STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

GAME 215 – Unity Development 2: Object Oriented Programming

For available course numbers, contact the Registrar's Office at registrar@canton.edu

CIP Code: 11.0202

For assistance determining CIP Code, please refer to this webpage
https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55
or reach out to Sarah Todd at todds@canton.edu

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School: Canino School of Engineering Technology
Department: Decision And Graphics Media Systems
Implementation Semester/Year: Fall 2027

A. TITLE: Unity Development 2: Object Oriented Programming

B. COURSE NUMBER: GAME 215

C. CREDIT HOURS (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity):

# Credit Hours per Week	3
# Lecture Hours per Week	3
# Lab Hours per Week	
Other per Week	0

D. WRITING INTENSIVE COURSE:

Yes	
No	x

E. GER CATEGORY:

Does course satisfy a GER category(ies)? If so, please select all that apply.

[1-2] Communication	
[3] Diversity: Equity, Inclusion & Social Justice	
[4] Mathematics & Quantitative Reasoning	
[5] Natural Science & Scientific Reasoning	
[6] Humanities	
[7] Social Sciences	
[8] Arts	
[9] US History & Civic Engagement	
[10] World History & Global Awareness	
[11] World Languages	

F. SEMESTER(S) OFFERED:

Fall	x
Spring	
Fall and Spring	

G. COURSE DESCRIPTION:

This course introduces students to the core principles of gameplay programming while guiding them through the game development pipeline with Unity and C#.
Students will build a foundation in Object-Oriented Programming (OOP), and progressively explore Unity's key features, including time management, coroutines, collisions, physics, shaders, and materials. The course also covers essential gameplay systems such as player and camera controls, interactions, and basic AI.

H. PRE-REQUISITES: GAME 140
CO-REQUISITES: None

I. STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER	ISLO & Subsets
a. Identify Object oriented design ideas and pipelines	PSLO3 - Demonstrate an understanding of recent principles of game design, including, programming, narrative, character and level design.		2
b. Demonstrate the C# programming core principles.	PSLO8 - Demonstrate an understanding of recent principles of game design, including, programming, narrative, character and level design.		5
c. Demonstrate the OOP programming core principles.	PSLO8 - Demonstrate an understanding of recent principles of game design, including, programming, narrative, character and level design.		5
d. Implement algorithms, graphics, and visualization	PSLO8 -Demonstrate an understanding of recent principles of game design, including, programming, narrative, character and level design.		5
e. Apply principles and related concepts of digital media and video graphics to a final	PSLO7 - Students understand the ethical values of teamwork,		5

project.	copyright infringement and plagiarism.		

KEY	Institutional Student Learning Outcomes [ISLO 1 – 5]
ISLO #	**ISLO & Subsets**
1	**Communication Skills** Oral [O], Written [W]
2	**Critical Thinking** *Critical Analysis [CA], Inquiry & Analysis [IA] , Problem Solving [PS]*
3	**Foundational Skills** *Information Management [IM], Quantitative Lit, /Reasoning [QTR]*
4	**Social Responsibility** *Ethical Reasoning [ER], Global Learning [GL],* *Intercultural Knowledge [IK], Teamwork [T]*
5	**Industry, Professional, Discipline Specific Knowledge and Skills**

J. APPLIED LEARNING COMPONENT:

Yes	x
No	

If yes, select [X] one or more of the following categories:

Non-Clinical Practicum	x	Community Service	
Internship		Civic Engagement	
Clinical Practicum		Creative Works/Senior Project	
Practicum		Research	
Service Learning		Entrepreneurship [program, class, project]	

K. TEXTS: None.

L. REFERENCES: Free online documentation.

M. EQUIPMENT: PC or laptop, with Unity, Visual Studio and Notepad++. OBS for screen/video recording.

N. GRADING METHOD: A - F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS: Assignments, midterm exam and final project.

P. DETAILED COURSE OUTLINE:

Week 1: Syllabus and introduction to Unity (hardware/software check and engine overview)

Week 2: Introduction to C# and OOP (part 1)

Week 3: Introduction to C# and OOP (part 2) + Assignment 1 (graded)

Week 4: Introduction to C# (part 3)

Week 5: Introduction to C# (part 4) + Assignment 2 (graded)

Week 6: Time concept and Coroutines

Week 7: Midterm exam

Week 8: Collisions, physics and particle systems

Week 9: Shaders and materials + Assignment 3 (graded)

Week 10: Player and camera controllers

Week 11: Game mechanics and interactions + Assignment 4 (graded)

Week 12: AI introduction

Week 13: Final exam-project

Week 14: Final exam-project – assistance to students

Week 15: Final exam-project delivery

Q. LABORATORY OUTLINE: