Course Syllabus

  [✎ Edit](#)

CSS385: Introduction to Game Development

UW1-102

M/W 5:45pm-7:45pm

COVID-19 Related Resources

[Face covering policy: (https://www.uwb.edu/academic-affairs/covid-policies)](https://www.uwb.edu/academic-affairs/covid-policies) As we return to in person instruction, I want to acknowledge the difficulties of this past 18 months and inform you of my expectations for our safety as we begin this class together. To ensure the health and safety of the University campus community, face coverings are required to be worn indoors when other people are present regardless of vaccination status, and in all public and common areas, such as lobbies, hallways, stairways, restrooms, elevators, and classrooms. Eating and drinking in the classroom will not be permitted This requirement is in accordance with the University of Washington COVID-19 Face Covering Policy. For the purposes of this policy, a face covering must: Fit snugly against the sides of the face; completely cover the nose and mouth; bandanas and gators are not considered face coverings for this policy. Students who do not wear a face mask will be asked to leave the classroom. If you forget your face mask or refuse to wear one, I will ask you to leave the classroom. Repeated failure to wear a face covering may result in you being referred to the Student Conduct Office for possible disciplinary action. I hope that we can all agree to keep each other safe by wearing our face masks.

This is a in-person class. If necessary, the class will continue as remote learning. In all cases, you can join the class **[via zoom at this link (https://washington.zoom.us/j/96978292970?pwd=ZzA2OVBaNUpUS1JCc21jRmNyMWhxQT09)](https://washington.zoom.us/j/96978292970?pwd=ZzA2OVBaNUpUS1JCc21jRmNyMWhxQT09)** , I will upload the **[recordings after class to this folder (https://drive.google.com/drive/folders/1UqywPc6M5w4ZluK6jDi-2BTkSySEzJC1)](https://drive.google.com/drive/folders/1UqywPc6M5w4ZluK6jDi-2BTkSySEzJC1)** . Here are some **[details of Zoom remote learning (https://docs.google.com/document/d/1Wutj7AOKPEvDakgK5lk2M23BCemtYQ5glKLghI0df5M/edit#heading=h.gk1fw0cv0pr9)](https://docs.google.com/document/d/1Wutj7AOKPEvDakgK5lk2M23BCemtYQ5glKLghI0df5M/edit#heading=h.gk1fw0cv0pr9)** .

UW Bothell Coronavirus (COVID-19) resources: **[https://www.uwb.edu/coronavirus (https://www.uwb.edu/coronavirus)](https://www.uwb.edu/coronavirus)**

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Office: I will be at **[this Zoom URL (https://washington.zoom.us/j/93158292951?pwd=bE1wc3RKUHdabkdWVGxWak44cHlKUT09%20)](https://washington.zoom.us/j/93158292951?pwd=bE1wc3RKUHdabkdWVGxWak44cHlKUT09%20)** during office hours.

Office Hours: Mon 12-2pm (or email for appointment)

Course Description

This class examines the fundamental issues in designing and developing computer video games. We begin with examining technical issues in developing a game including: software architecture, interaction model, mathematics concepts, real-time approximation for Newtonian physics, elementary special effects, and algorithms relevant to supporting in-game logic. After the technical knowledge, in the second half of the quarter we examine the elements in games design including: world setting, game play, and interface; and the procedure of designing games including: conceptualization, prototyping, and playtesting.

The first half of the class is programming intensive where students practice and implement the technical knowledge learned by developing games individually. After the mid-quarter, students will work in groups to design and implement their own games. The second half of the class involves group work, presentations, and active class participation in games evaluation.

Prerequisites: 2.0 in CSS 342 or equivalent.

Grading

Programming Assignments (4)	35%
Weekly Assignments + Classroom Participation	10%
Final Game	55%

Books

Required Textbook: *None.* Reference materials will be provided.

