FCLC Undergradutate Introduction to Video Game Design Syllabus

- **Course Code:** CISC 2540
- **Schedule:** Tuesdays and Fridays, 1:00 - 2:15 PM
- **Instructor:** John Bezark
- **Office Hours:** Thursday 1-5pm. Book here

Course Description:

An introductory course exploring the fundamentals of digital game design and development. This course will use Godot 4 as the primary game creation tool, and it wil cover the basics of game development, coding fundamentals, and game design principles. Students will engage in hands-on projects to develop practical skills in both 2D and 3D game design. Students are not expected to have any prior programming or game design experience.

Course Objectives:

- Understand the principles of game design and development.
- Gain proficiency in Godot 4.
- Develop basic coding skills relevant to game design.
- Complete three major game design projects: a tabletop game, a 2D game, and a capstone game.
- Enhance writing and oral presentation skills through game-related assignments.
- Be able to better work in teams
- Respond to critical feedback constructively

Assessment

The work of the class consists of the following:

Assignment	Description	Due Date	Points
Class Participation	Actively participate in class discussions and contribute to group projects.		15
Tabletop Game	A playable prototype of a tabletop game	9/12	16
Tabletop Game Process Paper	Paper which documents process, execution and playtesting of tabletop game	9/19	10

Assignment	Description	Due Date	Points
Labs 1-4	4 short coding assignments designed to build proficiency. 6 points each.	9/23, 9/30, 10/10, 11/7	24
2D Game Concept Paper	A brief paper describing your concept for the 2D Game	9/26	10
2D Game	A playable prototype of a 2D game	10/24	25
Capstone Concept Presentation	A brief Presentation describing your concept for the Capstone Game	11/11	10
Game Review	Play one of the suggested games and review it!	12/5	10
Capstone Game	A polished game. Can be an evolution of the 2D game or something new.	Final	30
Total Points Possible			**150**

All assignments will be graded on the due date. Students are always allowed to revise and resubmit work **up until the class before the final.**

Attendence: Students are allowed 3 unexcused absences. After this, each unexcused absence will lower your final grade by 1/2 a letter, i.e. B+ -> B or A -> A-

Course Outline

The course is split into 3 distinct modules each with a unique project: - Week 1-2: Game Design Fundamentals and tabletop design - Week 3-8: 2D Game Design - Week 9-14: 3D Game Design/Final Project Development

Friday 8/29 (First class)

- Week 1 Slides
- FILL OUT THIS FORM so you can tell me if I'm giving you too much homework!
- Who are you/Syllabus Review
- Professor John
- Game Design Fundamentals

Week 1 - What is a Game?

Tuesday 9/2

- The Iterative Game Design Process
- Prototyping
- Playtesting
- Group Work
- **Homework: Game Review**
- **Homework: Tabletop Game**

Friday 9/5

- MDA Framework - Systems, Loops and Balance
- Prototyping Tabletop Games: Balancing and Mechanics
- Reading: MDA
- MDA Framework
- Systems, Loops and Balance

Week 2 - Prototyping, Iteration and Playtesting

Tuesday 9/9

- Playtesting
- Group Work

Friday 9/12

- Playtesting
- Git Init
- Video turotial on Github and Godot
- **DUE: Tabletop Game**
- **Homework: Tabletop Process Paper**

Week 3 - Hello Godot Getting Started in 2D

Tuesday 9/16 - Nodes and Scenes Demo

- Hello Godot - **Live Demo (Students Follow Along)**
  - Getting started with Godot
  - Video turotial on Github and Godot
  - Nodes and Scenes - build a simple scene together
  - Everyone ends class with the same working foundation
- **Homework: Lab 1**

Friday 9/19 - Nodes and Scenes Workshop

- **In-Class Exercise**: Modify Tuesday's scene
  - Nodes and Scenes practice
  - Add your own sprites and experiment with node hierarchy
  - Mini-presentations: "Show what you changed"
- Genres in 2D
  - 2D Game Brainstorming
- **DUE: Process Paper**
- **Homework: 2D Game Concept**
- **Homework: 2D Game**

Week 4 - Coding Fundamentals

Tuesday 9/23 - Coding Fundamentals Demo

- Git Collaboration and Branches
- **Live Coding Demo (Students Follow Along)**
  - Coding Fundamentals
  - Scripts and properties
  - Variables
  - Create a moving character together using simple_character example
- GDScript in 1 Hour
- **DUE: Lab 1**

Friday 9/26 - Coding Fundamentals Workshop

- **In-Class Coding Exercise**: Expand your character
  - Conditionals, Input
  - Lecture Part 1
  - Lecture Part 2
  - Challenge: "Make your character do something new"
  - Pairs
- **Homework: Lab 2**
- **Homework: Lab 3**
- **DUE: 2D Game Concept**

