

**RIVERSIDE COMMUNITY COLLEGE DISTRICT  
SLO BY SUBJECT**

		PLOs	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
Subject: Computer Information Systems: Simulation & Gaming					
CIS 11 Computer Programming using Assembler					
	Analyze microprocessor architecture and the hardware PC's.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
Write and execute programs in assembly language illustrating typical mathematic and business applications.					
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
Analyze and interpret assembly language code and hexadecimal format.					
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
CIS 11 Computer Programming using Assembler					
	Analyze microprocessor architecture and the hardware PC's.				
	Analyze and interpret assembly language code and hexadecimal format.				
	Write and execute programs in assembly language illustrating typical applications.				
CIS 12 PHP Dynamic Web Site Programming					
	Write working PHP scripts to create valid content on Web pages.				

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	Write and use PHP functions and objects effectively.				
	Understand and create PHP data-driven Web applications.				
	Create form pages using PHP to validate data entry, process form data, and update a database.				
	Create PHP scripts that display dynamic Web page content retrieved from a database.				
<b>CIS 12 PHP Dynamic Web Site Programming</b>					
	Write working PHP scripts to create valid content on web pages.				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Write and use PHP functions and objects effectively.				
	Integrate knowledge across a range of contexts				
	Understand and create PHP data-driven web applications.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Create form pages using PHP to validate data entry, process form data and update a database.				
	Generalize appropriately from specific contexts				
	Create PHP scripts that display dynamic web page content retrieved from a database.				
	Locate, evaluate and use information effectively				
<b>CIS 14A Web Programming: JavaScript</b>					
	Write effective scripts using JavaScript core objects, properties, and methods, including the Array, Math, String, and Date objects.				
	Write scripts that apply the usage of objects, properties, methods, and events of the Document Object Model (DOM) to provide real world web site features and enhancements.				
	Write scripts that effectively validate forms, manipulate frames and windows, and employ cookies.				
	Create JavaScript programs that will run successfully in a browser using various data types, variables, operators, expressions, statements, decisions, loops, and functions.				
<b>CIS 14A Web Programming: JavaScript</b>					
	1. Create JavaScript programs that will run successfully in a browser using various data types, variables, operators, expressions, statements, decisions, loops, and functions.				
	4. Write scripts that apply the usage of objects, properties, methods, and events of the Document Object Model (DOM) to provide real world Web site features and enhancements.				
	3. Write scripts that effectively validate forms, manipulate frames and windows, and employ cookies.				

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	2. Write effective scripts using JavaScript core objects, properties, and methods, including the Array, Math, String, and Date objects.				
CIS 14B Web Programming: Active Server Pages					
	1. Identify and employ the various components of the ASP object model.				
	Generalize appropriately from specific contexts				
	Locate, evaluate and use information effectively				
	2. Create client-side and server-side programs that will run successfully in a web browser.				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	5. Create Web sites that successfully employ form data validation, form processing, and data manipulation.				
	Integrate knowledge across a range of contexts				
	4. Create ASP scripts that successfully access, retrieve, and update databases on the Web.				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	3. Create ASP scripts that control the dynamic positioning and movement of objects on a Web page.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
CIS 14B Web Programming: Active Server Pages					
	1. Identify and employ the various components of the ASP object model.				
	3. Create ASP scripts that control the dynamic positioning and movement of objects on a Web page.				
	2. Create client-side and server-side programs that will run successfully in a web browser.				
	4. Create ASP scripts that successfully access, retrieve, and update databases on the Web.				
	5. Create Web sites that successfully employ form data validation form processing, and data manipulation.				
CIS 15A Visual Basic Programming: Objects					
	Design, create, test, debug, and implement Windows based applications in Visual Basic.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Design and create user-friendly multiple form applications that make appropriate use of a variety of Windows controls.				

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	Generalize appropriately from specific contexts				
	Maintain and transfer academic and technical skills to workplace				
	Design and create applications that make use of a variety of objects and their properties and methods.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Design and create applications that effectively incorporate strings, arrays, and files.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Design and create applications that make effective use of graphics and multimedia.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
CIS 15A Visual Basic Programming: Objects					
	Design, create, test, debug, and implement Windows based applications in Visual Basic.				
	Design and create applications that make effective use of graphics and multimedia.				
	Design and create applications that make use of a variety of objects and their properties and methods.				
	Design and create user-friendly multiple form applications that make appropriate use of a variety of Windows controls.				
	Design and create applications that effectively incorporate strings, arrays, and files.				
CIS 15B Visual Basic Programming: Adv Objects					
	1. Design and create Visual Basic applications that make use of classes and class hierarchies.				
	3. Create Visual Basic applications that make use of advanced Windows controls and Internet controls.				
	5. Design, create, and use ActiveX controls in a Visual Basic application.				
	2. Create Visual Basic applications that effectively manage a multiple document interface.				
	4. Create Visual Basic applications that call upon the Windows API and automate MS Office.				
CIS 15B Visual Basic Programming: Adv Objects					
	Design and create Visual Basic applications that make use of classes and class hierarchies.				

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	Create Visual Basic applications that effectively manage a multiple document interface.				
	Design, create, and use ActiveX controls in a Visual Basic application.				
	Create Visual Basic applications that call upon the Windows API and automate MS Office.				
	Create Visual Basic applications that make use of advanced Windows controls and Internet controls.				
<b>CIS 15C Visual Basic Programming: Databases</b>					
	1. Design and create Visual Basic applications that access, modify, and display external databases without the use of bound controls.				
	2. Create Visual Basic applications that display database information in a variety of data bound controls on a form and allow validated user modifications to the database.				
	3. Create Visual Basic applications that produce professional looking database reports.				
<b>CIS 15C Visual Basic Programming: Databases</b>					
	Design and create Visual Basic applications that access, modify, and display external databases without the use of bound controls.				
	Create Visual Basic applications that produce professional looking database reports.				
	Create Visual Basic applications that display database information in a variety of data bound controls on a form and allow validated user modifications to the database.				
<b>CIS 16A Programming Games with DirectX, OpenGL</b>					
	Write medium to large C++ game programs individually and as part of a programming team effort.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Demonstrate the use of major components of DirectX Graphics, DirectX Audio, DirectXPlay, DirectInput, and Physics Modeling with OpenGL.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Implement multimedia programming concepts, which include graphics, sound effects and music, input devices, and animation.				
	Recognize and assess evidence from a variety of sources				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				

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	Create C++ game programs that use DirectX and OpenGL application programming interfaces.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Maintain and transfer academic and technical skills to workplace				
<b>CIS 16A Programming Games with DirectX, OpenGL</b>					
	Write medium to large C++ game programs individually and as part of a programming team effort.				
	Demonstrate the use of major components of DirectX Graphics, DirectX Audio, DirectXPlay, DirectXInput, and Physics Modeling with OpenGL.				
	Implement multimedia programming concepts, which include graphics, sound effects and music, input devices, and animation.				
	Create C++ game programs that use DirectX and OpenGL application programming interfaces.				
<b>CIS 17A C++ Programming: Objects</b>					
	Analyze and understand the Object-Oriented C++ environment.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Demonstrate specified problem-solving and software design skills using the C++ language.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Apply theoretical gaming, business, scientific, and mathematical concepts in writing and executing programs in the C++ language using Object-Oriented programming methodology.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Demonstrate the use of specialized terminology, directives, and features of the C++ language.				
	Demonstrate computer literacy				

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	Locate, evaluate and use information effectively				
CIS 17A C++ Programming: Objects					
	Analyze and understand the Object-Oriented C++ environment.				
	Apply theoretical gaming, business, scientific, and mathematical concepts in writing and executing programs in the C++ language using Object-Oriented programming methodology.				
	Demonstrate specified problem-solving and software design skills using the C++ language.				
	Demonstrate the use of specialized terminology, directives, and features of the C++ language.				
CIS 17B C++ Programming: Advanced Objects					
	Write medium to large C++ programs individually and as part of a programming team effort.				
	Create programs that run in a multiprocessor environment.				
	Use C++ database connectivity "ODBC" with basic SQL to maintain and update records.				
	Establish client/server connections with stream sockets.				
	Implement multimedia concepts, which include images, audio, video, and animation.				
CIS 17B C++ Programming: Advanced Objects					
	Write medium to large C++ programs individually and as part of a programming team effort.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Create programs that run in a multiprocessor environment.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Establish client/server connections with stream sockets.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Use C++ database connectivity "ODBC" with basic SQL to maintain and update records.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				

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	Locate, evaluate and use information effectively				
	Implement multimedia concepts, which include images, audio, video, and animation.				
	Analyze experimental results and draw reasonable conclusions from them				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Locate, evaluate and use information effectively				
CIS 17C C++ Programming: Data Structures					
	Analyze and understand the use of data structures in the development of algorithms.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				
	Analyze application requirements to identify data structures with matching capabilities.				
	Analyze experimental results and draw reasonable conclusions from them				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Apply theoretical business, scientific, and mathematical concepts to write and execute computer programs in the C++ language using data structures.				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Integrate knowledge across a range of contexts				
	Design and create C++ programs using stacks, trees, queues, lists and trees.				
	Analyze experimental results and draw reasonable conclusions from them				
	Recognize and assess evidence from a variety of sources				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
CIS 17C C++ Programming: Data Structures					
	Analyze and understand the use of data structures in the development of algorithms.				
	Apply theoretical business, scientific, and mathematical concepts to write and execute computer programs in the C++ language using data structures.				
	Design and create C++ programs using stacks, trees, queues, lists and trees.				