Reference Textbooks: (Posted off **Files/Reference Readings**)

- *Introduction to game development*, S. Rabin (Ed.), Boston, MA, Charles River Media, 2005.
    - **A1:** Bakie, R. T. (2005). A brief history of video games. In S. Rabin (Ed.), *Introduction to game development* (pp. 1-36). Boston, MA: Charles River Media.
    - **A2:** Bakie, R. T. (2005). Games and society. In S. Rabin (Ed.), *Introduction to game development* (pp. 37-50). Boston, MA: Charles River Media.
    - **A3:** Jarvinen, A. & Holopainen, J. (2005). Ludology for game developers: An academic perspective. In S. Rabin (Ed.), *Introduction to game development* (pp. 51-68). Boston, MA: Charles River Media.
    - **A4:** Falstein, N. (2005). Understanding fun: The theory of natural funativity. In S. Rabin (Ed.), *Introduction to game development* (pp. 69-97). Boston, MA: Charles River Media.
    - **A5:** Barry, I. (2005). Game design. In S. Rabin (Ed.), *Introduction to game development* (pp. 99-160). Boston, MA: Charles River Media.
- *Fundamentals of Computer Graphics*, P. Shirley, Wellesley, MA, A. K. Peters, 2005.

- **B1:** Sung, K. (2005). Building interactive graphics applications. In P. Shirley (Ed.), *Fundamentals of computer graphics* (pp. 401-449). Wellesley, MA: A K Peters, Ltd.
- *Programming game AI by example*, M, Buckland, Plano TX, Woodward Publishing Inc, 2004.
  - **C1:** Buckland, M. (2004). A math and physics primer. In *Programming game AI by example* (pp. 1-41). Plano, TX: Woodward Publishing, Inc.
  - **C2:** Buckland, M. (2004). State-driven agent design. In *Programming game AI by example* (pp. 43-83). Plano, TX: Woodward Publishing, Inc.
- Tricks of the Windows game programming guru, Indianapolis, IN, Sams Publishing, 2002.
  - **D1:** LaMothe, A. (2002). Playing God: Basic physics modeling. In *Tricks of the Windows game programming gurus* (pp. 803-878). Indianapolis, IN: Sams Publishings.
- Game Design Workshop a play centric approach to creating innovative games, Tracy Fullerton, Burlington, MA, Morgan Kaufmann, 2008.
  - **E1:** Chapter 7: Prototyping
  - **E2:** Chapter 9: Playtesting
  - **E3:** Pages 349-362
  - **E4:** Page 394-402
- *Game Design and Development*, E. Adams and A. Rollings, Berkeley, Upper Saddle River, NJ, Pearson Prentice Hall, 2007.
  - **F1:** Chapter 4: Game world
  - **F2:** Chapter 8: Creating the User Experience
  - **F3:** Chapter 9: Game play

Approximated Schedule

Week	Topics	Reading	Date	Notes (subject to changes)
1	Intro + Game Objects	A1-A3, B1	Sep 29	Assign: MP1 + Fav Game
2	**My Fav Game** (Part-1) + Autonomous Behaviors **My Fav Game** (Part-2) + Find your teams	C1, C2	Oct 4 Oct 6	**Due**: MP1 + Fav Game Assign: MP2 + Form your teams
3	Game World: Camera, State, Stat Making games fun	D1, F1, F2	Oct 11 Oct 13	**Due**: MP2 Assign: MP3
4	Brainstorming Randomness, Autonomous behaviors, Lerp	F3, A4, E4, A5	Oct 18 Oct 20	**Due**: MP3 + ***Finalize team details*** Assign: MP4 + Final Project

