and shading. Undergraduate credit may not be earned both for this course and for CS 543.

Keys to Success in this Course:
Good education is a shared responsibility. To help you succeed in this course, I will

- ensure that the syllabus and tentative class calendar is available online and that the calendar is updated in a timely manner
- give guidance on what is expected of you to succeed on quizzess and assignments
- post grades in a timely manner
- be on time for class and design class time to help you succeed
- respond to your inquiries in a timely manner
- meet with you outside of class if you need additional help.

For you to succeed in this course, please plan to meet the following expectations:

- Reading is mandatory. Working ahead is encouraged.
- Quizzes will be based on lectures, readings, and a bit of project knowledge, so class attendance is strongly encouraged.
- Working and discussions in small groups is okay. However, each student must turn in different and unique projects.

Section III: Course Schedule

I have posted a tentative course schedule on Canvas. If the schedule needs to be updated during the term, I will announce these changes in class.

Section IV: Grading and Assignments

Grading:

Item	Percent
Projects (4)	80%
Quizzes (5)	20%
Total:	**100%**

A: 89.5%+
B: 79.5% - 89.5%
C: 69.5% - 79.5%
NR: Below 69.5%

NR grades will NOT be assigned upon request.

Projects:
Each project will ask you to apply the course concepts in a WebGL program. Projects are designed to take between one and two weeks to complete. All projects are individual, but students are welcome to share ideas with one another.

Quizzes:
There will be a weekly quiz starting the third week of this course. Each quiz will be about 15 – 20 minutes at the beginning of class. Quiz dates will be announced ahead of time, and a basic study guide will be posted.

Technology Policy:
This class uses WebGL, which is supported by most major browsers, so there is no additional software for you to download and install. However, I strongly discourage use of any browsers other than Chrome, Firefox, and Opera. In particular, please do not use Safari, Internet Explorer, or Microsoft Edge for this class. Since WebGL is based in JavaScript, please ensure you have set your browser to allow JavaScript code to run.

You may choose to develop your code in a Windows, Mac, Linux, or Unix environment. However, all code should run correctly on the latest version of Chrome. Since all code is run in-browser, you may use any IDE you wish for building your programs. However, a popular choice for this class (and my personal recommendation) is WebStorm, which is freely available to all WPI students and can be downloaded from https://www.jetbrains.com/webstorm/. You are not required to use version control in this class, but I strongly encourage it.

All assignments should be submitted electronically on Canvas. Hard copies or submissions on disks will not be accepted. All source code files must be turned in. Your documentation MUST include the structure of your project and what each file contains. Typically, a well-organized README ASCII text file is sufficient, and more details will be given in the assignment

instructions. Insufficient documentation will result in a loss of points. Data files should include a comment line at the start giving your name, the assignment for which it is intended, and the most recent date in which the file was changed. Your README file may be in ASCII text, Microsoft Word, or PDF.

Late Assignment Policy:
Late programming assignments will be penalized 15 points off per day (per 24 hours). Assignments later than 4 days late will not be accepted.

Submitting Work:
You will upload most of your work to Canvas. Please be sure to budget in enough time that you can contact me if you have technical difficulties uploading your work. *Technical problems are not acceptable as excuses for late assignments.*

Grade Change Policy:
You have three days from the posting of a grade to challenge that grade. You must contact me in person or via email with the reason for this challenge. I will not honor any challenges made after this three-day period. However, I will never lower your grade – any grading mistakes made in your favor will be kept.

Section V: Other Course Policies

Academic Respect and Integrity:
- During class, you should silence your cell phone, turn off your music, and refrain from text messaging, emailing, using social media, or playing games.
- You are welcome and encouraged to collaborate with and help other students on non-testing activities, but all submitted assignments must be your own work.

Communication Policy:
I expect you to access course or individual communications at least once per business day.

If you need to speak with me, please use one of the following methods:

1. *Face-to-Face:* Whether before or after class or during my office hours.

2. *E-mail:* When I'm not immediately available in person, e-mail is the best ways to reach me. I expect e-mails to follow the rules of proper e-mail etiquette discussed in this video: https://tinyurl.com/y8v9c2nq.

   I will notify you ahead of time if I am away from my e-mail for more than a couple of days.

Section VI: WPI Policies and Resources

Academic Honesty:
Cheating (a.k.a., academic dishonesty), defined as taking credit for work you did not do or knowledge you do not possess, is strictly forbidden. First offenders will receive a zero grade for the assignment or qiuz in question and an academic dishonesty report will be filed with the Office of Student Affairs. Repeat offenders will receive an NR for the course, and the case will be brought before the campus hearing board (see Student Handbook). Using or submitting code retrieved from online repositories such as GitHub or which was previously submitted by a student in a previous iteration of this class (or CS 543, the graduate version of this course) is considered cheating. Please be aware of the WPI Judicial Policies on academic honesty available at https://www.wpi.edu/about/policies/academic-integrity.

Americans with Disabilities Act Statement:
If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment with [the instructor] as soon as possible. If you have not already done so, students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Office of Disability Services (ODS) as soon as possible to ensure that such accommodations are implemented in a timely fashion. This office is in the West St. House (157 West St), (508) 831.4908.

Section VII: About Your Instructor

I am a graduate of Georgia Tech with a BS in Computer Science, a Minor in Film and Media Studies, and an MS in Digital Media. When not teaching, I enjoy computer science, physics, astronomy and space exploration, science fiction, video production, creative writing, hiking, movies, and traveling, among other interests. I'm always happy to discuss computers or any other topic of interest with students during non-class hours.