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	Analyze application requirements to identify data structures with matching capabilities.				
CIS 17E iPhone/iPad Programming: Objective C					
	Demonstrate the use of specialized terminology, directives, and features of the iPhone SDK.				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				
	Analyze and understand the Object-Oriented iPhone environment.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Demonstrate specified problem-solving and software design skills using the iPhone SDK.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Apply theoretical gaming, business, scientific, and mathematical concepts in writing and executing programs in the iPhone SDK using Object-Oriented programming methodology.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
CIS 18A Java Programming: Objects					
	Demonstrate an understanding of the fundamentals of object-oriented programming sufficient to create and use classes in programs.				
	Demonstrate an understanding of the Java programming environment and language sufficient to write small to medium sized programs.				
CIS 18A Java Programming: Objects					
	Demonstrate an understanding of the fundamentals of object-oriented programming sufficient to create and use classes in programs.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				

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	Demonstrate an understanding of the Java programming environment and language sufficient to write small to medium sized programs.					
	Analyze and solve complex problems across a range of academic and everyday contexts					
	Demonstrate computer literacy					
CIS 18B JAVA Programming: Advanced Objects						
	Create programs that run in a multiprocessor environment.					
	Implement multimedia concepts, which include images, audio, video, and animation.					
	Use Java database connectivity “JDBC” with basic SQL to maintain and update records.					
	Write medium to large Java programs individually and as part of a programming team effort.					
	Establish client/server connections with stream sockets.					
CIS 18B JAVA Programming: Advanced Objects						
	Write medium to large Java programs individually and as part of a programming team effort.					
	Analyze and solve complex problems across a range of academic and everyday contexts					
	Recognize and assess evidence from a variety of sources					
	Demonstrate computer literacy					
	Locate, evaluate and use information effectively					
	Create programs that run in a multiprocessor environment.					
	Analyze experimental results and draw reasonable conclusions from them					
	Analyze and solve complex problems across a range of academic and everyday contexts					
	Demonstrate computer literacy					
	Maintain and transfer academic and technical skills to workplace					
	Establish client/server connections with stream sockets.					
	Generalize appropriately from specific contexts					
	Integrate knowledge across a range of contexts					
	Use Java database connectivity “JDBC” with basic SQL to maintain and update records.					
	Generalize appropriately from specific contexts					
	Demonstrate computer literacy					
	Locate, evaluate and use information effectively					
	Implement multimedia concepts, which include images, audio, video, and animation.					
	Generalize appropriately from specific contexts					

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	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
CIS 18C Java Programming: Data Structures					
	Analyze resources associated with storage and computational complexity.				
	Develop data storage techniques for efficient manipulation and retrieval of data.				
	Compare data structure types and apply to theoretical business, scientific and mathematical problems.				
	Implement abstract data types.				
	Design algorithms using data structure concepts.				
CIS 18C Java Programming: Data Structures					
	Develop data storage techniques for efficient manipulation and retrieval of data.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				
	Analyze resources associated with storage and computational complexity.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				
	Design algorithms using data structure concepts.				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Compare data structure types and apply to theoretical business, scientific and mathematical problems.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				

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	Demonstrate computer literacy				
	Implement abstract data types.				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				
CIS 18D Data Structures and Algorithms					
	Develop and use tree and graph structures with their applications				
	Using Java collection framework to implement different data structures and applications including map and set implementation with their applications				
	Generalize appropriately from specific contexts				
	Introduction to generic type and programming in JAVA plus computing the complexity of recursive and non-recursive algorithms				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Representation strategies and implementation of some search and traversal algorithms				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Locate, evaluate and use information effectively				
CIS 19A Network+: Fundamentals of Computer Networking					
	Differentiate among processes, services and protocols.				
	Analyze TCP/IP protocols and address.				
	Compare the operation of common LAN protocols.				
	Define the layers of the OSI model and compare the functions of each layer.				
	Differentiate common internetworking devices and compare their functions.				
CIS 19A Network+: Fundamentals of Computer Networking					
	2. Analyze TCP/IP protocols and address.				
	3. Differentiate common internetworking devices and compare their functions.				
	5. Compare the operation of common LAN protocols.				
	1. Differentiate among processes, services and protocols.				
	4. Define the layers of the OSI model and compare the functions of each layer.				
CIS 1A Intro to Comp Info Sys					
	Identify the fundamental computer concepts and terminology used for input, processing, output, and storage.				

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	Identify the key features of a variety of software such as operating systems, word processors, spreadsheets, databases, communications and graphics.				
	Apply the principles of and solve problems with word processing, spreadsheet, database, communications and file management programs.				
	Understand the principles of computer security, ethics and privacy.				
	Demonstrate the principles of Internet research.				
	Understand and apply the principles of distance education software.				
	Use the Internet to send electronic messages.				
	Create electronic presentations with presentation graphics.				
CIS 1A Introduction to Computer Information Systems					
	1. Identify the fundamental computer concepts and terminology used for input, processing, output, and storage.				
	Demonstrate computer literacy				
	2. Identify the key features of a variety of software such as operating systems, word processors, spreadsheets, databases, communications and graphics.				
	Locate, evaluate and use information effectively				
	3. Apply the principles of and solve problems with word processing, spreadsheet, database, communications and file management programs.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	8. Understand and apply the principles of distance education software.				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				
	5. Use the Internet to send electronic messages.				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	6. Demonstrate the principles of Internet research.				
	Recognize and assess evidence from a variety of sources				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	7. Understand the principles of computer security, ethics and privacy.				

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	Demonstrate computer literacy				
	Demonstrate appreciation for civic responsibility and ethical behavior				
	Locate, evaluate and use information effectively				
4.	Create electronic presentations with presentation graphics.				
	Write with precision and clarity to express complex thought				
	Maintain and transfer academic and technical skills to workplace				
<b>CIS 1B Adv Concepts in CIS</b>					
	Identify the concepts and terminology used in file and database management, information systems development, and communications.				
	Apply advanced database skills to analyze and solve problems.				
	Apply advanced presentation skills to design and edit electronic presentations.				
	Apply advanced spreadsheet skills to analyze and solve problems.				
	Use the Internet to search for information and evaluate Internet resources.				
	Integrate, link and embed work processing documents, worksheets, charts and databases.				
	Apply advanced word processing skills to solve problems.				
<b>CIS 1B Advanced Concepts in CIS</b>					
	Identify the concepts and terminology used in file and database management, information systems development, and communications.				
	Read college-level materials with understanding and insight				
	Apply advanced word processing skills to solve problems.				
	Generalize appropriately from specific contexts				
	Apply advanced spreadsheet skills to analyze and solve problems.				
	Integrate knowledge across a range of contexts				
	Integrate, link and embed work processing documents, worksheets, charts and databases.				
	Integrate knowledge across a range of contexts				
	Apply advanced presentation skills to design and edit electronic presentations.				
	Write with precision and clarity to express complex thought				
	Use the Internet to search for information and evaluate Internet resources.				
	Demonstrate computer literacy				
	Locate, evaluate and use information effectively				

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	Apply advanced database skills to analyze and solve problems.				
	Integrate knowledge across a range of contexts				
CIS 2 Fundamentals of Systems Analysis					
	Demonstrate an understanding of systems analysis as applied to the effective use of computers in business operations.				
	Design output screens and reports, input screens, and user interface screens.				
	Analyze various user requirements applying structured analysis tools like Data Flow Diagrams, Data Dictionary and Process Description.				
	Analyze data with relational databases in mind and design normalized files.				
	Demonstrate an understanding of CASE tools.				
	Demonstrate an understanding of various developmental methodologies.				
CIS 2 Fundamentals of Systems Analysis					
	Demonstrate an understanding of systems analysis as applied to the effective use of computers in business operations.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Locate, evaluate and use information effectively				
	Analyze various user requirements applying structured analysis tools like Data Flow Diagrams, Data Dictionary and Process Description.				
	Recognize and assess evidence from a variety of sources				
	Integrate knowledge across a range of contexts				
	Demonstrate an understanding of CASE tools.				
	Demonstrate computer literacy				
	Read college-level materials with understanding and insight				
	Demonstrate an understanding of various developmental methodologies.				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Analyze data with relational databases in mind and design normalized files.				
	Analyze and solve complex problems across a range of academic and everyday contexts				

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	Locate, evaluate and use information effectively				
	Design output screens and reports, input screens, and user interface screens.				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
CIS 20 Systems Analysis and Design					
	Create cost benefit analysis using various tools available to compare alternative Developmental methodologies.				
	Demonstrate an understanding of Project Management tools like Gantt Charts and PERT/CPM Charts.				
	Convert the analysis and design specifications into a working model of a business information system.				
	Evaluate some of the CASE tools currently available on the market.				
	Demonstrate an understanding of System Architecture, Implementation, Operations, Support and Security.				
CIS 20 Systems Analysis and Design					
	Demonstrate an understanding of System Architecture, Implementation, Operations, Support and Security.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Create cost benefit analysis using various tools available to compare alternative Developmental methodologies.				
	Analyze experimental results and draw reasonable conclusions from them				
	Construct sound arguments and evaluate arguments of others				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
	Convert the analysis and design specifications into a working model of a business information system.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				



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	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Evaluate some of the CASE tools currently available on the market.				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
	Demonstrate an understanding of Project Management tools like Gantt Charts and PERT/CPM Charts.				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
CIS 200 Computer Information Services Work Experience					
	Relate theory and classroom knowledge to on-the-job situations.				
	Identify equipment, materials, processes, practices and supplies that are characteristic of a particular occupational workplace.				
	Demonstrate desirable attitudes and work habits consistent with occupational endeavors.				
CIS 200 Computer Information Services Work Experience					
	Identify equipment, materials, processes, practices and supplies that are characteristic of a particular occupational workplace.				
	Demonstrate desirable attitudes and work habits consistent with occupational endeavors.				
	Relate theory and classroom knowledge to on-the-job situations.				
CIS 21 Introduction to Operating Systems					
	Describe the overall role of an operating system in the functioning of a typical computer system.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Demonstrate the usage and administration of a variety of operating systems.				
	Demonstrate computer literacy				

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	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
	Identify the particular responsibilities and features of an operating system, particularly as they pertain to system performance.				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Apply basic network theory and how to setup network resources through the multiple versions of software.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Identify current hardware and how it interacts with operating systems.				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Demonstrate the basic functions and design of file systems found in Windows, UNIX, and Macintosh operating systems.				
	Recognize and assess evidence from a variety of sources				
	Demonstrate how various operating systems interface with input, output, and storage devices.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Locate, evaluate and use information effectively				
	Apply the theory behind operating systems and some the components of each operating system.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
CIS 21 Introduction to Operating Systems					
	Describe the overall role of an operating system in the functioning of a typical computer system.				
	Demonstrate the usage and administration of a variety of				

