

CIS*4800 – Computer Graphics

Course Outline – Winter 2024

Instructor: David Calvert

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Timetable

Lecture: Tuesday, Thursday, 11:30-1:00, MCKN 115.

Course Web Page:

<http://courselink.uoguelph.ca>

Marking Scheme

1. Programming Assignments: 80%
2. Midterm Examination: 20%

Notes:

- All assignments will be posted on the Courselink page.
- Assignment details will be discussed in class. It is your responsibility to learn and understand these details.
- Assignments will be developed using WebGL, three.js, and the Python HTTP server. They will be tested using the chrome browser. It is your responsibility to develop and test your programs using this platform. If the assignment code does not run correctly on this platform then you will lose marks on the assignment.
- There is no group work in the course. It is academic misconduct to collaborate on assignments or represent other student's work as your own. There are penalties for doing this. All submitted code will be electronically checked for cheating. All parties to cheating will be reported to the Director of the School of Computer Science as participants in academic misconduct. See Academic Misconduct in Section VIII of the Undergraduate Calendar.
- Code which is submitted and does not execute will be given a mark of zero.
- Failure to submit assignments correctly will result in a substantial loss of marks. Assignments will be submitted through the Courselink site.

Lecture Topics

1. Geometry and matrix algebra for computer graphics
2. Geometric modelling

3. Visible surface detection
4. Curves and surfaces
5. Rendering and illumination models
6. Vertex and Pixel shaders

Semester Schedule

- Assignment 1 due Friday, Jan. 26
- Assignment 2 due Friday, Feb. 9
- Midterm – Tuesday, Feb. 13 in class
- Assignment 3 due Friday, Mar. 8
- Assignment 4 due Friday, Mar. 22

Calendar Description

This course is an introduction to computer graphics. Topics include graphics programming concepts, geometrical transformations, viewing 3-D projections, raster graphics, sculptured surfaces, visible surface determination, image processing and other special topics. Practical issues will be covered by assignment using currently available graphics equipment.

Prerequisite(s): (CIS*3750 or CIS*3760), CIS*3110

E-mail Communication

As per university regulations, all students are required to check their `jmail.uoguelph.ca` e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id number, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration.

Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The regulations and procedures for course registration are available in their respective Academic Calendars.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance. More information: www.uoguelph.ca/sas

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

Recording of Materials

Presentations which are made in relation to course work—including lectures cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.