NORCO COLLEGE SLO to PLO MATRIX	PLOs	Assemble multimedia assets into a single project and provide meaning and structure to those assets through programmatic solutions.	Construct complex systems to facilitate game rules, mechanics, and simulations.	Build games or applications driven by mathematics and physics concepts in an architecturally sound software design.	Apply concepts and techniques in game programming to create complete modules and game experiences at an advanced level.	Create an industry-standard portfolio containing code samples from class projects.	Demonstrate professional communication skills effectively with colleagues in an industry production project.
CERTIFICATE/PROGRAM: **Game Programming**							
COURSE: GAM-35 Introduction to Simulation and Game Development							
SLO 1	Examine and critically discuss the various industries which use simulation and computer gaming and the methods of which gaming is used.						
SLO 2	Examine and differentiate the business aspects of game development from concept to commercialization such as concept pitch, planning and scheduling, and promotional tools.						
SLO 3	Analyze, discuss, and apply the principles of theoretically sound game design.						
SLO 4	Identify and differentiate the game development project lifecycle and associated documents such as the Pitch Document, Game Design Document, Technical Design Document, Art Production Plan, Project Plan and Game Prototype.		I				**I**
SLO 5	Demonstrate an appreciation of the interactions between business, industry and the creative process of game design.						
SLO 6	Identify career paths and understand the job market outlook and education requirements for computer gaming professionals.						
COURSE: GAM-24 Video Game Prototyping							
SLO 1	Demonstrate strong understanding of the tools required to construct video game prototypes.	I	I				
SLO 2	Criticize existing game concepts and deconstruct them into core identifiable components.						
SLO 3	Assess game designs and propose plans for proper prototype implementation.						
SLO 4	Create video game prototypes based on a set of industry driven constraints and expectations using modern tools and techniques.	I	I				
SLO 5	Measure the success of game prototype implementations through extensive and						

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rigorous play testing and analysis.							
COURSE: GAM-50/CIS-50 Introduction to Game Programming							
SLO 1	Apply the principles of logical programming concepts to develop specific solutions for game development.		D		D		**D**
SLO 2	Write functional scripts which interact with a game engine to facilitate user input, player movement and in game physics.		D	I	D		
SLO 3	Demonstrate fundamental programming techniques through visual game development.	D	D				
SLO 4	Construct meaningful relationships between simulated game objects to facilitate contextual relationships.	D	D		D		**D**
COURSE: MAT-35 Intermediate Algebra							
SLO 1	Apply the basic operations of algebra on the set of real and complex numbers, polynomials, rational and radical expressions at an intermediate algebra level.		I	I			
SLO 2	Solve linear, rational, quadratic, exponential, radical, logarithmic, absolute value equations, and systems of equations.		I	I			
SLO 3	Solve inequalities in one or two variables.		I	I			
SLO 4	Graph equations of lines and linear inequalities; graph basic functions; identify conic sections.		I	I			
SLO 5	Calculate terms of sequences. Calculate sums of series.		I	I			
COURSE: GAM-51 Mechanics for Game and Simulation Development							
SLO 1	Demonstrate application of mathematical and physics equations in functional game code		D/M	D/M	D/M		
SLO 2	Apply combined concepts of translation and rotation, forces and torques, and collision detection handling in functional code.		D	D	D		
SLO 3	Build games or applications driven by mathematics and physics concepts in an architecturally sound software design.	D	D	D	D		