Week 5 – Input, Interactions and Patterns

Tuesday 9/30 - Input and Interactions Demo

- **Live Demo (Students Follow Along)**
  - Lecture
  - Lab Review
  - Input map
  - Using Nodes together - build item pickup mechanic together
    - Area2D
    - Camera2D

        * Timer
    - Functions/Signals
- **DUE: Lab 2**

Friday 10/3 - Input and Interactions Workshop

- **In-Class Exercise**: Choose and implement a game pattern
    - Continue with nodes and interactions
    - Options: Timer challenges, Camera following, or Enemy behavior
    - Use existing demo projects as reference
    - Project development time

Week 6 - Level, Environment and UI Design

Tuesday 10/7 - Level Design Demo

- **Live Demo (Students Follow Along)**
    - Area2D Review
    - CharacterBody
    - CollisionShapes
    - Build a level with tilemap together using Platformer-Tilemap example

Friday 10/10 - Level Design Workshop

- **In-Class Exercise**: Add polish to your scenes
    - Assets
        * Tilemaps
        * Sprite Sheets
        * Paralax layers
        * Where to find assets
            · Kraftpix
            · Kenny
            · Noun Project
            · Dotown
            · Open Game Art
    - 2D Components
    - Common Patterns
        * Items
        * Enemies
        * Checkpoints
        * Respawns
        * Killboxes
- **DUE: Lab 3**

Week 7 - Project Development/Playtesting

Tuesday 10/14

- Control Nodes
- Sound
- Lighting
- Project Development

Friday 10/17

- Project Development
- Playtesting

Week 8 - Project Development

Tuesday 10/21

- Project Development

Friday 10/24

- Playtesting day! Woo hoo!
- **DUE: 2D Game**

Week 9 - Hello 3D

Tuesday 10/28

- Capstone Brainstorm
- Hello 3D
- **Homework: Lab 4**
- **Homework: Capstone Game**
- **Homework: Capstone Presentation**

Friday 10/31 SPOOOOKY HALLOWEEN!!! (Maybe no class???)

- Hello 3D
- Materials, Models
- Light, Sound
- Lighting in Godot
- Animated Characters
  - Mixamo
  - Character Animation Combiner

Week 10 - XR Advanced Topics

Tuesday 11/4

- XR workshop

Friday 11/7

- XR workshop
- **DUE: Lab 4**

Week 11 - Capstone Presentations

Tuesday 11/11

- **DUE: Capstone Presentation**

Friday 11/14

- **DUE: Capstone Presentation**

Week 12 - Review and Advanced Topics

- Exporting
  - Web Export Github Pages
- Review ### Tuesday 11/18
- Classes, Resources
- Debugging
- NPCs

Friday 11/21

- Review

Week 13 - Review

Tuesday 11/25

- Project Development

Friday 11/28 - NO CLASS (Thanksgiving Break)

Week 14 - Playtesting

Tuesday 12/2

- **DUE: Final project playtest**

Friday 12/5

- **DUE: Final project playtest**
- **DUE: Game Review**

Final

Friday 12/12

- Preparing for the Game Industry: Portfolio and Career Paths
- Playtest party!
- **DUE: Capstone Project**

Necessary Materials:

- Godot 4.4 : An open source 2D, 3D and XR game engine.
- Github Desktop: an industry standard version control system

Resources and Tutorials

- Video turotial on Github and Godot
- Introduction to Coding
- Conditionals and Input
- 9 Ways to Actually Get Game Dev Done On Time
- Godot Resources
- Where do game ideas come from

Godot

- GDScript Cheat Sheet
- Source Code
- Docs
- Demo Projects
- Forums
- Godot Discord
- Learn GDScript From Zero
- **TUTORIALS**

Brackeys

- How to make a video game in Godot
- GDScript in 1 Hour
- How to make 3D Games in Godot
- Lighting in Godot ## Git & Github
- Dan Shiffman's Github for Poets

Instructor Details

John Bezark (they/them) is a Brooklyn based Game Designer, Creative Technologist, Immersive Experience Designer and Video Artist. They graduated from NYU's ITP with an MPS in Interactive Telecommunications and from Fordham University with a BA in Theatrical Directing. John has made everything from Solar Powered Websites to Immersive Game-shows about Systems Thinking.

Nowadays they like to use the Godot Game Engine to create one of a kind immersive and interactive experiences, games and performance art.

When not creating weird things, John also really likes to work in education and he's passionate about teaching others how to design immersive spaces, how to make games and how to see the world through the lens of Systems Thinking. **Email: jbezark@fordham.edu** Portfolio

Office Hours by appointment.