CIS 345 - Game Design and Development

Course information

Class meetings	Tuesdays and Thursdays s 4:00 - 5:50
Instructor	Kate Kaster
Office location	Science Building (SCI) A224
Email	kkaster@uwsp.edu
Communication	You are encouraged to contact me if you have any questions. When communicating via email, please add "Game Design" to the subject line.
Office hours	After class on Tuesdays and Thursdays
Class website	https://www.uwsp.edu/canvas/Pages/default.aspx
	Canvas will be used to distribute course materials, assignments and grades. Check it regularly to stay informed of changes to class schedules and other important announcements.
Prerequisites	There are no prerequisites for this course.
Textbooks	There are no textbooks for this course

Important: Attendance is Mandatory for both Tuesday and Thursday and is worth 20% of your grade.
Please see the Attendance Policy outlined in this document.
Although attendance is mandatory - there is NO homework; no outside work.
Attend class, do the work during class time and that's all.

Coursework: I am project-based. You will only have projects (games) to complete; no quizzes.
You will have class time to complete your projects.

Schedule Changes: This syllabus, along with course assignments and due dates are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in class, in a course announcement and/or through email.

Course Description
Gain an understanding of the principles and concepts of video game development.
Students create multi-level games using both Unity and Unreal Engine game engines.

Course learning outcomes: Upon completing this course, you will be able to:

Unreal Engine:
- Navigate views, move, rotate, and scale.
- Create a new material
- Create a Simple Blueprint
- Add and Display Score
- Add and change levels
- Collect different objects
- Add a menu that has play and quit option
- Add variables and menus to display player health
- Create an array to make a shooting range

Unity:
- Navigate views, move, rotate, scale.
- Create Scripts using C# foundamentals
- How to get user input and add the logic to your game
- Rigidbody and colliders
- Create a new material
- Recognize when one object collides with another
- Add bouncing physics
- Add sound to a game
- What is a variable? How to declare? Initialize? Display?
- How to create a public variable & how to display to screen
- Add multiple scenes to a game
- Camera options and particle systems
- How to import and use Standard Assets

Course requirements

Specific requirements for each graded course activity will be announced separately in Canvas.

Tentative course schedule

Schedule is subject to change.

Important Note: Refer to the Canvas course calendar and dropbox details for specific due dates for coursework. If you have any questions, please contact the instructor.

Week #	Topics	Assignment
1	Unreal Engine: views, move, rotate, scale. Create a new material Simple Blueprint	**Tuesday**: Simple Blueprint (Attendance) **Thursday**: Create a new game - NOT third person - add to this new game Games ■ Create and destroy and object ■ Turn on/off a blueprint (not fire, not point light) ■ Create a Material - add it to an object in the game ■ Game must have platforms
2	Add and Display Score	**Tuesday**: Add objects to game from Thursday's game and display the score for objects (Attendance) **Thursday**: Create a diploma-like object, destroy and score functionality to one the following (one you have NOT done before) Games
3	How to add and change levels How to collect different objects	**Tuesday**: Add 2 more levels to the diploma game (3 levels total - Attendance **Thursday**:Complete adding 2 more levels to the diploma game Games ■ With collecting different objects on each level ■ See logic at the end of Change levels document

4	How to add a menu that has play and quit option how to add variables and menus to display player health	**Tuesday**: Add Basic menu to your levels game - Attendance **Thursday**:Player Health Add to your levels game - all levels Games
5	How to create an array to make a shooting range	**Tuesday**: Creating a shooting range with arrays - First Person Shooter Attendance ■ Auto Spawning targets in First Person Shooting ■ Add Scoring to First Person Shooter Game **Thursday**:Create a **NEW** FPS game with different object of your choice - with scoring Games ■ Must be a NEW game - cannot just modify the one you to complete exercises ■ New Object must have material, text and some kind of particle effect
6	Unity: views, move, rotate, scale. Scripts: C# foundamentals	**Tuesday**: Reporting for Duty (Attendance) **Thursday**:Simple Movement using Scripts Games
7	How to get user input and add the logic to your game Rigidbody and colliders	**Tuesday**: Update Simple Summative 2d and 3d games to be input handling (Attendance) **Thursday**: Rigidbody Components Unity Colliders - 2d Games Unity - Bowling Game Create a Bowling Game in 2d and 3d
8	Create a new material How to recognize when one object collides with another add bouncing physics	**Tuesday**: Creating and Using Materials Scripting Collision Events - Collider Scripting Collision Events - Collider 2D Attendance ● Update 2d and 3d Bowling games to have collider and trigger methods in your scripts **Thursday**: Physics Materials - 2d Games ● Pinball 2D - create something like Create a 3d Pinball Game too
9	how to add sound to a game *what is a variable? How to declare? Initialize? Display?*	**Tuesday**: Adding Sounds to Game Script changes needed when Adding Sound Boing sound ● Update 2d and 3d Bowling games to have sound in collider and trigger methods ● Update 2d and 3d Pinball games to have sound in collider and trigger methods ● Sound site1 Site2 Games **Thursday**: Data Types and Variables ● Mathematical Operations Attendance
10	*How to create a public variable & how to display to screen*	**Tuesday**:Games Variable Scope and defining scoring variables

		● add scoring variables and display to the player **Thursday**: *Pinball 2D and 3D, Bowling 2D and 3D (should display score to the screen)*Games
11	*Review of collision and scoring* *Adding multiple scenes to a game*	**Tuesday**: Logical Expressions "if/else" Statements "switch" Statements Games 　● Modify 2d and 3d pinball games to not add to score when the pinball hits a wall Attendance **Thursday**: Creating New Scenes Scripting Scene Changes Is your scene dark when you play it?? Add Quit Button to Game Build an exe Pinball 2D and 3D - with Exit button (build exe) and new scene Games
12	Thanksgiving week *Camera options and particle systems*	**Tuesday**: Standard Assets Overview Cameras Particle Systems Attendance
13	How to import and use Standard Assets	**Tuesday**: First Games that you Create Using Standards Assets - Unity **Thursday**: First Games due today Games
14 - 15	Final Project	**Create same (or similar) game in both Unity and Unreal Engine** Within your game, you should plan to make use of the following core concepts: ■ At least 4 sprites (objects) with color Both ■ Multiple Scenes - at least 3 levels - plus overall win scene & overall lose scene Both ■ State that you either won or lost Both ■ One scene must have a small parkour course (jump between platforms) ■ One scene must have rotating objects - pick an object that make sense to rotate ■ One scene must have particles and a maze ■ User Input (keyboard control) ■ At least one player with keyboard control ■ User Output (Canvas / Text objects / HUD) ■ Scoring must be displayed Both ■ Must have an exit button Both ■ Scoring Both ■ If maximum score value is achieved, display win or lose game message Both ■ Scripts (as needed for behavior) or Blueprints Both ■ Create folders for each type (scripts, materials, blueprints, maps, etc) ■ 2 different Sounds (tada, crash, ping, etc) Both

		■ Create EXE in BOTH
16	Final Project Due during Finals	25% of your grade 250 points
	Games - various games that you create throughout the class	55% of your grade 550 points
	Attendance/Simple Games	20% of your grade 200 points

Graded activities

- **Attendance**   20% of your grade - complete simple games during class

- **Games**   55% of your grade
- **Final Project:**   25% of your grade

Viewing grades in Canvas
Points you receive for graded activities will be posted to the Canvas Grade Book. Online grades are updated once a grading session has been completed – typically within 4-5 work days following the completion of an activity. You will see a visual indication of new grades in Canvas.

Grading scale

The final grades will be determined as a percentage of points earned out of 100 points according to the following scale:

Grades	Percentage	Grades	Percentage	Grades	Percentage
A	94.00% – 100.00%	B-	83.99% – 81.00%	D+	70.99% – 68.00%
A-	93.99% – 91.00%	C+	80.99% – 78.00%	D	67.99% – 64.00%
B+	90.99% – 88.00%	C	77.99% – 74.00%	F	< 64%
B	87.99% – 84.00%	C-	73.99% – 71.00%		

The instructor reserves the right to revise the grade cutoffs to be more generous if necessary based on overall class performance.

Late policy

Coursework must be submitted by the given deadline or an extension must be requested from the instructor **before the due date**. If you know ahead of time that you will have a legitimate reason for missing a due date, contact the instructor to discuss an extension.

Coursework that is turned in late will receive a 20% reduction in points awarded. Submissions that are more than 3 days late will receive 0 points.

The instructor reserves the right to adjust this policy to account for extraordinary situations, such as documented illness or medical emergencies. You are required to inform the instructor as soon as possible of such situations.

Attendance policy

Attendance is Mandatory for both Tuesday and Thursday for this class.

It is simply too easy to copy code from the Internet and pass it off as your own. By making attendance mandatory and a part of your grade, I am trying my best to alleviate cheating and I am trying to ensure that you learn the content presented. That said, I realize that life-happens and you may have to miss class - just email me informing me that you will miss class

and we can get you caught up. Class absences should be limited to no more than 3, unless prior approval has been given.