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COURSE:	GAM-52/CSC-52 Game Engine Scripting I							
SLO 1	Differentiate between game engine scripting and game engine writing techniques and principles.		D	D	D	D		
SLO 2	Construct complex systems to facilitate game rules, mechanics, and simulations.			D/M	D/M	D/M		
SLO 3	Demonstrate an understanding of core concepts in game engine scripting, such as translation, physics, programmatic design principles, and the process by which games and simulations are created.			D/M		D/M		
SLO 4	Evaluate and judge the quality of proposed architectural paths to content construction		D	D/M				
SLO 5	Assemble multimedia assets into a single project and provide meaning and structure to those assets through programmatic solutions.		D	D/M				**D/M**
COURSE:	GAM-53/CSC-53 Game Engine Scripting II							
SLO 1	Solve problems associated with simulating real and abstract circumstances within the confines of modern technical capabilities.			M		M		
SLO 2	Differentiate between effective and ineffective approaches to simulation and games development.			M	M			
SLO 3	Diagram large multi-faceted systems to be implemented by multiple developers.			M		M		**M**
SLO 4	Reconstruct solutions and technical feats in the area of simulation and games development created by industry professionals using theory, analysis, and experimentation.			M				
SLO 5	Apply concepts and techniques in simulation and games development to create complete modules and game experiences at an advanced level.			M	M	M		
COURSE:	GAM-44 Portfolio Production							
SLO 1	Consider and assess student portfolio work based on content, creativity, presentation, craftsmanship, originality, and achievement of goals						I	**D/M**

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SLO 2	Choose and creatively organize original pieces into a cohesive body of work culminating in a presentation quality portfolio which emphasizes the student's strengths or area of specialization					I/D	
SLO 3	Organize student information and experience and prepare a creative, professional resume, cover letter, and follow-up letter					I/D	
SLO 4	Employ professional interview skills in a mock interview setting including presentation of individual portfolio					I/D	
COURSE:	GAM-79 Game Studio Production						
SLO 1	Produce an original, complete simulation, digital game or mobile application.	M	M		M		**D**
SLO 2	Develop content in the area of game art, game audio, game design or game programming that contributes to a milestone based studio pipeline	M					**M**
SLO 3	Demonstrate mastery of interdisciplinary communication and team skills necessary for success in the games industry.	M					**M**
COURSE:	GAM-21 History of Video Games						
SLO 1	Diagram and describe the basic elements of video games from its beginning through the present.	I	I				
SLO 2	Understand the technical advancements of video games throughout time including but limited to microprocessors, desktop computers, the Macintosh computers and multi-dimensional viewing.		I				
SLO 3	Identify the representative video games throughout history that changed the course of the video game phenomenon.						
SLO 4	Evaluate historical events that influenced video game development in various cultures around the world.						
SLO 5	Compare and contrast various video games styles and genres throughout time.						
COURSE:	GAM-22 Game Design Principles						
SLO 1	Examine and critically discuss the component parts of games		I				

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SLO 2	Identify, examine and differentiate various aspects that make a game fun and compelling			I				
SLO 3	Apply the principles of theoretically sound game design including gameplay, core mechanics, game balancing, and iterative rapid prototyping		I	I				
SLO 4	Demonstrate teamwork skills in the development of an original non-digital game							**I**
SLO 5	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming		I	I				
COURSE:	GAM-31 Introduction to 3D Modeling							
SLO 1	Apply the fundamental concepts of Poly Modeling for Game Simulation to create 3D models.		I					
SLO 2	Apply industry standard modeling techniques as a result of comparative analysis of box modeling and extrusion techniques used in Game and Animation Models		I					
SLO 3	Apply methods for UV unwrapping 3D props, vehicles, environments, and characters for use in Game Simulation and Animation.		I					
SLO 4	Analyze the comparative differences of Animation Models constructed from NURBS or Sub-Ds.		I					
COURSE:	GAM-42 Photoshop for Game Art							
SLO 1	Complete projects in Adobe Photoshop using selections, layers and channels to create textures used in game art.		I					
SLO 2	Apply college-level methods of critical analysis and synthesis in creating a game art project using Photoshop's digital painting methods and image manipulation.		I					
SLO 3	Use Layers, Layer Styles, Adjustment Layers and Blending Modes.		I					
SLO 4	Create custom texture maps for video games and animation software.		I					