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	operating systems.				
	Apply basic network theory and how to setup network resources through the multiple versions of software.				
	Demonstrate the basic functions and design of file systems found in Windows, UNIX, and Macintosh operating systems.				
	Demonstrate how various operating systems interface with input, output, and storage devices.				
	Identify current hardware and how it interacts with operating systems.				
	Apply the theory behind operating systems and some the components of each operating system.				
<b>CIS 21A Linux Operating System Administration</b>					
	Describe the overall role the administrator in relation to the Linux operating system.				
	Install the Linux operating system on desktops and servers.				
	Perform maintenance of business systems for update, security and backups.				
	Relate operating system theory to the installation and maintenance of Linux in the business environment.				
	Identify and perform all system administrator responsibilities.				
<b>CIS 21A Linux Operating System Administration</b>					
	Describe the overall role the administrator in relation to the Linux operating system.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Install the Linux operating system on desktops and servers.				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Relate operating system theory to the installation and maintenance of Linux in the business environment.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				

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	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				
	Perform maintenance of business systems for update, security and backups.				
	Analyze experimental results and draw reasonable conclusions from them				
	Demonstrate computer literacy				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Identify and perform all system administrator responsibilities.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
CIS 22A Robotics: Introductory Programming					
	Design robots using a predefined parts library.				
	Implement the 7 constructs of computer programming fundamentals.				
	Develop simple behavior based programs that navigate a robot in the virtual world.				
	Debug simple programs.				
CIS 22A Robotics: Introductory Programming					
	Design robots using a predefined parts library.				
	Debug simple programs.				
	Implement the 7 constructs of computer programming fundamentals.				
	Develop simple behavior based programs that navigate a robot in the virtual world.				
CIS 22B Robotics: Intermediate Programming					
	Develop object oriented programs that sense the environment and navigate a robot in the real world.				
	Design and build robots using preconfigured microcontrollers and servers.				
CIS 22B Robotics: Intermediate Programming					
	Develop object oriented programs that sense the environment and navigate a robot in the real world.				
	Design and build robots using preconfigured microcontrollers and servers.				

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CIS 23 Software End User Support					
	2. Apply the fundamental concepts of operating systems and network software.				
	1. Demonstrate the principles of configuration, memory management and diagnostic utilities to optimize computer performance.				
	3. Identify the functions of computer microprocessors, memory and peripheral components.				
CIS 23 Software End User Support					
	Demonstrate the principles of configuration, memory management and diagnostic utilities to optimize computer performance.				
	Identify the functions of computer microprocessors, memory and peripheral components.				
	Apply the fundamental concepts of operating systems and network software.				
CIS 25 Introduction to Data Communications					
	Identify the fundamental concepts and terminology used in data communications.				
	Plan, analyze, design and implement computer communications networks.				
	Apply the principles of current data communications technology to business applications.				
CIS 25 Introduction to Data Communications					
	Apply the principles of current data communications technology to business applications.				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Identify the fundamental concepts and terminology used in data communications.				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
	Construct network policies and network security policies to include privacy, acceptable use, authentication, internet, access, auditing, and data protection.				
	Analyze and apply network communications protocols, including broadcast domain, subnet mask, classless interdomain routing (CIDR), loopback address, and IP Addressing.				

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	Demonstrate network troubleshooting skills including problems with, cabling, adapter card, driver, network operations, network printing, client/server computing, network accounts, data security, and network communications.				
	Plan, analyze, design and implement computer communications networks.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	CIS 26A Cisco Networking Academy 1A				
	Demonstrate an understanding of IP addressing.				
	Demonstrate an understanding of the OSI model and the seven layers.				
	Demonstrate an understanding of the essentials to communicate on a LAN/WAN network.				
	Demonstrate an understanding of the application of the binary numbering system.				
	Demonstrate an understanding routing fundamentals and subnets.				
	Analyze and evaluate the concepts of networking and cabling.				
	CIS 26A Cisco Networking Academy 1A				
	Demonstrate an understanding of IP addressing.				
	Demonstrate an understanding of the OSI model and the seven layers.				
	Demonstrate an understanding routing fundamentals and subnets.				
	Analyze and evaluate the concepts of networking and cabling.				
	Demonstrate an understanding of the application of the binary numbering system.				
	Demonstrate an understanding of the essentials to communicate on a LAN/WAN network.				
	CIS 26B Cisco Networking Academy 1B				
	Create a standard ACL and an extended ACL and apply it to the proper interface.				

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	Define and explain the common ports on a router.				
	Define the steps and commands to configure distance vector routing protocols (RIP/IGRP).				
	Demonstrate the methods of troubleshooting Cisco IOS software.				
	Demonstrate how Ethernet, serial WAN, and console ports are properly connected.				
	Explain the command and steps required to configure router host tables, and interfaces.				
<b>CIS 26B Cisco Networking Academy 1B</b>					
	Define and explain the common ports on a router.				
	Demonstrate how Ethernet, serial WAN, and console ports are properly connected.				
	Create a standard ACL and an extended ACL and apply it to the proper interface.				
	Explain the command and steps required to configure router host tables, and interfaces.				
	Define the steps and commands to configure distance vector routing protocols (RIP/IGRP).				
	Demonstrate the methods of troubleshooting Cisco IOS software.				
<b>CIS 26C Cisco Networking Academy 1C</b>					
	Demonstrate an understanding of Single-Area OSPF.				
	Define and describe the Spanning Tree Protocol and its benefits.				
	Demonstrate an understanding of switching concepts and LAN design.				
	Demonstrate an understanding of classless routing.				
	Define and understanding the use of Virtual LANs.				
	Demonstrate an understanding of virtual LAN trunking protocol.				
<b>CIS 26D Cisco Networking Academy 1D</b>					
	Demonstrate an understanding of Frame Relay.				
	Define and understand the concepts of ISDN networking.				
	Demonstrate an understanding of maps and sub interfaces.				
	Demonstrate WAN link options.				
	Demonstrate an understanding of segmentation using WAN				

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	design.				
	Describe Cisco's implementation of ISDN.				
CIS 26E Cisco Networking Academy 2A					
	Select and implement the technologies necessary to redistribute between and to support multiple, advanced, IP routing protocols, given a network specification.				
	Configure and test edge router connectivity (either single or multihomed connection) into a BGP network, given a network specification.				
	Configure access lists, given a need to control access to devices and to selectively reduce overhead traffic in the network.				
	Implement technologies to redistribute and support multiple, advanced, IP routing protocols such as OSPF, EIGRP, and BGP.				
	Select and configure a scalable IP address solution (including route summarization) for a branch office environment, given a list of specifications.				
	Implement solutions in a laboratory environment given a specification containing multiple routed and routing protocols.				
CIS 26F Cisco Networking Security					
	Analyze and understand the use of encryption methods in network security.				
	Recognize and assess evidence from a variety of sources				
	Demonstrate computer literacy				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Analyze and understand firewall interface configuration and using zone-based firewalls.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Demonstrate the use of number of security systems and configure routers to watch for attacks.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
	Design basic security policy development and implementation using VPN.				
	Write with precision and clarity to express complex thought				



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	Read college-level materials with understanding and insight				
	Analyze and understand AAA Radius configuration, authentication, authorization and accounting components.				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Demonstrate teamwork skills				
	Demonstrate the use of Packet Tracer software and NetLab equipment.				
	Demonstrate the techniques of designing and implementing security systems.				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
CIS 27 Information & Network Security					
	List and define the major categories of scanning and analysis tools, and describe the specific tools used within each of these categories.				
	Evaluate a contingency plan and how incident response planning, disaster recovery planning, and business continuity plans are related.				
	Design firewall technology and various approaches to firewall, describe the technology that enables the use of Virtual Private Networks and identify the various approaches to remote and dial-up access protection.				
	Analyze what an information security blueprint is, what its major components are, and how it is used.				
	Explain the purposes and functions of information security, describe the history of computer security and apply effective information security techniques.				
CIS 27 Information and Network Security					
	Explain the purposes and functions of information security: <ul style="list-style-type: none"> <li>- Describe the history of computer security.</li> <li>- Apply effective information security techniques.</li> </ul>				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Analyze what an information security blueprint is, what its major components are, and how it is used.				

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	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	List and define the major categories of scanning and analysis tools, and describe the specific tools used within each of these categories.				
	Analyze experimental results and draw reasonable conclusions from them				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Design firewall technology and various approaches to firewall: - Describe the technology that enables the use of Virtual Private Networks. - Identify the various approaches to remote and dial-up access protection.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Evaluate a contingency plan and how incident response planning, disaster recovery planning, and business continuity plans are related.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				

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	Locate, evaluate and use information effectively				
CIS 28A MS Access Programming					
	Design and document a database.				
	Demonstrate the use of import wizards, advanced queries, and SQL.				
	Design complex Forms and Reports.				
	Demonstrate error trapping and automating ActiveX Controls with VBA.				
	Apply VBA code at various locations within a database.				
	Connect to the World Wide Web using MS Access.				
	Demonstrate how to secure a database.				
	Customize the user interface.				
CIS 28A MS Access Programming					
	Design and document a database.				
	Demonstrate the use of import wizards, advanced queries, and SQL.				
	Design complex Forms and Reports.				
	Connect to the World Wide Web using MS Access.				
	Apply VBA code at various locations within a database.				
	Demonstrate error trapping and automating ActiveX Controls with VBA.				
	Demonstrate how to secure a database.				
	Customize the user interface.				
CIS 29A Introduction to Oracle					
	Implement Oracle databases.				
	Use Oracle object capabilities to create efficient, reusable code.				
	Utilize SQL and PL/SQL to retrieve and manipulate data.				
	Enforce data integrity and establish security.				
	Design database applications.				
	Employ methods, VARRAYs, and nested tables.				
	Develop PL/SQL programs to access Oracle databases.				
	Manage data retrieval with explicit and implicit cursors.				
	Create stored procedures.				

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	Write structured PL/SQL code with packages and triggers.				
CIS 29A Introduction to Oracle					
	Implement Oracle databases.				
	Use Oracle object capabilities to create efficient, reusable code.				
	Utilize SQL and PL/SQL to retrieve and manipulate data.				
	Enforce data integrity and establish security.				
	Design database applications.				
	Employ methods, VARRAYs, and nested tables.				
	Develop PL/SQL programs to access Oracle databases.				
	Manage data retrieval with explicit and implicit cursors.				
	Create stored procedures.				
	Write structured PL/SQL code with packages and triggers.				
CIS 29B Oracle Application Development					
	Design and implement database applications.				
	Use Oracle data types and techniques.				
	Load external data.				
	Enforce data integrity in application design.				
	Integrate forms, reports, and charts into a single application.				
	Utilize the Developer Utility.				
	Apply Graphical User Interface design principles.				
	Create tabular, master-detail, and matrix reports.				
	Define chart items and graphical displays.				
	Perform debugging and implement error handling.				
CIS 29B Oracle Application Development					
	Design and implement database applications.				
	Perform debugging and implement error handling.				
	Define chart items and graphical displays.				
	Integrate forms, reports, and charts into a single application.				
	Create tabular, master-detail, and matrix reports.				
	Load external data.				

