Carleton University School of Computer Science

Intensive Game Development Project

COMP4900

Draft Course Outline (Summer 2022)

Instructor:	Connor Hillen	**Time:**	Tue. Thu. 18:05 – 20:55
Pronouns:	He/Him	**Email:**	connorhillen@cmail.carleton.ca
Site:	http://brightspace.carleton.ca/	**Room:**	TBA, Refer to Public Schedule

1. About the Course

Course Description: In this course, all students will work together as a single group to develop a game using modern game engines. Students will be assessed on their ability to work together as a group, set and achieve reasonable expectations, and incrementally design and implement a game at the guidance of the instructor. The first term of the course consists primarily of lectures on game design and project management, followed by meetings, planning, and work sessions to emulate realistic work practices.

Office Hours: 17:00 - 18:00 (Tue. Thu.) in HP5151 (prior to the lecture). If the course moves to online (see: course modality) office hours will be held on Zoom by request only.

Modality: This course is scheduled for term-long in-person attendance, and students are expected to be able to attend; however, this course allows for long-term flexibility. If the class finds value in holding meetings online as the term progresses, we can shift the meetings and office hours to be held online via Zoom.

Attendance: Attendance is critical in this course, and some assessments will be completed **during class times**. The majority of lectures consist of meetings necessary for the collaboration and completion of the project. Participation in course meetings - both quantity and quality - will be assessed in peer evaluations. If you cannot attend for any reason, you must inform the team and instructor as early as possible to seek ways of making up the lost time.

Textbooks: There is no mandatory textbook for the course, but a few texts referenced within the course are listed below for your interest. These are available as e-books via the Carleton library or their official websites. Each of these cover a different topic which may be useful to know in the course and may be occasionally referenced. More references may be made available on Brightspace.

- **(O'Reilly Books)** Clinton Keith, *Agile Game Development with Scrum*, Addison-Wesley Professional 2nd Edition, 2020.
- **(O'Reilly Books)** Jesse Schell, *The Art of Game Design: A Book of Lenses*, A K Peters/CRC Press 3rd Edition, 2019.

Online Resources: Class notes, links to software, links to additional resources, and project submissions will all be on the Brightspace course page. Additional external tools may be used at consensus of the class. Many resources may be posted on Brightspace, but you will not be expected to know all of the content from every resource. Most resources will be there for your interest unless otherwise specified.

Prerequisites: COMP 2401, COMP 2402, and COMP 2404. From these courses, you are expected to have some proficiency writing code in C-like languages, basic software planning, as well as selecting and applying data structures. You are expected to have some experience with games or be able to get some experience with games.

Objectives: The goal of this course is to gain practical game design and development experience using modern project management techniques and industry standard tools. By the end of this course, you should have realized a completed, playable, and polished game and have an understanding of how agile project management methods work in practice during a short game development life cycle.

Topics Covered: The first few weeks of the course will focus on teaching fundamental concepts of game design, game analysis, creativity, agile methods in software development, and the rapid prototyping of games. After this, much of the course will focus on how agile methods are applied to game development. Following this material, the course lectures will be used to gain practical experience applying agile techniques to the development of a product by holding meetings and work sessions in-lecture.

Self-Learning: This course will **not** cover the programming of games or deeply discuss how game engines work. Due to the open and highly collaborative nature of this course, students are expected to self-learn any missing technical knowledge via online tutorials, experimentation, and support from fellow classmates. Be prepared to allocate some time to learn outside of the course and to "learn on the job".

Grading: Students will be expected to perform weekly contributions to the course material. The course has two individual assignments outside of the project scope: The first is meant to focus our attention to game design and practice implementation skills. The next is a practical evaluation of Agile skills to identify difficulties or gaps in knowledge prior to the team working together in an Agile environment. The project is broken into multiple sections: First, students will produce low-fidelity prototypes to "find the fun" of the project. Following this, students will take what they've learned and produce a project design proposal to answer open questions about the design. This is **flexible**, and will be updated through the term. After the midterm break, students will submit short, weekly progress report quizzes to reflect on their work and course knowledge. External playtesters will be brought in to evaluate the project, and each of these milestones is assessed based on the team's criteria of completeness, the goal of the current milestone, and overall achievement. There will be two peer evaluations to hold students accountable to each other; students will be asked to evaluate each other and self-reflect. The first evaluation will be based on initial design contributions, worth 5%, and the second will be worth 10% based on contributions in the second half of the term. Finally, the game will be assessed based on "fun" and completion criteria, such as clarity of goals, novelty of core interactions, and aesthetic harmony.

Individual Prototype (Indv., Due May 12) 5%
Scrum Skills Assignment (Indv., TBD) 10%

Project Breakdown (85%):
Low-Fidelity Prototypes (Group, TBA) 5%
Proposal (Group, TBA) 5%
Progress Reports (Indv., 5x2% Due Weekly Jul 12 - Aug 10) 10%
Playtest Milestones (Group, Count, Dates TBA) 20%
Peer Evaluations (5% Due Jun 16, 10% Due Aug 16) 15%
Final Assessment (Group, Due Aug 12) 30%

Collaboration Policy: For individual assignments, no collaboration with other students is allowed. For the course project, students will be working together as a single group and are expected to divide the work equally and fairly.

2. SCS Support

SCS Computer Laboratory: SCS students can access one of the designated labs for your course. The lab schedule can be found at: `https://carleton.ca/scs/tech-support/computer-laboratories/`. All SCS computer lab and technical support information can be found at: `https://carleton.ca/scs/technical-support/`. Technical support is available in room HP5161 Monday to Friday from 9:00 until 17:00 or by emailing SCS.Tech.Support@cunet.carleton.ca

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

3. COVID-19

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are a number of actions you can take to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

Feeling sick? Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you must follow Carleton's symptom reporting protocols.

Masks: On the recommendation of Ottawa Public Health, Carleton will be maintaining the mandatory COVID-19 Mask Policy until further notice. The policy requires masks to be worn in all university buildings, including offices, classrooms and labs.

Vaccines: Further, while proof of vaccination is no longer required as of May 1 to attend campus or in-person activity, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible, and submit their booster dose information in cuScreen as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the University's COVID-19 website and review the Frequently Asked Questions (FAQs). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca.

4. University Policies

For information about Carleton's academic year, including registration and withdrawal dates, see Carleton's Academic Calendar.

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. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found here.

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. Standard penalty guidelines can be found here.

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: If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC 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 your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the Paul Menton Centre website.

Religious Obligation: Please contact your instructor 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. More details can be found here.

Pregnancy Obligation: Please contact your instructor 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 Equity Services.

Survivors of Sexual Violence: As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: `https://carleton.ca/sexual-violence-support`

Accommodation for Student Activities Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor 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, see the Senate Policy on Accommodation for Student Activities (PDF, 25KB)