In addition to learning the content, another upside of mandatory attendance is that I give you time to work on your projects during class. That way you can ask questions and other students can learn from your questions.

If you have any questions or concerns regarding this policy, your first point of contact should be the instructor. If you are unable to reach the instructor, or if you are experiencing a personal or medical crisis/emergency, you should contact the Office of the Dean of Students at dos@uwsp.edu or (715) 346-2611.

Absences due to military service
You will not be penalized for class absence due to unavoidable or legitimate required military obligations, or medical appointments at a VA facility, not to exceed two (2) weeks unless special permission is granted by the instructor. You are responsible for notifying faculty members of such circumstances as far in advance as possible and for providing documentation to the Office of the Dean of Students to verify the reason for the absence. The faculty member is responsible to provide reasonable accommodations or opportunities to make up exams or other course assignments that have an impact on the course grade. For absences due to being deployed for active duty, please refer to the Military Call-Up Instructions for Students.

Software and hardware requirements
There are no specific software requirements on this course. You may find it more convenient to utilize your own desktop or laptop computer than competing coursework in public computer labs. Refer to UWSP Information Technology for recommended computer configurations:
https://www.uwsp.edu/infotech/Pages/Purchasing/Recommended-Windows-Laptop-and-Apple-MacBook-Configurations.aspx.

The course is offered fully online and a high-speed internet connection is needed to access course materials in Canvas and on the Web.

Other policies

Submitting coursework
All coursework must be submitted **electronically through Canvas**, unless otherwise instructed.

Nondiscrimination
You may be asked to review and provide feedback on the work created by your peers. When doing so, please remember that the objective is to critique the work, not the person.

It is the policy of the University of Wisconsin-Stevens Point to:

- Foster an environment of respect for the dignity and worth of all students, employees, and guests of the university; Provide an environment which is conducive to the free and open exchange of ideas; and Strive to eliminate bias, prejudice, discrimination, and harassment in all forms and manifestations.
- Discrimination based on an individual's age, race, color, religion, sex, gender identity or expression, national origin, ancestry, marital status, pregnancy, parental status, sexual orientation, disability, political affiliation, arrest or conviction record, membership in the National Guard, state defense force or any other reserve component of the military forces of the United States or this state, or other protected class status is demeaning to all students, employees, and guests; impairs the process of education; and violates individual rights.

Dropping/withdrawing from the course
It is the student's responsibility to understand when they need to consider un-enrolling from a course. Refer to the UWSP Academic Calendar for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons include, but are not limited to, the following: documented and severe physical/mental illness/injury to the student or student's family. Please consult the instructor at the earliest opportunity to discuss the need to drop the course after the mandated deadline.

Incomplete policy
Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if inability to complete the coursework was due to a documented illness/injury or other circumstance beyond the student's control. All incomplete course assignments must be completed by the end of Semester II 2018-2019.

Accommodations

UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and temporary impairments. If you have a disability or acquire a condition during the semester where you need assistance, please contact the Disability and Assistive Technology Center on the 6th floor of Albertson Hall as soon as possible. DATC can be reached at (715) 346-3365 or DATC@uwsp.edu

Student academic disciplinary procedures

UWSP 14.01 Statement of principles

The board of regents, administrators, faculty, academic staff and students of the university of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the university of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards must be confronted and must accept the consequences of their actions.

UWSP 14.03 Academic misconduct subject to disciplinary action

(1)   Academic misconduct is an act in which a student:
    a.   Seeks to claim credit for the work or efforts of another without authorization or citation;
    b.   Uses unauthorized materials or fabricated data in any academic exercise;
    c.   Forges or falsifies academic documents or records;
    d.   Intentionally impedes or damages the academic work of others;
    e.   Engages in conduct aimed at making false representation of a student's academic performance; or
    f.   Assists other students in any of these acts.
(2)   Examples of academic misconduct include, but are not limited to:
    a.   cheating on an examination;
    b.   collaborating with others in work to be presented, contrary to the stated rules of the course;
    c.   submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another;
    d.   submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas;
    e.   stealing examinations or course materials;
    f.   submitting, if contrary to the rules of a course, work previously presented in another course;
    g.   tampering with the laboratory experiment or computer program of another student;
    h.   knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

Use of third party content and work previously presented in another course
Specific allowances for using content created by others are explained in the coursework instructions. Standard citation and acknowledgment practices apply when using third party content, such as text, images, video, and program code. If in doubt, consult the instructor in advance.

Submitting work previously presented in another course is not allowed, unless approved by the instructor in writing.

Please note that originality checking by Turnitin.com is integrated in Canvas and it may be used to review any writing assignment(s) you submit.