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	Enforce data integrity in application design.				
	Utilize the Developer Utility.				
	Apply Graphical User Interface design principles.				
	Use Oracle data types and techniques.				
<b>CIS 29C Oracle Database and Server Administration</b>					
	Configure and manage Oracle databases.				
	Understand the Oracle architecture.				
	Manage user accounts.				
	Perform effective storage management.				
	Tune the Oracle server.				
	Select backup and recovery procedures.				
	Utilize Recovery Manager.				
	Troubleshoot the Oracle database with events and trace files.				
	Implement partitions.				
<b>CIS 29C Oracle Database and Server Administration</b>					
	Configure and manage Oracle databases.				
	Understand the Oracle architecture.				
	Manage user accounts.				
	Perform effective storage management.				
	Tune the Oracle server.				
	Select backup and recovery procedures.				
	Utilize Recovery Manager.				
	Troubleshoot the Oracle database with events and trace files.				
	Implement partitions.				
<b>CIS 3 Comp Appl-Wrkng Professionals</b>					
	Demonstrate the ability to complete integrated documents using word processing, spreadsheets, databases, presentation graphics software applications.				
	Utilize scanners and related software to scan, optimize, and manage documents and images.				
	Apply design and development techniques that utilize software				

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	programs in word processing, spreadsheets, databases, presentation graphics, scheduling/time management.				
	Demonstrate use of Web browsers to browse, search for information, and upload and download files from the Internet.				
	Apply operating system skills to navigate within, run programs, and organize files and folders.				
	Apply the use of PIM software for scheduling and time management.				
CIS 34A Intro MS Word for Windows					
	Demonstrate the principles of word processing software.				
	Apply problem-solving principles to job-related word processing.				
	Identify functions and applications of basic word processing using Microsoft Word.				
CIS 34A Intro MS Word for Windows					
	Demonstrate the principles of word processing software.				
	Apply problem-solving principles to job-related word processing.				
	Identify functions and applications of basic word processing using Microsoft Word.				
CIS 34B Intermed Word for Windows					
	Apply problem-solving techniques in working from rough draft-to-finished copy.				
	Evaluate and use word processing software skills and techniques to enhance documents at a professional level.				
	Apply intermediate principles of word processing using Microsoft Word for Windows functions.				
CIS 35 Intro Simulation and Game Development					
	Examine and critically discuss the various industries which use simulation and computer gaming and the methods of which gaming is used.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Speak with precision and clarity to express complex thought				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				

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		PLOs	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Examine and differentiate the business aspects of game development from concept to commercialization such as concept pitch, planning and scheduling, and promotional tools.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
	Identify career paths and understand the job market outlook and education requirements for computer gaming professionals.				
	Maintain and transfer academic and technical skills to workplace				
	Set goals and devise strategies for personal and professional development and well being				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	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.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Demonstrate an appreciation of the interactions between business, industry and the creative process of game design.				
	Recognize and assess evidence from a variety of sources				
	Identify one's own and others' assumptions, biases, and their consequences				
	Respond to and evaluate artistic expression				
	Locate, evaluate and use information effectively				
	Analyze, discuss, and apply the principles of theoretically sound game design.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
CIS 35 Intro Simulation and Game Development					
	Examine and critically discuss the various industries which use simulation and computer gaming and the methods				

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		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	of which gaming is used.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Speak with precision and clarity to express complex thought				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Examine and differentiate the business aspects of game development from concept to commercialization such as concept pitch, planning and scheduling, and promotional tools.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
	Identify career paths and understand the job market outlook and education requirements for computer gaming professionals.				
	Maintain and transfer academic and technical skills to workplace				
	Set goals and devise strategies for personal and professional development and well being				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	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.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Demonstrate an appreciation of the interactions between business, industry and the creative process of game design.				
	Recognize and assess evidence from a variety of sources				
	Identify one's own and others' assumptions, biases, and their consequences				
	Respond to and evaluate artistic expression				



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<b>RIVERSIDE COMMUNITY COLLEGE DISTRICT SLO BY SUBJECT</b>		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Locate, evaluate and use information effectively				
	Analyze, discuss, and apply the principles of theoretically sound game design.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
<b>CIS 35 Intro Simulation and Game Development</b>					
	Examine and critically discuss the various industries which use simulation and computer gaming and the methods of which gaming is used.				
	Analyze, discuss, and apply the principles of theoretically sound game design.				
	Demonstrate an appreciation of the interactions between business, industry and the creative process of game design.				
	Identify career paths and understand the job market outlook and education requirements for computer gaming professionals.				
	Examine and differentiate the business aspects of game development from concept to commercialization such as concept pitch, planning and scheduling, and promotional tools.				
	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.				
<b>CIS 36 Intro Computer Game Design</b>					
	Examine and critically discuss the various genres of computer games.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Identify, examine and differentiate various aspects that make a game fun and compelling.				

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		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Respond to and evaluate artistic expression				
	Locate, evaluate and use information effectively				
	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Develop and revise games and/or simulations that implement established game design principles.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Apply the principles of theoretically sound game design including gameplay, core mechanics, game balancing and level design.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
<b>CIS 36 Intro Computer Game Design</b>					
	Examine and critically discuss the various genres of computer games.				
	Apply the principles of theoretically sound game design including gameplay, core mechanics, game balancing and level design.				
	Develop and revise games and/or simulations that implement established game design principles.				
	Identify, examine and differentiate various aspects that make a				

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RIVERSIDE COMMUNITY COLLEGE DISTRICT SLO BY SUBJECT		PLOs	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	game fun and compelling.				
	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.				
CIS 36 Intro Computer Game Design					
	Examine and critically discuss the various genres of computer games.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Identify, examine and differentiate various aspects that make a game fun and compelling.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Respond to and evaluate artistic expression				
	Locate, evaluate and use information effectively				
	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Develop and revise games and/or simulations that implement established game design principles.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Apply the principles of theoretically sound game design including gameplay, core mechanics, game balancing and				

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		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	level design.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
<b>CIS 37 Beginning Level Design/Computer Games</b>					
	Identify and critically discuss the basics of game design.				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
	Examine and illustrate various aspects that make a game fun and compelling.				
	Analyze experimental results and draw reasonable conclusions from them				
	Read college-level materials with understanding and insight				
	Respond to and evaluate artistic expression				
	Locate, evaluate and use information effectively				
	Demonstrate the concept of game “flow” and how to design levels to keep the user in a game flow state.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Analyze and apply the principles of theoretically sound game level design including placing challenges, moving objects, game balancing.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Examine, discuss and apply genre specific strategies to level design.				
	Write with precision and clarity to express complex thought				

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		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Read college-level materials with understanding and insight				
	Speak with precision and clarity to express complex thought				
	Locate, evaluate and use information effectively				
	Apply scripting tools to level design.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Apply terrain, environment and lighting effects to add interest and challenges to level design.				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
<b>CIS 37 Beginning Level Design/Computer Games</b>					
	Demonstrate the concept of game “flow” and how to design levels to keep the user in a game flow state.				
	Apply terrain, environment and lighting effects to add interest and challenges to level design.				
	Examine, discuss and apply genre specific strategies to level design.				
	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.				
	Identify and critically discuss the basics of game design.				
	Examine and illustrate various aspects that make a game fun and compelling.				
	Analyze and apply the principles of theoretically sound game level design including placing challenges, moving objects, game balancing.				
	Apply scripting tools to level design.				
<b>CIS 37 Beginning Level Design/Computer Games</b>					
	Identify and critically discuss the basics of game design.				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
	Examine and illustrate various aspects that make a game fun and compelling.				
	Analyze experimental results and draw reasonable conclusions from them				

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<b>RIVERSIDE COMMUNITY COLLEGE DISTRICT SLO BY SUBJECT</b>		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Read college-level materials with understanding and insight				
	Respond to and evaluate artistic expression				
	Locate, evaluate and use information effectively				
	Demonstrate the concept of game “flow” and how to design levels to keep the user in a game flow state.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Analyze and apply the principles of theoretically sound game level design including placing challenges, moving objects, game balancing.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Examine, discuss and apply genre specific strategies to level design.				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Speak with precision and clarity to express complex thought				
	Locate, evaluate and use information effectively				
	Apply scripting tools to level design.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Apply terrain, environment and lighting effects to add interest and challenges to level design.				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
CIS 38A Sim Gaming/3D Modeling					

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		PLOs	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Classify the fundamental components and attributes of a tri/quad mesh or spline.				
	Read college-level materials with understanding and insight				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Locate, evaluate and use information effectively				
	Classify the fundamental components and attributes of a simulation environment.				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Calibrate articulated rigid bodies to interact with a user or simulation environment.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Assemble the organized components of a tri/quad mesh, or spline using one or more rigid bodies within a simulation environment or game engine.				
	Analyze experimental results and draw reasonable conclusions from them				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Manipulate the fundamental components and attributes of a simulation environment, tri/quad mesh, and spline.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
CIS 38A Sim Gaming/3D Modeling					
	Manipulate the fundamental components and attributes of a simulation environment, tri/quad mesh, and spline.				
	Classify the fundamental components and attributes of a tri/quad mesh or spline.				
	Calibrate articulated rigid bodies to interact with a user or				

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		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	simulation environment.				
	Assemble the organized components of a tri/quad mesh, or spline using one or more rigid bodies within a simulation environment or game engine.				
	Classify the fundamental components and attributes of a simulation environment.				
<b>CIS 38A Sim Gaming/3D Modeling</b>					
	Classify the fundamental components and attributes of a tri/quad mesh or spline.				
	Read college-level materials with understanding and insight				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Locate, evaluate and use information effectively				
	Classify the fundamental components and attributes of a simulation environment.				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Calibrate articulated rigid bodies to interact with a user or simulation environment.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Assemble the organized components of a tri/quad mesh, or spline using one or more rigid bodies within a simulation environment or game engine.				
	Analyze experimental results and draw reasonable conclusions from them				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Manipulate the fundamental components and attributes of a simulation environment, tri/quad mesh, and spline.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				



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CIS 38B Sim Gaming/3D Animation					
	Distinguish and define various methods of animation as they apply to real-time interactive simulations.				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Distinguish and define forward and reverse kinematics, root, and chain as it applies to a skeleton.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Calibrate animated articulated rigid bodies to interact with a user or simulation environment.				
	Analyze experimental results and draw reasonable conclusions from them				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Assemble animated sequences within a simulation environment or game engine and map them onto articulated rigid bodies.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Construct linear, non-linear, path constrained, forward kinematic, and reverse kinematic animations.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
CIS 38B Sim Gaming/3D Animation					

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	Distinguish and define various methods of animation as they apply to real-time interactive simulations.				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Distinguish and define forward and reverse kinematics, root, and chain as it applies to a skeleton.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Calibrate animated articulated rigid bodies to interact with a user or simulation environment.				
	Analyze experimental results and draw reasonable conclusions from them				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Assemble animated sequences within a simulation environment or game engine and map them onto articulated rigid bodies.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Construct linear, non-linear, path constrained, forward kinematic, and reverse kinematic animations.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
CIS 38B Sim Gaming/3D Animation					
	Distinguish and define various methods of animation as they apply to real-time interactive simulations.				