5	Guest lecturer: Telling stories. **Dave Mongan (https://www.linkedin.com/in/davemongan/)** (Narrative Director, **Microsoft Xbox Game Studios (https://www.xbox.com/en-US/xbox-game-studios)**) [**This will be a Zoom lecture**] **Tools we use (part-1) +** Final Project Expectations + Proposal + Prototypes	E3, E1	Oct 25 Oct 27	**Due**: MP4
6	**Pitch your games** **Tools we use (part-2)**		Nov 1 Nov 3	**Due**: Game Proposal + GDD + Tools Talk
7	**Digital prototype demo** **Tools we use (part-3)**	E2	Nov 8 Nov 10	**Due**: Prototypes +GDD + Tools Talk
8	**Game demo** Playtesting and what is to come		Nov 15 Nov 17	**Due**: Demo +GDD + Tools Talk
9	**Alpha playtest** Feedback for Alpha		Nov 22 Nov 24	**Due**: Alpha + Feedback for others
10	**Beta playtest** Guest lecturer: The other (outside of coding) sides of Videogame Development. **Shawn Seavers (https://www.linkedin.com/in/shawn-seavers-204573/)** (Producer, **Big Fish Games (https://www.bigfishgames.com/us/en.html)**)		Nov 29 Dec 1	**Due**: Beta + Feedback for others
11	**Retro talk:** how is it going, how did it go? Guest lecturer: To be confirmed		Dec 6 Dec 8	**Due**: Retro talk
12	Final Game Eval		Dec 13	**Due**: Final game

Game Engine

We will be working with the **Unity game engine (https://unity.com/)** . Please refer to **this help page (https://myuwbclasses.github.io/CSS385/LectureNotes/UnityHelp.html)** to get started on Unity.

Submitting Programming Assignments (MPs)

 Submitting Source Code: You will submit your source code of each programming assignment (or machine problem, or mp) and the grader will run/test your submissions. We will be using the canvas facility (refer to the course web-site for the canvas submission link).

- **Source code:** Zip up your entire project, the requirement is that we need to be able to run your submission as a Unity project. Please refer to what I provide you in the course materials, we want your entire project. If we cannot open your project from the Unity Hub, you will lose significant credit for the assignment.
- **Folder name:** Use your first and last name and mp# as the name of your folder and project name. If the name of your game do not tell us who you are, you will lose credit for the assignment.
- Submit as many times as you wish, the grader will only look at the last one received before the deadline. Please **do not** submit hard copies of your program. Let's safe some trees, we will look at your source code electronically.

There is a test assignment for you to *try things out*. Please do try it before the first MP due date! If I do not see a test submission *and* you have trouble submitting your first assignment at the last minute, I **will not** help you. I can only help those who tried.

In addition, and **very importantly**, you should always download your submission, un-zip/run/open-in-editor to ensure your submission is correct. Remember, the grader will download your submission, unzip, double-click on the .exe file to run. If the grader cannot download, double click and run your program, you will receive a zero. You have been warned.

You are responsible to ensure that the files you submitted are correct. On the due date of the mp, the corresponding directory will be **close** at precisely the due time. After which, you **will not be able to submit your work**! We **will not** accept submissions via emails. You are responsible to ensure that the files you submitted are correct. Minor submission mistakes (e.g. missed a small file) will result in significant deduction from the assignment. Major submission mistakes (e.g. forgot to include a major source code file) will be treated as incomplete assignment and you will get **0%** for the assignment. On a case-by-case basis, I will decide if a submission mistake is minor or major. There will be no exceptions!

If there is an emergency and/or personal difficulty, please talk to me in person. Remember to document your code, and practice the good programming skills.

Sharing of Your Final Projects

I am proud of students' accomplishments and would very much like to share them, if allowed. Towards the end of the quarter I will inquire for your permissions to share your final projects publicly, e.g., **via websites similar to this (https://myuwbclasses.github.io/CSS385/)** . At that point, you should feel free to decide to grant me the permission or not. Your decision on this will have absolutely no impact on your performance in this class. I will respect your decision and only post your results if you grant me the permission.

General Policies

Assignment Deadlines: There will be no late assignments accepted. Let me put this in another way, there will be no late assignments accepted. This is the case for both homework assignments and machine problems. Pay attention to the deadline on the assignments (including the time), there will be no late assignments accepted. Let me explain this again, there will be no late assignments accepted. I am actually a reasonable person, come talk to me about exceptional circumstances. You know the deadlines now please plan ahead.

Lateness to classes: It does not bother me, just don't disturb anyone. If you want to leave early, it would be very nice if you could give me advance warning. If that's too much trouble, or if you forgot, don't worry, just don't disturb anyone and leave quietly.

