COMPUTER SCIENCE DEPARTMENT
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ICS 123
GAMING AND GRAPHICS CONCEPTS

COURSE OUTLINE

Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

Calendar Description on the web:

http://camosun.ca/learn/calendar/current/web/comp.html

1. Instructor Information
    - Instructor: Jason Cumiskey
    - Location: TEC249
    - Phone: 250-370-4652
    - Email: cumiskey@camosun.bc.ca
    - Course Website: http://online.camosun.ca (D2L)

2. Intended Learning Outcomes
    - Design and develop a graphical user interface with interface objects in a select development environment;
    - Use written, oral, and electronic communication to convey technical information effectively;
    - Use knowledge of game space and scenes to design, implement, test and debug a simple interactive game; and
    - Apply professional standards to ensure legal and ethical use of tools and resources in the development environment.

3. Basis of Student Assessment(Weighting)

Quizzes (approx. 6)	35%
Labs (approx. 10)	50%
Project	15%
Total:	100%

4. Required Materials
    a) Required: **Thumb (Flash) Drive preferably USB 3 of at least 8GB
    b) Texts (Not Required)

    1. **Gibson, Jeremy.** *Introduction to Game Design, Prototyping, and Development.* New Jersey : Pearson Education, Inc., 2015. ISBN-13: 978-0-321-93316-4.

    2. **Hocking, Joseph.** *Unity in Action.* New York : Manning Publishing Co., 2015. ISBN 13: 978-1-617292-32-3.

    c) Online Resources
    - https://msdn.microsoft.com/en-us/library/618ayhy6.aspx Microsoft's C# Reference
    - https://msdn.microsoft.com/en-us/library/67ef8sbd.aspx Microsoft's C# Programming Guide
    - http://unity3d.com/learn/tutorials Unity Video Tutorials (Caution: some outdated, some more advanced)
    - http://docs.unity3d.com/Manual/index.html Unity Online Manual

    d) Software
    - Unity 5.5
    - Gimp 2.8

    e) Other
    - Other resources may be provided as the course progresses in the form of online links or handouts.

5. Course Policies and Guidelines
    - Late lab or other assignments are <u>not accepted</u> unless due to medical emergency.
    - Missed quizzes, term tests, final exam are <u>not accepted</u> unless due to medical emergency.
    - Any marks appeal must happen within **7 days** of a mark being assigned.

6. Learning Support and Services for Students
    There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Student Services or the College web site at http://camosun.ca.

7. Student Conduct Policy
    There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section: http://camosun.ca/about/policies/policies.html

8. Grading Policy

- **Standard Grading System (GPA)**

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a 'D' grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

- **Temporary Grades**

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at http://camosun.ca/about/policies/education-academic/e-1-programming-&-instruction/e-1.5.pdf for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	*In progress*: A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	*Compulsory Withdrawal*: A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

9. Tentative Course Schedule

Note: This is only meant as a tentative weekly guide on what topics will be studied in the course. *The schedule can change at any time based on students' progress through the course and/or other incidentals.*

WEEK	LECTURE TOPIC	LAB TOPIC
Week 1 (Jan. 9 – Jan. 13)	• Course Intro + Game Industry • Bartok: Game Design Exercise • Game Design and Prototyping	No Lab
Week 2 (Jan. 16 – Jan. 20)	• What is Unity? Why Unity? • The Unity Visual Editor • Unity Scripts	Lab 1 – Intro to Unity
Week 3 (Jan. 23 – Jan. 27)	• The 3D Coordinate System • Lighting in Unity • Game Objects and Components	Lab 2 – Creating and Lighting a 3D Space
Week 4 (Jan. 30 – Feb. 3)	• Local vs. Global Space • Movement in Unity • Collision Detection	Lab 3 – Adding a Player to a 3D Space
Week 5 (Feb. 6 – Feb. 10)	• Gravity in Unity • Raycasting and Coroutines • HUD, Unity's Asset Store	Lab 4 – Collisions, Enemies, and Projectiles
Week 6: Family Day and Reading Break – No Classes		
Week 7 (Feb. 20 – Feb. 24)	• AI, Spherecasting • FSMs, Unity Prefabs	Lab 5 – AI and Prefabs
Week 8 (Feb. 27 – Mar.3)	• Whiteboxing, Texturing • Skyboxing, Particle Systems	Lab 6 – Making it Pretty
Week 9 (Mar. 6 – Mar. 10)	• Retained Mode GUI • Expanding the HUD using 2D Sprites	Lab 7 – 2D GUI and Responding to Events
Week 10 (Mar. 13 – Mar. 17)	• Camera Position • Camera-relative movement • Animating the Player	Lab 8 – Moving from first-person to third-person
Week 11 (Mar. 20 – Mar. 24)	• Colliding with Items • Collecting Items • Managing Inventory	Lab 9 – Interacting with Items
Week 12 (Mar. 27 – Mar. 31)	• Optional: Multiplayer Networking • Optional: Sound Effects and Music	Lab 10 – Deploying Your Game to Windows
Week 13 (Apr. 3 – Apr. 7)	• Optional: Deploying to IOS? and Android	Project
Week 14 (Apr. 10 – Apr. 13) (Fri Apr. 14 is holiday)	• Project	Project