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<b>RIVERSIDE COMMUNITY COLLEGE DISTRICT SLO BY SUBJECT</b>		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Distinguish and define forward and reverse kinematics, root, and chain as it applies to a skeleton.				
	Assemble animated sequences within a simulation environment or game engine and map them onto articulated rigid bodies.				
	Calibrate animated articulated rigid bodies to interact with a user or simulation environment.				
	Construct linear, non-linear, path constrained, forward kinematic, and reverse kinematic animations.				
<b>CIS 38C Sim Gaming/Dynamics/Rendering</b>					
	Assemble and assign an advanced shading network onto a model created with a 3D modeling application.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Produce sequences of frames rendered from a digitally modeled and animated scene.				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Incorporate an animated sequence of rendered frames into a game engine.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Classify, calibrate, and assemble dynamic forces and elements in a digitally modeled scene.				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Create and organize various light sources and modify their attributes.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
<b>CIS 38C Sim Gaming/Dynamics/Rendering</b>					

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	Assemble and assign an advanced shading network onto a model created with a 3D modeling application.				
	Create and organize various light sources and modify their attributes.				
	Classify, calibrate, and assemble dynamic forces and elements in a digitally modeled scene.				
	Produce sequences of frames rendered from a digitally modeled and animated scene.				
	Incorporate an animated sequence of rendered frames into a game engine.				
<b>CIS 38C Sim Gaming/Dynamics/Rendering</b>					
	Assemble and assign an advanced shading network onto a model created with a 3D modeling application.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Produce sequences of frames rendered from a digitally modeled and animated scene.				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Incorporate an animated sequence of rendered frames into a game engine.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Classify, calibrate, and assemble dynamic forces and elements in a digitally modeled scene.				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Integrate knowledge across a range of contexts				
	Create and organize various light sources and modify their attributes.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				

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<b>RIVERSIDE COMMUNITY COLLEGE DISTRICT SLO BY SUBJECT</b>		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Integrate knowledge across a range of contexts				
<b>CIS 39 Current Techniques in Game Art</b>					
	Identify and apply the authoring tools used for simulation game development, concept art, and illustration.				
	Create textures for 3D objects.				
	Create 3D elements for use in simulations, gaming platforms, and animation.				
	Use layers to composite 3D environments.				
	Analyze, create, and apply textures.				
<b>CIS 39 Current Techniques in Game Art</b>					
	Identify and apply the authoring tools used for simulation game development, concept art, and illustration.				
	Create textures for 3D objects.				
	Create 3D elements for use in simulations, gaming platforms, and animation.				
	Use layers to composite 3D environments.				
	Analyze, create, and apply textures.				
<b>CIS 3A Linux Computer Applications for Working Professionals</b>					
	Apply operating system skills to navigate, run programs, and organize files and folders.				
	Apply design and development techniques that utilize software programs in word processing, spreadsheets, databases, presentation graphics, scheduling/time management.				
	Demonstrate use of Web browsers to browse, search for information, and upload and download files from the Internet.				
	Demonstrate the ability to complete integrated documents using word processing, spreadsheets, databases, presentation graphics software applications.				
<b>CIS 3A Linux Computer Applications for Working Professionals</b>					
	Apply operating system skills to navigate, run programs, and organize files and folders.				
	Demonstrate use of Web browsers to browse, search for information, and upload and download files from the Internet.				
	Demonstrate the ability to complete integrated documents using word processing, spreadsheets, databases, presentation graphics software applications.				
	Apply design and development techniques that utilize software programs in word processing, spreadsheets, databases, presentation graphics, scheduling/time management.				
<b>CIS 43 Survey of Media Art for Game Design/Animation</b>					

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Identify and apply the authoring tools and techniques used for creation of Graphical User Interfaces (GUI)					
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
Employ techniques used in creating textures for 3D assets					
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Locate, evaluate and use information effectively				
Create assets for use in simulations, gaming platforms, and animation					
	Demonstrate computer literacy				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
Employ techniques used in the creation of stylized concept art and illustration					
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Maintain and transfer academic and technical skills to workplace				
Apply layers to composite background painting environments					
	Demonstrate computer literacy				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
Analyze, create, and apply custom textures to objects					
	Demonstrate computer literacy				
	Understand the basic content and modes of inquiry of the major knowledge fields				

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	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
CIS 44 Portfolio Production					
	Create a DVD demo reel which includes motion graphics, video and audio clips and an industry standard flowchart for navigating a DVD				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Consider and assess student portfolio work based on content, creativity, presentation, craftsmanship, originality, and achievement of goals				
	Identify one's own and others' assumptions, biases, and their consequences				
	Listen thoughtfully and respectfully to the ideas of others				
	Respond to and evaluate artistic expression				
	Participate in constructive social interaction				
	Integrate knowledge across a range of contexts				
	Employ professional interview skills in a mock interview setting including presentation of individual portfolio				
	Identify one's own and others' assumptions, biases, and their consequences				
	Speak with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Participate in constructive social interaction				
	Integrate knowledge across a range of contexts				
	Organize student information and experience and prepare a creative, professional resume, cover letter, and follow-up letter				
	Consider and evaluate rival hypotheses				

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	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Listen thoughtfully and respectfully to the ideas of others				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Participate in constructive social interaction				
	Locate, evaluate and use information effectively				
	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				
	Recognize and assess evidence from a variety of sources				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Maintain and transfer academic and technical skills to workplace				
	Participate in constructive social interaction				
	Integrate knowledge across a range of contexts				
<b>CIS 5 Fundamentals of Programming Logic Using C++</b>					
	Identify the information input requirements, synthesize the algorithmic steps needed to transform the data input into the required output information, and organize the output format to facilitate user communication.				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Demonstrate the use of the C++ IDE and libraries.				
	Demonstrate computer literacy				
	Apply the principles of logical programming concepts to develop specific solutions for gaming, business, scientific and mathematics problems.				
	Generalize appropriately from specific contexts				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Create computer programs in C++ using the principles of structured programming.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				



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	Demonstrate the fundamentals of computer programming, problem solving, and software design.				
CIS 5 Fundamentals of Programming Logic Using C++					
	Create computer programs in C++ using the principles of structured programming.				
	Apply the principles of logical and programming concepts to develop specific solutions for gaming, business, scientific and mathematics problems.				
	Identify the information input requirements, synthesize the algorithmic steps needed to transform the data input into the required output information, and organize the output format to facilitate user communication.				
	Demonstrate the fundamentals of computer programming, problem solving, and software design.				
	Demonstrate the use of the C++ IDE and libraries.				
CIS 52 Introduction to PDAs					
	Explain the purposes and functions of PDAs <ol style="list-style-type: none"> <li>1. Recall terms that relate to PDA features.</li> <li>2. Identify the common functions features, and built-in applications of PDAs.</li> </ol>				
	Demonstrate skills in initial set up, contact/address list creation, sending and receiving email, scheduling appointments, surfing the web, synchronizing information with a desktop computer, displaying electronic presentations, beaming files, and backing up/restoring data.				
	Describe three types of PDAs and PDA operating systems.				
	Create a plan for purchasing a PDA, accessories, and software.				
	Discuss future developments related to PDAs and Smartphone technology.				
	Analyze the categories of third-party software applications for personal, business, and teaching uses. <ol style="list-style-type: none"> <li>1. Identify at least three personal uses.</li> <li>2. Identify at least one software application for personal, business, and teaching uses.</li> </ol>				
CIS 52 Introduction to PDAs					
	3. Demonstrate skills in initial set up, contact/address list creation, sending and receiving email, scheduling appointments, surfing the web, synchronizing information with a desktop computer, displaying electronic presentations, beaming files, and backing up/restoring data.				
	Create a plan for purchasing a PDA, accessories, and software.				
	4. Analyze the categories of third-party software applications for personal, business, and teaching uses. a. Identify				

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	at least three personal uses. b. Identify at least one software application for personal, business, and teaching uses.				
	2. Explain the purposes and functions of PDAs a. Recall terms that relate to PDA features. b. Identify the common functions features, and built-in applications of PDAs.				
	1. Describe three types of PDAs and PDA operating systems.				
	Discuss future developments related to PDAs and Smartphone technology.				
CIS 54A Introduction to Flash					
	Demonstrate a mastery of authoring tools used for web page and training mediums.				
	Create symbols and instances, shape tweening, motion tweening, and bitmaps, to develop powerful and interactive Web sites and training CD's.				
	Create drawing, animation basics, movie clips, action script basics.				
CIS 54A Introduction to Flash					
	1. Demonstrate a mastery of authoring tools used for web page and training mediums.				
	3. Create symbols and instances, shape tweening, motion tweening, and bitmaps, to develop powerful and interactive Web sites and training CD's.				
	2. Create drawing, animation basics, movie clips, action script basics.				
CIS 54B Flash Scripting					
	Assess the various elements of Flash such as variables, functions, event controllers, classes, loops, decision making statements, arrays, and memory management to build an engaging web site.				
	Recognize and assess evidence from a variety of sources				
	Maintain and transfer academic and technical skills to workplace				
	Assemble Flash script from external files to load content, such as event listener, gallery files in order to control all aspects of sounds, actions, colors, and email.				
	Write with precision and clarity to express complex thought				
	Integrate knowledge across a range of contexts				
	Design, debug, and use the Flash scripting language to create/load action video, and control sound.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Respond to and evaluate artistic expression				
CIS 56A Designing Web Graphics					
	Use Photoshop to design quality images that are optimized for the Web.				
	Use Photoshop and ImageReady to create and modify				