Commitments and such: I am usually very easy going. I like relaxed classrooms for learning and will try my best to create such an environment. Please do not confuse relax environment with relax requirements. I work hard, and expect students to work as hard. On average, each percentage of your assignments should represent one-two hours of outside-of-class time. For example, if an MP worth 8%, then on average, you will probably need about 10-15 hours to finish this

assignment. Please use this as a reference and let me know if you are spending too much time on the assignments. If most of you are experiencing the same problem, then we will have to adjust the amount of work. Please consider if you have the time this quarter for this class. If you do have the time, please stay in this class, I will work hard and try my best to make this class a worthwhile learning experience for you.

Group Assignments: The final project is a group assignment. You *must* form groups of two (or three if there is a left over person) to work on the final project. No groups can be less than two members.

Problems

If you have any problem with this course, please talk to me as soon as possible. I would like to help in any way I could, but I have to know there is a problem. If you fall behind in this class, it will be difficult to catch up.

Special Needs

If you believe that you have a disability and would like academic accommodations, please contact **Disability Resources for Students (http://www.uwb.edu/studentservices/drs)** (UW1-175) at 425.352.5307 or at **drs@uwb.edu (mailto:drs@uwb.edu)** . In most cases, you will need to provide documentation of your disability as part of the review process. I will coordinate with the University to ensure that the appropriate accommodations are made in this class.

Access and Accommodations: Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact **Disability Resources for Students (http://www.uwb.edu/studentservices/drs)** (UW1-175) at 425.352.5307 or at **drs@uwb.edu (mailto:drs@uwb.edu)** . DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s), and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

For Our Veterans: If you are a student who has served in our nation's military forces, welcome home, and thank you for your service. I hope that you feel comfortable enough to confidentially self-identify yourself to me so I can help you make a successful transition from the military to higher education.

Religious Accommodation Policy: Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at **Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/)** (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/) . Accommodations must be requested within the first two weeks of this course using the **Religious Accommodations Request form (https://registrar.washington.edu/students/religious-accommodations-request/)** (https://registrar.washington.edu/students/religious-accommodations-request/) .

Academic Conduct

Student Code of Conduct: **http://apps.leg.wa.gov/WAC/default.aspx?cite=478-120 (http://apps.leg.wa.gov/WAC/default.aspx?cite=478-120)** :

 "*The university is a public institution having special responsibility for providing instruction in higher education, for advancing knowledge through scholarship and research, and for providing related services to the community. As a center of learning, the university also has the obligation to maintain conditions conducive to freedom of inquiry and expression to the maximum degree compatible with the orderly conduct of its functions. For these purposes, the university is governed by the rules, regulations, procedures, policies, and standards of conduct that safeguard its functions and protect the rights and freedoms of all members of the academic community.*"

…

"*An instructor has the **authority to exclude a student from any class session** in which the student is disorderly or disruptive. If the student persists in the disorderly or disruptive conduct, the instructor should report the matter to the dean of the school or college, or, at the University of Washington Bothell and Tacoma campuses, to the dean or director of the program in which the student is enrolled.*"

Academic Integrity and Plagiarism: See **http://www.uwb.edu/studentservices/academicconduct (http://www.uwb.edu/studentservices/academicconduct)**

for crucial information regarding academic integrity. The library also has an extremely useful website with resources at **http://libguides.uwb.edu/ai (http://libguides.uwb.edu/ai)** . You are responsible for knowing what constitutes a violation of the University of Washington Student Code, and you will be held responsible for any such violations whether they were intentional or not. Plagiarism is one of the most common violations of academic integrity, so please pay attention to both the web information and when your instructor explains all of this in class. In short, do your own work, and clearly cite all your sources. If you are unsure, ask for help!

Privacy: The opinion you expressed (in class discussion, in written assignments, on our course discussion board), are yours. None of this information will be shared with anyone, not even your parents.

