

Course Syllabus: CS 74.41 Game Design

Instructor: Alejandro Jauco, ajauco@santarosa.edu

Office Hours: Tuesdays, 5-6:20pm online Zoom Conference or by appointment on Zoom.

Course Description: This course is an introduction to video game design. It will introduce students to the basics of game design and theory using analysis, research, critiques and projects. Students will learn about the game industry and what is required to develop a video game through assignments that simulate employment by a game developer. Students will design, model, and implement a working video game level using the Unity Game Development Engine.

Topics covered: Game design and theory, the game industry, game mechanics, game production, game development tool (Unity) (Grade or P/NP)

Prerequisites: None.

Recommended: Eligibility for ENGL 100 or ESL 100 and Course Completion of CS 74.11

Student Learning Outcomes

Students will be able to:

1. Examine and critically discuss the components of games.
2. Identify, examine and differentiate various aspects that make a game fun and compelling.
3. Apply the principles of theoretically sound game design including gameplay, core mechanics, game balancing, and iterative rapid prototyping.
4. Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for gaming.

Objectives

Upon completion of the course, students will be able to:

1. Create, develop and implement effective game design documents and supporting concept art and storyboard drawings for a proposed video game.
2. Perform critical steps to conceive, design, implement and playtest video game prototypes, models and assets.
3. Demonstrate teamwork skills in the development of video games.
4. Present working 3D and/or 2D game prototypes both non-digital and digital games.

Course Website and Class Meetings

Students will use the Canvas course web site for assignment instructions, submitting assignments, viewing classmate's work, sharing resources, and viewing grades. Course to be taught as an online class: web/online work.

Website: <https://canvas.santarosa.edu/>

Lectures, Seminars and Office Hours (1 + 1 hrs weekly)

Lectures will mostly be recorded and available on Tuesday or Wednesday of the week. We may have live lectures/seminars and students who participate in the live lectures/seminars will be given discussion/participation credit. All live lectures/seminars will use Zoom online video conferencing (<https://zoom.us/>)

Textbooks

The following textbooks are recommended but not required. Any Unity Game Development Book. Level Up! The Guide to Great Video Game Design by Scott Rogers, 2nd Edition, Wiley, 2014
The Art of Game Design: A book of lenses by Jesse Schell, 2nd Edition, Morgan Kaufmann, 2014

Software

We will be using **Unity** for game development. Be sure you have access to a computer which can run Unity. There may be Unity enabled computers on campus but this is TBD.

Go to <https://store.unity.com/download> for the latest version Unity (personal edition).

Google Drive – All Unity project assignments will be submitted on Canvas or thru a Google Drive account. <https://www.google.com/drive/> (min 1 gigabyte of space)

All live lectures/seminars will use Zoom online video conferencing (<https://zoom.us/>). You must have a Zoom account in order to participate in live lectures/seminars.

Web browser, Google Docs, docs.google.com or similar. 3D Modeling to be done in Unity, SketchUp or similar. 2D paint program such as Photoshop or other Microsoft Paint may be introduced.

Materials

- Google Drive cloud storage account
- USB Flash Drive (minimum 2 gigabyte)
- Instructor prepared materials

Important Dates

Day Class Begins:	Monday, January 13, 2020
Day Class Ends:	Friday, May 15, 2020
Day/Time of Final Exam:	To be Arranged
Last Day to Add without instructor's approval:	Sunday, January 19, 2020
Last Day to Add with instructor's approval:	Sunday, February 2, 2020
Last Day to Drop and be eligible for enrollment/course fee refund:	Sunday, January 26, 2020
Last Day to Drop without a 'W' symbol:	Sunday, February 2, 2020
Last Day to Drop with a 'W' symbol:	Sunday, April 19, 2020
Last Day to Opt for Pass/No Pass:	Sunday, February 23, 2020
First Census Date:	Monday, February 3, 2020
Mid-Term Date:	3/23/2020 - 4/19/2020

Dropping the Class

If you decide to discontinue this course, **it is your responsibility to officially drop** to avoid getting no refund (after 10% of course length), a W symbol (after 20%), or a grade (after 60%). Also, for several consecutive, unexplained absences, the instructor may drop a student.

Pass-NoPass (P/NP)

You may take this class P/NP. You must decide before the deadline, and add the option online with TLC or file the P/NP form with Admissions and Records. With a grade of C or better, you will get P.

You must file for the P/NP option by the requisite date. Once you decide to go for P/NP, you cannot change back to a letter grade. If you are taking this course as part of a certificate program, you can probably still take the class P/NP. Check with a counselor to be sure.

Instructor Announcements and Q&A Forum

The instructor will post announcements on the “Instructor Announcements” page in Canvas throughout the semester. Canvas notifies students according to their preferred Notification Preferences as soon as the instructor creates an Announcement. A “Q&A Forum” is also on Canvas to ask for assistance of your classmates or of instructor.