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	backgrounds, buttons, animated images, image maps, banners, logos, heading text, thumbnail images, and other web graphics.				
	Use Photoshop to apply the basic principles of page layout and design in creating Web page tracing images.				
	Use Photoshop to retouch photographs for use on the Web.				
<b>CIS 56A Designing Web Graphics</b>					
	Use Photoshop to design quality images that are optimized for the Web.				
	Use Photoshop to apply the basic principles of page layout and design in creating Web page tracing images				
	Use Photoshop to retouch photographs for use on the Web				
	Use Photoshop and ImageReady to create and modify backgrounds, buttons, animated images, image maps, banners, logos, heading text, thumbnail images, and other web graphics.				
<b>CIS 60 Introduction to Microsoft Access</b>					
	Design and maintain relational database tables.				
	Design and modify forms and reports.				
	Create normalized relationships between tables, apply validation rules and referential integrity principles to the database.				
	Create Select and Action Queries.				
<b>CIS 61 Intro to Database Theory</b>					
	Apply the techniques used to design and develop a database.				
	Create entity-relationship models.				
	Create the various table relationships.				
	Create a physical database.				
	Describe and implement the Systems Development Life Cycle.				
	Describe the history and development of database systems.				
	Define and demonstrate database normalization.				
	Analyze work group and enterprise models.				
<b>CIS 61 Intro to Database Theory</b>					
	Apply the techniques used to design and develop a database.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				

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	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Create entity-relationship models.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Create the various table relationships.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Create a physical database.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Describe and implement the Systems Development Life Cycle.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Locate, evaluate and use information effectively				
	Describe the history and development of database systems.				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
	Define and demonstrate database normalization.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				

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	Locate, evaluate and use information effectively				
	Analyze work group and enterprise models.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Demonstrate computer literacy				
	Read college-level materials with understanding and insight				
	Locate, evaluate and use information effectively				
CIS 62 MS Access DBMS: Comprehensive					
	Design and maintain relational database tables.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Create Select and Action Queries.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Utilize macros in forms and reports.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Design and modify forms and reports.				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Maintain and transfer academic and technical skills to workplace				
	Demonstrate how MS Access can interface with the Web.				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				

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	Create normalized relationships between tables, apply validation rules and referential integrity principles to the database				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
CIS 62 MS Access DBMS: Comprehensive					
	Design and maintain relational database tables.				
	Create Select and Action Queries.				
	Utilize macros in forms and reports.				
	Design and modify forms and reports.				
	Demonstrate how MS Access can interface with the Web.				
	Create normalized relationships between tables.				
CIS 63 Introduction to Structured Query Language (SQL)					
	Demonstrate the use of SQL syntax.				
	Develop a database structure using DDL commands.				
	Differentiate JOINS, DIFFERENCES, and UNIONS.				
	Perform compound SQL statements.				
	Contrast Access SQL statements with Oracle SQL statements.				
	Create both SELECT and action queries using SQL.				
CIS 63 Introduction to Structured Query Language (SQL)					
	Demonstrate the use of SQL syntax.				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Develop a database structure using DDL commands.				
	Generalize appropriately from specific contexts				
	Maintain and transfer academic and technical skills to workplace				
	Integrate knowledge across a range of contexts				

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	Locate, evaluate and use information effectively				
	Differentiate JOINS, DIFFERENCES, and UNIONS.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Integrate knowledge across a range of contexts				
	Perform compound SQL statements.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Integrate knowledge across a range of contexts				
	Contrast Access SQL statements with Oracle SQL statements.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Generalize appropriately from specific contexts				
	Read college-level materials with understanding and insight				
	Integrate knowledge across a range of contexts				
	Create both SELECT and action queries using SQL.				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
CIS 65 Introduction to Microsoft PowerPoint					
	Demonstrate the principles of effective presentations and apply techniques used to create effective presentations.				
	Apply functions and features of Microsoft PowerPoint to prepare printed and on-screen slides, speaker notes, audience handouts and outlines.				
	Create an organized presentation, apply consistent format and utilize art/graphics/media files in presentations.				
CIS 65 Introduction to Microsoft PowerPoint					
	2. Create an organized presentation, apply consistent format and utilize art/graphics/media files in presentations.				
	Apply functions and features of Microsoft PowerPoint to prepare printed and on-screen slides, speaker notes, audience handouts and outlines.				
	Demonstrate the principles of effective presentations and apply techniques used to create effective presentations.				
CIS 72A Introduction to Web Page Creation					

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	Design and create Web pages with Extensible Hypertext Markup Language (XHTML) using a text editor.				
	Create valid XHTML pages containing tables, frames, and forms.				
	Create and format a typical 5 to 10 page small business or personal Web site using XHTML and CSS inline styles.				
	Create valid, properly structured XHTML pages containing headings, paragraphs, hyperlinks, lists, and images.				
CIS 72A Introduction to Web Page Creation					
	Design and create Web pages with Extensible Hypertext Markup Language (XHTML) using a text editor.				
	Create and format a typical 5 to 10 page small business or personal Web site using XHTML and CSS styles.				
	Create valid XHTML pages containing tables and forms.				
	Create valid, properly structured XHTML pages containing headings, paragraphs, hyperlinks, lists, and images.				
CIS 72B Intermediate Web Page Creation Using Cascading Style Sheets (CSS)					
	Create Web pages with proper separation of structure (HTML) and presentation (CSS).				
	Analyze a given XHTML document lacking in formatting, create "div" and "span" tags where appropriate, and effectively apply CSS formatting to these tagged areas.				
	Apply formatting to Web page elements using a variety of CSS selection techniques including type, class, id, descendant, and pseudo-class selectors.				
	Create external style sheets that effectively control an entire Web site's formatting.				
	Apply CSS properties to control typography, backgrounds, color, spacing, borders, links, and page layout to achieve industry standard Web page formatting.				
CIS 72B Intermediate Web Page Creation Using Cascading Style Sheets (CSS)					
	Create Web pages with proper separation of structure (HTML) and presentation (CSS).				
	Analyze a given XHTML document lacking in formatting, create "div" and "span" tags where appropriate, and effectively apply CSS formatting to these tagged areas.				
	Create external style sheets that effectively control an entire Web site's formatting.				
	Apply CSS properties to control typography, backgrounds, color, spacing, borders, links, and page layout to achieve industry standard Web page formatting.				
	Apply formatting to Web page elements using a variety of CSS selection techniques including type, class, id, descendant, and pseudo-class selectors.				
CIS 72C Intro XML on World Wide Web					
	Demonstrate knowledge of XML's applications on the World Wide Web.				
	Create XML documents using XSL formatting.				
	Create well-formed XML documents.				



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CIS 72C Intro XML on World Wide Web					
	Create well-formed XML documents.				
	Demonstrate knowledge of XML's applications on the World Wide Web.				
	Create XML documents using XSL formatting.				
CIS 73A Intro Multimedia Author					
	Identify the concepts and terminology used in interactive multimedia authoring tools.				
	Identify the information input requirements, synthesize the algorithmic steps needed to transform the information input into the required output information, and to design a user-friendly interface to facilitate user communication of input and output.				
	Apply the principles of logical and programming concepts to develop specific solutions for interactive multimedia applications.				
	Integrate, link and embed text, audio, graphics, animation and digitized video in applications using current interactive multimedia authoring tools.				
CIS 73A Intro Multimedia Author					
	Identify the concepts and terminology used in interactive multimedia authoring tools.				
	Identify the information input requirements, synthesize the algorithmic steps needed to transform the information input into the required output information, and to design a user-friendly interface to facilitate user communication of input and output.				
	Apply the principles of logical and programming concepts to develop specific solutions for interactive multimedia applications.				
	Integrate, link and embed text, audio, graphics, animation and digitized video in applications using current interactive multimedia authoring tools.				
CIS 76A Introduction to Microsoft Expression Web					
	Analyze a web site, then utilize Microsoft Expression Web's template and library features to effectively reduce the effort required to maintain the site as it grows and changes.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Construct sound arguments and evaluate arguments of others				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Identify one's own and others' assumptions, biases, and their consequences				

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	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Listen thoughtfully and respectfully to the ideas of others				
	Speak with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Use Microsoft Expression Web's features to develop valid and accessible XHTML based web pages that include accessible images, site navigation, tables, and forms, as defined by the World Wide Web Consortium (W3C).				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Construct sound arguments and evaluate arguments of others				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Identify one's own and others' assumptions, biases, and their consequences				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Listen thoughtfully and respectfully to the ideas of others				
	Speak with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Respond to and evaluate artistic expression				

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	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Use Microsoft Expression Web's features to utilize image rollovers, form validation, and other industry standard behaviors and interactive content to build interactive web pages.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Construct sound arguments and evaluate arguments of others				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Identify one's own and others' assumptions, biases, and their consequences				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Listen thoughtfully and respectfully to the ideas of others				
	Speak with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Use Microsoft Expression Web's features to design, create, test, upload, and manage typical 5 to 10 page personal and small business web sites.				
	Analyze experimental results and draw reasonable conclusions from them				

