
Course Outline

Introduction to computer game programming interfaces. Topics may include: game balance and level design; storytelling and narrative; basic game architecture; sprite-based games and isometric games; representation of scenes; user interaction; architecture of game consoles; development tools for game consoles; interaction with game peripherals.

Course Information

Instructor Name
Contact Information

Robert Collier
robert.collier@scs.carleton.ca

Lecture Hours
Tuesdays and Thursdays
1:05 – 2:25
Southam Hall, Room 624

Office Hours
Mondays
10:00 – 12:00
Herzberg Laboratories, Room 5326

Course Website
<https://www.carleton.ca/culearn/>

Course Forum
<https://www.carleton.ca/culearn/>

Recommended Textbook

There is one (1) **recommended** textbook: **Schell, J. (2014). The Art of Game Design: A Book of Lenses**

*(n.b., **this textbook is not required** and no textbook readings will be assigned)*

Assessment Scheme

Your performance in this course is assessed using several components. These include a collection of **ten (10) mandatory weekly tutorials** (beginning the week of January 15th), **four (4) assignments**, **two (2) quizzes** (on Thursday, February 14th and Thursday, March 28nd, respectively), and a **final examination** (to be scheduled by the registrar). The grades you achieve will be determined using the scheme described below.

Tutorials (1% each)	10 %	Assignments (10% each)	40 %
Quizzes (10% each)	20 %	Final Examination	30 %

Tutorials are mandatory and **attendance is recorded** at the beginning. You must **attend the tutorial in which you are registered** – you will receive zero if you attend a tutorial other than the one in which you are registered. You may not work on an assignment during the tutorial, and **anyone not working on the tutorial will be asked to leave and will receive zero**. You are **not permitted to work on the tutorial in advance**.

Assignments are mandatory and you will **use cuLearn to submit your assignments**. The assignment component of your final grade is computed from the score you receive on each assignment; **the lowest assignment grade will not be "dropped"**. You are expected to work on your assignments consistently once they are released (uploading your progress at least daily). As a result, **you will never be granted an exemption from an assignment, even for a legitimate medical reason**.

Quizzes are mandatory and will always be **closed-book**.

It is your responsibility to ensure that your quiz, tutorial, and assignment marks posted to cuLearn are correct within two weeks of the date the marks were released. Concerns or complaints about the grading of must be communicated (first to the teaching assistant, then, if the result is unsatisfactory, to the instructor) within that time. **To clarify, even if you notice an error in one of your quiz, tutorial, or assignment marks, if you do not communicate it within two weeks then it will not be given consideration.**

Course Outline

Learning Outcomes

If a student attends every lecture and completes every assignment and tutorial, then by the end of this course that student should be able to:

- Use **Python 3** and the **pygame** library to **write computer games**
- **Define** a game and **describe** the **different types** of games
- **Demonstrate** a basic understanding of the following topics:
 - the **game loop**, the **MDA framework**
 - the **taxonomy of fun**
 - **artificial intelligence**, **finite state machines**
 - **probability** and **combinatorics**
 - the **hero's journey**, **worldbuilding**
- **Explain** the **principles** of game design

Important Considerations

Late assignments are never accepted for any reason. Assignments submissions are handled electronically (i.e., through cuLearn) and **there is no "grace period"** with respect to a deadline - **an assignment submitted even one minute after the deadline is late and will receive a mark of zero.**

Technical problems do not exempt you from this requirement, so if you wait until the last minute and then have issues with your connection, you will still receive a mark of zero. Consequently, you are advised to:

- **periodically upload you progress** (i.e., upload your progress at least daily)
- attempt to **submit your final submission at least one hour in advance** of the due date and time

For each assignment, you will be submitting one or more files that contain source code, and these files must be given the correct filename and be provided in the specified format. **Assignments that are incorrectly named or in the incorrect format will be penalized and may receive a mark of zero.**

If any of the source code files you submit does not run it will receive a mark of zero. Consequently, **after you upload your submission** to cuLearn you must **re-download it immediately** and ensure that:

- **your submission is the correct type of file and has the correct filename**
- **each of your source code files can be run** from the terminal on our **official virtual machine**
- **each of your source code files can be viewed** in a text editor (for marking purposes)

You are expected to **demonstrate good programming practices at all times** and **your code may be penalized if it is poorly written**. You are also expected to **do the necessary preparatory work** (i.e., devising an algorithm) before you start coding. **You may be asked to present either pseudocode or a flowchart before you will receive any assistance** from the instructor or a teaching assistant.

Students with an **illness on the day of a quiz or tutorial might be granted an exemption** only if they provide an **original hardcopy** of the **Carleton University Medical Certificate** (http://carleton.ca/registrar/wp-content/uploads/med_cert.pdf) that has been completed and signed by a physician. **Please note that a student cannot, for any reason, be exempted from both quizzes.** Furthermore, because assignment specifications are posted well in advance of their due dates, **illness does not excuse a student from completing an assignment.** No provision is made for missed assignments, and no extra credit assignments will be available.

Course Outline

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca. The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions or equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

You must also read:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Additional Notes

Including the time spent **attending lectures** and **completing tutorials**, students can expect to spend **at least ten (10) hours per week on this course**. Students are responsible for **all course materials**, including lecture notes, tutorial exercises, and all materials discussed in class and on any of the official discussion boards.

Students are asked to **pose all questions related to course content using the official discussion boards** on cuLearn; **students should not email** the instructor directly **unless the question contains confidential information** or is of a personal nature.

The instructor will **attempt to answer every student email received within three business days** of the time the message was received, **unless the email requests information already posted** on cuLearn or in the course outline. To ensure that all announcements are received, **students are expected to check their email on a daily basis**.

All materials created for this course (including, but not limited to, lecture notes, in-class examples, tutorial exercises, assignments, examinations, and posted solutions) **remain the intellectual property of the instructor**. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. **Reposting, reproducing, or redistributing any course materials**, in part or in whole, without the written consent of the instructor, **is strictly prohibited**.

Plagiarism Policy

There is a separate plagiarism policy document for this course that is located on cuLearn. **Students must read this document thoroughly** and **must agree to adhere to this policy** (and to all policies stated in this course outline) **before the assignment resources will be made available**.

In the event that a student has been **found to have committed an instructional offence**, a penalty will be applied to that student's final grade. **If the penalty applied** by the Office of the Associate Dean is **less than the total value of the assignment**, the **remaining weight is shifted onto the weight of the final exam**. Consider the following example: if the course has an assignment worth 10% and a final worth 40% and a student plagiarizes and receives a 50% deduction to his or her assignment, their final exam would be worth 45% of the final mark and the **plagiarized assignment would be worth nothing**. To clarify, 50% of the 10% allocated to the assignment was lost and the remaining 50% of the 10% allocated to the assignment was shifted to the final.

Students are invited to discuss any concerns with the instructor at the earliest opportunity.

Course Outline

University Policies

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar.

Plagiarism

As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science.

Unauthorized Co-operation or Collaboration

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable) at <http://www2.carleton.ca/pmc/new-and-current-students/dates-and-deadlines>

Religious Obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Pregnancy Obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Medical Certificate

The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations or assignments in undergraduate courses. To access the form, please go to <http://www.carleton.ca/registrar/form>