Discussions and Class Participation

As part of this class you'll participate in our online class discussions, which will also be used for some of the homework and emphasis for the week's topic. Discussion is a great way to learn more about fellow students and similar video game likes/dislikes.

Students who fail to log-in or submit first project/assignment to an online class after the second week may/will be dropped from the class. **It is strongly advised that if you need to miss first week or more than one class/homework deadline in a row that you contact me to avoid being dropped from the class.**

Grade Policy

No late assignments accepted, unless discussed with instructor prior to due date. Late submission typically may receive a 20% penalty. All assignments are due [before midnight PST] on the due date. Submissions more than one week late are not accepted without prior arrangement. Late work will not be graded unless student contacts instructor through Canvas for late work.

Quizzes and/or Exams

This course mainly focuses on project based assignments. There may be written online quizzes, midterm and final exams. The material comes from the textbook, class lectures and supplemental materials. If any exam is missed, a zero will be recorded as the score. It is your responsibility to take the exams by the due date.

Grading

Discussions, participation and live lectures: 8-10%

Assignments, homework, quizzes: 40-60%

Project Midterm: 15-20%

Game Project / Final Project: 30-35%

You are expected to spend around 4 to 6 hours of work project/assignment time per week.

Visit the “Grades” in Canvas to keep track of your grades. Canvas has an issue with grades as assignments not recorded with a grade is assumed an A. If a project was due and grading has not been done, don't assume your overall grade is correct and adjust it accordingly. If taking Pass/No Pass you need at least 70% of the total class points and complete the midterm project/exam and the

final project/exam to pass the class.

Standards of Conduct

Students who register in SRJC classes are required to abide by the SRJC Student Conduct Standards. Violation of the Standards is basis for referral to the Vice President of Student Services or dismissal from class or from the College. See the Student Code of Conduct page.

Collaborating on or copying of tests or homework in whole or in part will be considered an act of academic dishonesty and result in a grade of 0 for that test or assignment. I encourage students to share information and ideas, but not their work. See these links on Plagiarism:

[SRJC Writing Center Lessons on avoiding plagiarism](#)

[SRJC's statement on Academic Integrity](#)

Special Needs

Students with disabilities who believe they need accommodations in this class are encouraged to contact Disability Resources (527-4278), as soon as possible to better ensure such accommodations are implemented in a timely fashion.

Class lectures and videos are not closed caption (CC) and the Unity game development software does not have an accessibility policy. Please contact me if this may be an issue.

Concepts and Fundamentals

The class will be consist of 3 major areas: 1) game design theory, 2) development process, and 3) production

Design Theory

1. Game Design, Game Studio
2. Game Genres and Game Structure
3. Game Mechanics and Game Dynamics
4. Player Character and Non-Player Characters
5. Story and Creating Storyboards

Process

1. Brainstorm, Game Idea
2. Concept Design and Document
3. Challenges, Encounters, Game balancing
4. Design, Build, Playtest
5. Paper Prototype of Video Game

Production (we will make video games)

1. Introduction to Unity Game Engine
2. Making your first Video Game
3. 2D Video Game
4. 3D Video Game
5. Game Design Document, Level Design Document
6. Assets – 2D/3D Models, Textures
7. Level game design

Assignments and Modules (subject to change)

Module 1	Overview and Game Design
	What is game design. What kinds of skills and requirements.
Module 2	Game Genres
	Analysis of different game genres
Module 3	Game Mechanics and Game Dynamics
	Rules of the game, player experience. Objectives, challenges, encounters
Module 4	Player Characters (PC), Non-Player Characters (NPCs)
	Importance of characters, behaviors and abilities
Module 5	Story and Storyboards
	Storyline and drawings in the game concept phase.
Module 6	Game Concept and Idea
	Game Concept Document purpose, elements and requirements
Module 7	Paper Prototype of Video Game
	Create a board, card, or dice game of a video game. Challenges, encounters, game balancing
Module 8	Design Build Playtest
	Build and playtest, paper prototype
Module 9	Introduction to the Unity Game Engine
	Using Unity to build a game level.
Module 10	2D Video Game (team based)
	Create a 2D video game
Module 11	Design Build Playtest
	Playtest and iterate on your 2D game.
Module 12	3D Video Game (team based)
	Create a 3D video game
Module 13	Assets – 3D Models, Textures
	Adding models to our video game
Module 14	Level Game Design
	Add obstacles, challenges, encounters to a game level
Module 15	Design Build Playtest
	Instructor and peer critique of game pitches
Module 16	Game Playtesting
	Playtest each other's video game.
Module 17	Final Project/Final Exam
	Take home final project or online final exam