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		PLOs	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Construct sound arguments and evaluate arguments of others				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Demonstrate computer literacy				
	Write with precision and clarity to express complex thought				
	Read college-level materials with understanding and insight				
	Listen thoughtfully and respectfully to the ideas of others				
	Speak with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Set goals and devise strategies for personal and professional development and well being				
	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Use Microsoft Expression Web's features to create Web pages that include headings, lists, images, links, tables, and forms.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Construct sound arguments and evaluate arguments of others				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
	Generalize appropriately from specific contexts				
	Identify one's own and others' assumptions, biases, and their consequences				
	Demonstrate computer literacy				
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	Read college-level materials with understanding and insight				
	Listen thoughtfully and respectfully to the ideas of others				
	Speak with precision and clarity to express complex thought				
	Understand the basic content and modes of inquiry of the major knowledge fields				
	Use the symbols and vocabulary of mathematics to solve problems and communicate the results				
	Respond to and evaluate artistic expression				
	Maintain and transfer academic and technical skills to workplace				
	Be lifelong learners, with ability to acquire and employ new knowledge				
	Demonstrate teamwork skills				
	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
	Use Microsoft Expression Web's features to employ cascading styles sheets to exhibit industry standard site-wide design, including multi-column layout, navigation, typography, color, and images.				
	Analyze experimental results and draw reasonable conclusions from them				
	Analyze and solve complex problems across a range of academic and everyday contexts				
	Construct sound arguments and evaluate arguments of others				
	Consider and evaluate rival hypotheses				
	Recognize and assess evidence from a variety of sources				
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	Integrate knowledge across a range of contexts				
	Locate, evaluate and use information effectively				
CIS 76A Web Site Creation using Microsoft FrontPage					
	Employ cascading styles sheets and FrontPage themes to exhibit industry standard site-wide design, including multi-column layout, navigation, typography, color, and images.				
	Use FrontPage features to develop valid and accessible XHTML based Web pages that include accessible images, site navigation, tables, and forms, as defined by the World Wide Web Consortium (W3C).				
	Use FrontPage's features to create Web sites that include headings, lists, images, hyperlinks, navigation bars, image maps, tables, frames, DHTML effects, site maps, forms, databases, and discussion groups.				
	Use FrontPage's features to design, create, test, publish, and maintain typical 5 to 10 page personal and small business Web sites.				
CIS 76B Introduction to Dreamweaver					
	Use Dreamweaver's features to design, create, test, upload, and manage typical 5 to 10 page personal and small business Web sites.				
	Use Dreamweaver's features to create Web pages that include headings, lists, images, links, tables, and forms.				
	Use Dreamweaver's features to develop valid and accessible XHTML based Web pages that include accessible images, site navigation, tables, and forms, as defined by the World Wide Web Consortium (W3C).				
	Use Dreamweaver's features to utilize image rollovers, form validation, and other industry standard behaviors and interactive content to build interactive Web pages.				
	Analyze a Web site, then utilize Dreamweaver's template and library features to effectively reduce the effort required to maintain the site as it grows and changes.				
	Use Dreamweaver's features to employ cascading styles sheets to exhibit industry standard site-wide design, including multi-column layout, navigation, typography, color, and images.				
CIS 76B Introduction to Dreamweaver					
	Use Dreamweaver's features to design, create, test, upload, and manage typical 5 to 10 page personal and small business Web sites.				
	Use Dreamweaver's features to create Web pages that include headings, lists, images, links, tables, and forms.				
	Use Dreamweaver's features to develop valid and accessible XHTML based Web pages that include accessible images, site navigation, tables, and forms, as defined by the World Wide Web Consortium (W3C).				
	Use Dreamweaver's features to utilize image rollovers, form validation, and other industry standard behaviors and interactive content to build interactive Web pages.				
	Analyze a Web site, then utilize Dreamweaver's template and library features to effectively reduce the effort				

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	required to maintain the site as it grows and changes.				
	Use Dreamweaver's features to employ cascading styles sheets to exhibit industry standard site-wide design, including multi-column layout, navigation, typography, color, and images.				
<b>CIS 78A Introduction to Adobe Photoshop</b>					
	Design and create images used for printed media in advertising.				
	Apply college-level methods of critical analysis and synthesis in creating a camera-ready project using Photoshop's methods of photo correction and retouching along with color management.				
	Complete basic projects in Adobe Photoshop using selections, layers and channels to edit Images used for print or web design.				
	Describe, analyze, and demonstrate the process of image creation for a print and web page and apply it to a finished product.				
<b>CIS 78A Introduction to Adobe Photoshop</b>					
	Complete basic projects in Adobe Photoshop using selections, layers and channels to edit Images used for print or web design.				
	Describe, analyze, and demonstrate the process of image creation for a print and web page and apply it to a finished product.				
	Design and create images used for printed media in advertising.				
	Apply college-level methods of critical analysis and synthesis in creating a camera-ready project using Photoshop's methods of photo correction and retouching along with color management.				
<b>CIS 78B Advanced Adobe Photoshop</b>					
	Create complex compositions involving light sources and shadows to suggest true dimensionality and artistic awareness used in photo correction and image creation;				
	Demonstrate the knowledge of workflow process in the creation of real-world projects.				
	Discover a variety of techniques used to change, enhance, and improve photographs for a variety of media applications;				
	Illustrate and demonstrate image improvement techniques involving Photoshop adjusting and optimizing techniques;				
<b>CIS 78B Advanced Adobe Photoshop</b>					
	Create complex compositions involving light sources and shadows to suggest true dimensionality and artistic awareness used in photo correction and image creation;				
	Demonstrate the knowledge of workflow process in the creation of real-world projects.				
	Discover a variety of techniques used to change, enhance, and improve photographs for a variety of media				

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	applications;				
	Illustrate and demonstrate image improvement techniques involving Photoshop adjusting and optimizing techniques;				
CIS 79 Intro Adobe Illustrator					
	Comprehend and apply the techniques used to create and modify artwork using a vector-based program.				
	Combine, integrate, modify and rearrange layering, shadowing, transparency and blending modes, in order to create a variety of Illustrator images used for printed material.				
	Apply elements of Illustrator skillfully in order to incorporate type in drawing images.				
	Create and transform Illustrator drawings.				
CIS 79 Intro Adobe Illustrator					
	Combine, integrate, modify and rearrange layering, shadowing, transparency and blending modes, in order to create a variety of Illustrator images used for printed material.				
	Apply elements of Illustrator skillfully in order to incorporate type in drawing images.				
	Create and transform Illustrator drawings.				
	Comprehend and apply the techniques used to create and modify artwork using a vector-based program.				
CIS 80 Word Processing: Microsoft Word for Windows					
	Apply principles of fundamental word processing concepts and skills.				
	Identify and solve word processing/software problems.				
	Make analytical and problem-solving decisions regarding the preparation and final appearance of professional-looking documents.				
	Apply problem-solving principles to job-related word processing tasks which require decision-making, time management, and skill competency at all levels- beginning, intermediate, and advanced.				
	Identify functions and apply keyboarding techniques to a variety of Word processing situations.				
CIS 80 Word Processing: Microsoft Word for Windows					
	Identify and solve word processing/software problems.				
	Identify functions and apply keyboarding techniques to a variety of Word processing situations.				
	Make analytical and problem-solving decisions regarding the preparation and final appearance of professional-looking documents.				
	Apply problem-solving principles to job-related word processing tasks which require decision-making, time				



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	management, and skill competency at all levels- beginning, intermediate, and advanced.				
	Apply principles of fundamental word processing concepts and skills.				
<b>CIS 81 Intro Adobe InDesign</b>					
	Recognize and apply the key features of a document layout program;				
	Demonstrate the knowledge of use of typographical controls, importance of importing text and camera-ready graphics in a finished project.				
	Integrate text and graphics in a document layout program to create professional-quality, full-color documents;				
	Exhibit knowledge of beginning and intermediate desktop publishing skills from planning, writing, page layout, and production;				
<b>CIS 81 Intro Adobe InDesign</b>					
	Recognize and apply the key features of a document layout program;				
	Demonstrate the knowledge of use of typographical controls, importance of importing text and camera-ready graphics in a finished project.				
	Exhibit knowledge of beginning and intermediate desktop publishing skills from planning, writing, page layout, and production;				
	Integrate text and graphics in a document layout program to create professional-quality, full-color documents;				
<b>CIS 82A MOSprep: Microsoft Word-Core Level</b>					
	Differentiate MOS Core and Expert certification levels				
	Perform the necessary skills in all five content areas that are required to pass the Microsoft Word core level certification test				
	Summarize the basic functions that are available on the Word menus and toolbars				
	Demonstrate ability to utilize testing software to successfully pass practice tests				
	Utilize OLE and other integration techniques to use Microsoft Word with other software programs				
<b>CIS 82B MOSPrep: Microsoft Word-Expert Level</b>					
	Differentiate MOS Core and Expert certification levels.				
	Perform the necessary skills in all five content areas that are required to pass the Microsoft Word expert level certification test.				
	Summarize the advanced functions that are available on the Word menus and toolbars.				
	Demonstrate ability to utilize testing software to successfully pass practice tests.				
	Utilize OLE and other integration techniques to use Microsoft Word with other software programs.				

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<p>CIS 83A MOSprep: Microsoft Excel-Core Level</p>					
	<p>Perform the necessary skills in all five content areas that are required to pass the Microsoft Excel core level certification test.</p>				
	<p>Differentiate MOS Core and Expert certification levels.</p>				
	<p>Summarize the basic functions that are available on the Excel menus and toolbars</p>				
	<p>Demonstrate ability to utilize testing software to successfully pass practice tests.</p>				
	<p>Utilize OLE and other integration techniques to use Microsoft Excel with other software programs.</p>				
<p>CIS 83B MOSPrep: MS Excel-Expert</p>					
	<p>Utilize OLE and other integration techniques to use Microsoft Excel with other software programs.</p>				
	<p>Demonstrate ability to utilize testing software to successfully pass practice tests.</p>				
	<p>Perform the necessary skills in all five content areas that are required to pass the Microsoft Excel expert level certification test.</p>				
	<p>Differentiate MOS Core and Expert certification levels.</p>				
	<p>Summarize the advanced functions that are available on the Excel menus and toolbars.</p>				
<p>CIS 84 Word Processing: WordPerfect for Windows</p>					
	<p>Identify functions and apply keyboarding techniques to a variety of Word processing situations.</p>				
	<p>Apply problem-solving principles to job-related word processing tasks which require decision-making, time management, and skill competency at all levels- beginning, intermediate, and advanced.</p>				
	<p>Make analytical and problem-solving decisions regarding the preparation and final appearance of professional-looking documents.</p>				
	<p>Identify and solve word processing/software problems.</p>				
	<p>Apply principles of fundamental word processing concepts and skills.</p>				
<p>CIS 84 Word Processing: WordPerfect for Windows</p>					
	<p>Apply principles of fundamental word processing concepts and skills.</p>				
	<p>Identify functions and apply keyboarding techniques to a variety of Word processing situations.</p>				
	<p>Identify and solve word processing/software problems.</p>				
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	looking documents.				
	Apply problem-solving principles to job-related word processing tasks which require decision-making, time management, and skill competency at all levels- beginning, intermediate, and advanced.				
CIS 85	MOSprep: Microsoft Access-Core Level				
	Utilize OLE and other integration techniques to use Microsoft Access with other software programs.				
	Demonstrate ability to utilize testing software to successfully pass practice tests.				
	Perform the necessary skills in all five content areas that are required to pass the Microsoft Access certification test.				
	Differentiate MOS Core and Expert certification levels.				
	Summarize the basic and advanced functions that are available on the Access menus and toolbars.				
CIS 86	MOSPrep: Microsoft PowerPoint-Comprehensive Level				
	Demonstrate ability to utilize testing software to successfully pass practice tests				
	Summarize the basic and advanced functions that are available on the PowerPoint menus and toolbars				
	Utilize OLE and other integration techniques to use Microsoft PowerPoint with other software programs				
	Perform the necessary skills in all five content areas that are required to pass the Microsoft PowerPoint certification test.				
	Differentiate MOS Core and Expert certification levels.				
CIS 87	MOSprep: Microsoft Outlook-Core Level				
	Differentiate MOS Core and Expert certification levels.				
	List and describe each of the features contained in Microsoft Outlook (mail, calendar, notes, tasks, scheduling, etc.).				
	Summarize the functions that are available on the Outlook menus and toolbars.				
	Demonstrate ability to utilize testing software to successfully pass practice tests.				
	Perform the necessary skills in all three content areas that are required to pass the Microsoft Outlook certification test.				
CIS 90	Microsoft Outlook				
	Identify Outlook installation configurations.				
	Apply Outlook's basic features to manage email and contacts, schedule and manage appointments.				
	Employ categories to organize Outlook items.				
	Utilize Outlook as a client with Exchange Server, identify features that are available when Outlook is used as client				