Other potentially useful/important information

 Inclement Weather: Please check if the campus may be closed due to weather. Information about suspension of operations will be made public and available through the media. Students can learn of campus operations status from the website or by calling the Campus Information Hotline 425.352.3333. You may also sign up with an alert system that will contact you via email or text message if classes are canceled. For more information on the alert process, please see **https://www.uwb.edu/emergency (https://www.uwb.edu/emergency) (http://uwb.edu/alert)** . Class activities will be rescheduled as needed.

Student Support Services:

IT Helpdesk: **IT@uwb.edu (mailto:IT@uwb.edu)** , 425-352-3456
Library: **http://library.uwb.edu/ (http://library.uwb.edu/)** 425-352-5340
Writing Center: **www.uwb.edu/WritingCenter/ (http://www.uwb.edu/WritingCenter/)** 425-352-5253

Quantitative Skills Center: **http://www.uwb.edu/qsc** (http://www.uwb.edu/qsc)   425-352-3170

Student Success Services: **http://www.uwb.edu/cusp/studentsuccess** (http://www.uwb.edu/cusp/studentsuccess) 425-352-3776

Career Services: **http://www.uwb.edu/careers** (http://www.uwb.edu/careers) 425-352-3706

Student Counseling Services: **http://www.uwb.edu/studentservices/counseling** (http://www.uwb.edu/studentservices/counseling)   425-352-3183

Course Summary:

Date	Details	Due
Sun Oct 3, 2021	📝 **Me and My Favorite Game** (https://canvas.uw.edu/courses/1492294/assignments/6633830)	due by 11:59pm
	📝 **Quiz 0: On Syllabus** (https://canvas.uw.edu/courses/1492294/assignments/6673633)	due by 11:59pm
Wed Oct 6, 2021	📝 **Test Assignment Submission** (https://canvas.uw.edu/courses/1492294/assignments/6633837)	due by 5:40pm
Sat Oct 9, 2021	📝 **MP1: Fun with the tools and beginning scripting** (https://canvas.uw.edu/courses/1492294/assignments/6633832)	due by 11:59pm
Sun Oct 10, 2021	📝 **Quiz 1: Working with Unity Editor** (https://canvas.uw.edu/courses/1492294/assignments/6673517)	due by 11:59pm
Sat Oct 16, 2021	📝 **MP2: Object Creation/Deletion and Time** (https://canvas.uw.edu/courses/1492294/assignments/6633833)	due by 11:59pm
Sun Oct 17, 2021	📝 **Final Game Project: Team Sign-Up** (https://canvas.uw.edu/courses/1492294/assignments/6633827)	due by 11:59pm
Sat Oct 23, 2021	📝 **MP3: Object Behaviors + GUI Coordinate System** (https://canvas.uw.edu/courses/1492294/assignments/6633834)	due by 11:59pm
Sat Oct 30, 2021	📝 **MP4: More Object Behaviors + Camera** (https://canvas.uw.edu/courses/1492294/assignments/6633835)	due by 11:59pm
	📝 **MP4: More Object Behaviors + Cameras** (https://canvas.uw.edu/courses/1492294/assignments/6633836)	due by 11:59pm
Wed Nov 3, 2021	📝 **Tools we use: Grade from peers** (https://canvas.uw.edu/courses/1492294/assignments/6633839)	due by 11:59pm
Mon Nov 8, 2021	📝 **Week 6 Team Survey** (https://canvas.uw.edu/courses/1492294/assignments/6633843)	due by 5am