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	with Exchange Server and utilize Outlook Web Access.				
	Synchronize Outlook with Personal Digital Assistants (PDAs).				
	Identify and list time management and scheduling strategies that can be used with Microsoft Outlook components such as the Inbox, Calendar, Tasks, and Notes.				
	Integrate Microsoft Office applications with Outlook components.				
<b>CIS 90 Microsoft Outlook</b>					
	Identify Outlook installation configurations.				
	Apply Outlook's basic features to manage email and contacts, schedule and manage appointments.				
	Employ categories to organize Outlook items.				
	Utilize Outlook as a client with Exchange Server. a. identify features that are available when Outlook is used as client with Exchange Server. b. utilize Outlook Web Access.				
	Synchronize Outlook with Personal Digital Assistants (PDAs).				
	Identify and list time management and scheduling strategies that can be used with Microsoft Outlook components such as the Inbox, Calendar, Tasks, and Notes.				
	Integrate Microsoft Office applications with Outlook components.				
<b>CIS 90 Microsoft Outlook</b>					
	Apply Outlook's basic features to manage email and contacts, schedule and manage appointments.				
	Employ categories to organize Outlook items.				
	Integrate Microsoft Office applications with Outlook components.				
	Utilize Outlook as a client with Exchange Server, identify features that are available when Outlook is used as client with Exchange Server and utilize Outlook Web Access.				
	Identify and list time management and scheduling strategies that can be used with Microsoft Outlook components such as the Inbox, Calendar, Tasks, and Notes.				
	Identify Outlook installation configurations.				
	Synchronize Outlook with Personal Digital Assistants (PDAs).				
<b>CIS 91 Microsoft Project</b>					
	Apply project management concepts to project plans and describe project management concepts such as attributes of a project, the project life cycle, management process, and benefits of project management.				

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	Plan projects and create project schedules.				
	Organize and communicate project information via graphs, tables, charts and diagrams.				
	Create and implement project plans using Microsoft Project.				
	Generate project information to share with people and with other Microsoft Office applications.				
	Utilize tracking features to track and close project status.				
	Assign costs and resources.				
<b>CIS 93 Computers for Beginners</b>					
	Demonstrate the principles of the Microsoft Windows graphics user interface.				
	Identify the components, operation and uses of computer systems.				
	Demonstrate the principles of Internet research.				
	Identify the functions and applications of word processing, spreadsheet, databases and presentation programs.				
	Apply the fundamental concepts of windows to manage programs, files and printing.				
<b>CIS 95A Introduction to the Internet</b>					
	Demonstrate the principles of navigating and searching the Internet.				
	Analyze and evaluate Internet research resources and cite online works.				
	Identify the functions and applications of current Internet access programs.				
	Explain the ethics of downloading media and copying copyrighted material from the World Wide Web.				
	Apply the fundamental concepts of the Internet to retrieve and send information.				
	Discuss the history of the Internet and the World Wide Web.				
<b>CIS 96 Practicum in Computers</b>					
	5. Identify the information input requirements, synthesize the algorithmic steps needed to transform the data input into the required output information, and organize the output format to facilitate user communication for gaming, business, scientific and mathematics problems. (CIS 2/5/11/12/14/15/16/17/18/20/21/22/28/35/36/37/38/54/56/63/72/76/98)				

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6. Apply web-based techniques to create and format a typical small business or personal Web site using appropriate web based languages/programs such as Adobe Photoshop, Adobe InDesign, Adobe Illustrator, Dreamweaver, Java, JavaScript, Flash, CSS, HTML or XHTML. (CIS12/14/15/18/35/54/56/72/73/76/78/79/81/95)					
3. Apply the principles of and solve problems with word processing, spreadsheet, database, communications and file management by selecting which application software is best suited to solve the problem. (CIS1A/1B/3/23/34/60/61/62/63/65/80/81/82/83/84/85/86/87/90/91/93/95/98)					
4. Demonstrate an understanding of systems analysis as applied to the effective use of computers in business operations. (CIS2/5/11/12/14/15/17/18/20/26/28/35/36/37/38/54/56/61/62/63/72/91)					
1. Develop skills in the use of the computer in conjunction with a supporting class. (Gen Ed SLO).					
2. Identify parts of the computer and apply the principles of operating the computer to get the desired output. (All CIS courses).					
CIS 96A Practicum in Computers					
1. Develop skills in the use of the computer in conjunction with a supporting class. (Gen Ed SLO).					
2. Identify parts of the computer and apply the principles of operating the computer to get the desired output. (All CIS courses).					
4. Identify the information input requirements, synthesize the algorithmic steps needed to transform the data input into the required output information, and organize the output format to facilitate user communication for gaming, business, scientific and mathematics problems. (CIS2/5/11/12/14/15/16/17/18/20/21/22/28/35/36/37/38/54/56/63/72/76/98)					
5. Apply web-based techniques to create and format a typical small business or personal Web site using appropriate web based languages/programs such as Adobe Photoshop, Adobe InDesign, Adobe Illustrator, Dreamweaver, Java, JavaScript, Flash, CSS, HTML or XHTML. (CIS12/14/15/18/35/54/56/72/73/76/78/79/81/95)					
3. Demonstrate an understanding of systems analysis as applied to the effective use of computers in business operations. (CIS2/5/11/12/14/15/17/18/20/26/28/35/36/37/38/54/56/61/62/63/72/91)					
3. Apply the principles of and solve problems with word processing, spreadsheet, database, communications and file management by selecting which application software is best suited to solve the problem. (CIS1A/1B/3/23/34/60/61/62/63/65/80/81/82/83/84/85/86/87/90/91/93/95/98)					
CIS 97 Practicum in Computers					
2. Identify parts of the computer and apply the principles of operating the computer to get the desired output. (All CIS courses).					
4. Demonstrate an understanding of systems analysis as applied to the effective use of computers in business operations. (CIS2/5/11/12/14/15/17/18/20/26/28/35/36/37/38/54/56/61/62/63/72/91)					

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5. Identify the information input requirements, synthesize the algorithmic steps needed to transform the data input into the required output information, and organize the output format to facilitate user communication for gaming, business, scientific and mathematics problems. (CIS2/5/11/12/14/15/16/17/18/20/21/22/28/35/36/37/38/54/56/63/72/76/98)				
1. Develop skills in the use of the computer in conjunction with a supporting class. (Gen Ed SLO).				
3. Apply the principles of and solve problems with word processing, spreadsheet, database, communications and file management by selecting which application software is best suited to solve the problem. (CIS1A/1B/3/23/34/60/61/62/63/65/80/81/82/83/84/85/86/87/90/91/93/95/98)				
6. Apply web-based techniques to create and format a typical small business or personal Web site using appropriate web based languages/programs such as Adobe Photoshop, Adobe InDesign, Adobe Illustrator, Dreamweaver, Java, JavaScript, Flash, CSS, HTML or XHTML. (CIS12/14/15/18/35/54/56/72/73/76/78/79/81/95)				
CIS 98A Introduction to Excel				
Apply problem-solving principles to creating, editing, printing and developing spreadsheets.				
Create common formulas, summarizing data and integrating projects in multiple worksheets and workbooks.				
Design, modify, query, and manipulate lists (databases) of information in a spreadsheet.				
Format worksheets to enhance visualization, readability and presentation with charts and graphs.				
CIS 98A Introduction to Excel				
Apply problem-solving principles to creating, editing, printing and developing spreadsheets.				
Create common formulas, summarizing data and integrating projects in multiple worksheets and workbooks.				
Design, modify, query, and manipulate lists (databases) of information in a spreadsheet.				
Format worksheets to enhance visualization, readability and presentation with charts and graphs.				
CIS 98B Advanced Excel				
Create, modify, query, and manipulate lists (databases) of information in a spreadsheet and present various scenarios.				
Apply problem-solving principles to develop macros and templates.				
Import data into Excel.				
Integrate Excel with other MS Office products				
Apply decision-making strategies using Goal Seek, Solver and What-if analysis in complex business problems.				

**RIVERSIDE COMMUNITY COLLEGE DISTRICT  
SLO BY SUBJECT**

		<b>PLOs</b>	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.	Identify and employ proper use of color media and associated materials as well as define, outline, and discuss basic to complex color theory for 2D artwork.	Create, manipulate, animate, and implement 3D art assets for real time interactive simulations or video games.
CIS 98B Advanced Excel					
	Apply problem-solving principles to develop macros and templates.				
	Apply decision-making strategies using Goal Seek, Solver and What-if analysis in complex business problems.				
	Create, modify, query, and manipulate lists (databases) of information in a spreadsheet and present various scenarios.				
	Import data into Excel.				
	Integrate Excel with other MS Office products				
CIS XXX est					