Date	Details	Due
	📝 **Final Game Submission for: Digital Prototype Demo + Game Design Doc** (https://canvas.uw.edu/courses/1492294/assignments/6633828)	due by 5:45pm
Fri Nov 12, 2021	📝 **Tools We Use (Sign Up)** (https://canvas.uw.edu/courses/1492294/assignments/6633840)	due by 11:59pm
Mon Nov 15, 2021	📝 **Week 7 Team Survey** (https://canvas.uw.edu/courses/1492294/assignments/6633844)	due by 5am
	📝 **Final Game Submission: Rough Game Demo + Game Design Doc** (https://canvas.uw.edu/courses/1492294/assignments/6633829)	due by 5:45pm
Mon Nov 22, 2021	📝 **Week 8 Team Survey** (https://canvas.uw.edu/courses/1492294/assignments/6633845)	due by 5am
Mon Nov 29, 2021	📝 **Week 9 Team Survey** (https://canvas.uw.edu/courses/1492294/assignments/6633846)	due by 5am
Mon Dec 6, 2021	📝 **Week 10 Team Survey** (https://canvas.uw.edu/courses/1492294/assignments/6633841)	due by 5am
	📝 **Final Game Grade: From Kelvin for Retro Presentation** (https://canvas.uw.edu/courses/1492294/assignments/6633815)	due by 5:45pm
Mon Dec 13, 2021	📝 **Week 11 Team Survey** (https://canvas.uw.edu/courses/1492294/assignments/6633842)	due by 5am
Fri Dec 17, 2021	📝 **Final Game Project Final Submissions** (https://canvas.uw.edu/courses/1492294/assignments/6633825)	due by 6pm
	📝 **Extra Credit** (https://canvas.uw.edu/courses/1492294/assignments/6633805)	
	📝 **Final Game Grade: From Kelvin for Alpha playtest** (https://canvas.uw.edu/courses/1492294/assignments/6633806)	
	📝 **Final Game Grade: From Kelvin for Beta playtest** (https://canvas.uw.edu/courses/1492294/assignments/6633807)	
	📝 **Final Game Grade: From Kelvin for Final playtest** (https://canvas.uw.edu/courses/1492294/assignments/6633809)	

Date	Details	Due

📝 **Final Game Grade: From Kelvin for Final Video** (https://canvas.uw.edu/courses/1492294/assignments/6633810)

📝 **Final Game Grade: From Kelvin for Digital Prototype Demo** (https://canvas.uw.edu/courses/1492294/assignments/6633808)

📝 **Final Game Grade: From Kelvin for Game-Pitch** (https://canvas.uw.edu/courses/1492294/assignments/6633811)

📝 **Final Game Grade: From Kelvin for GDD at Digital Prototype Demo** (https://canvas.uw.edu/courses/1492294/assignments/6633812)

📝 **Final Game Grade: From Kelvin for GDD at Game-Pitch Time** (https://canvas.uw.edu/courses/1492294/assignments/6633813)

📝 **Final Game Grade: From Kelvin for GDD at Rough Game-Demo** (https://canvas.uw.edu/courses/1492294/assignments/6633814)

📝 **Final Game Grade: From Kelvin for Rough Game-Demo** (https://canvas.uw.edu/courses/1492294/assignments/6633816)

📝 **Final Game Grade: From Peer for Retro Presentation** (https://canvas.uw.edu/courses/1492294/assignments/6633817)

📝 **Final Game Grade: From Peers for Alpha Playtest** (https://canvas.uw.edu/courses/1492294/assignments/6633818)

📝 **Final Game Grade: From Peers for Beta Playtest** (https://canvas.uw.edu/courses/1492294/assignments/6633819)

📝 **Final Game Grade: From Peers for Digital Prototype** (https://canvas.uw.edu/courses/1492294/assignments/6633820)

📝 **Final Game Grade: From Peers for Final Playtest** (https://canvas.uw.edu/courses/1492294/assignments/6633821)

Date	Details	Due

📝 **Final Game Grade: From Peers for Final Video Grade From Peers** (https://canvas.uw.edu/courses/1492294/assignments/6633822)

📝 **Final Game Grade: From Peers for Game-Pitch** (https://canvas.uw.edu/courses/1492294/assignments/6633823)

📝 **Final Game Grade: From Peers for Rough Game-Demo** (https://canvas.uw.edu/courses/1492294/assignments/6633824)

📝 **Final Game Project Specification** (https://canvas.uw.edu/courses/1492294/assignments/6633826)

📝 **Missed Surveys** (https://canvas.uw.edu/courses/1492294/assignments/6633831)

📝 **Quiz 2: Working with Unity Project Settings** (https://canvas.uw.edu/courses/1492294/assignments/6673707)

📝 **Tools we use: grade from Kelvin** (https://canvas.uw.edu/courses/1492294/assignments/6633838)