COURSE DESCRIPTION

Course Title: Foundations of Game Design
Course Number: 10728
Course Prerequisites: None

Course Description: Does your love of video games motivate you to pursue a career in this field? Pursue your passion by learning about the principles of game design through the stages of development, iterative process, critiques, and game development tools. Put these new skills to work by designing your own game.

Suggested Grade Level: Grades 9-12
Length of Course: One Semester
Units of Credit: .5
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:
CSPG 65
To find the CSPG information, go to CSPG
Certification verified by the WCSD Human Resources Department: ☒Yes   ☐No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic
Mark Types: Check all that apply.
                ☒F – Final Average   ☒MP – Marking Period   ☒EXM – Final Exam

GPA Type: ☐ GPAEL-GPA Elementary ☐ GPAML-GPA for Middle Level ☒ NHS-National Honor Society
                 ☒ UGPA-Non-Weighted Grade Point Average   ☒ GPA-Weighted Grade Point Average

State Course Code: 05253
To find the State Course Code, go to State Course Code, download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title:	Edynamic Education
Publisher:	Virtual Coursework
ISBN #:	Click or tap here to enter text.
Copyright Date:	Click or tap here to enter text.
WCSD Board Approval Date:	Click or tap here to enter text.

Supplemental Materials: Click or tap here to enter text.

Curriculum Document

WCSD Board Approval:

Date Finalized:	4/3/2023
Date Approved:	6/26/2023
Implementation Year:	2023.2024

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS

Marking Period 1/3

Unit 1: From King Tut to Mario: A History of Gaming – Have you ever wondered what it would be like to create your very own videogame? Well, this unit is going to equip you with everything you need to know in order to start that process! We'll begin with some important history to help you get a feel for the games that have succeeded and those that were big-time flops. You'll explore gaming's "family tree" as you learn about the different generations of games. Finally, prepare to become an expert in the common characteristics that all game systems share, as well as what sets some apart from competition.

Unit 2: What's in a Game – Video games can put you in the driver's seat of a rally car or dispatch you to a mythical mountain to overcome a dark wizard and steal a dragon's treasure. You may even have to mimic certain rhythms or dance steps to emerge victorious. No matter what type of video game is at the top of your most-played list, it is sure to make use of six critical elements you will learn about that allow you to create a game that is unique and engaging. Learning these elements and how they combine to form a totally immersive and engaging video game will be your first introduction to becoming a successful game designer yourself!

Unit 3: A Peek into the Game Industry – In big gaming studies, the processes and tasks that go into making a video game require different skills and are distributed among many people, each with specific expertise in design and development. A game design team can range in size from just one to hundreds of people. While you will be doing pretty must everything yourself in this course, understanding all the roles and tasks involved in creating a video game will serve as a useful roadmap when designing and building your own game and considering a career in this field. It will also help you find where your strengths will shine best in the real world! Which game piece will you be?

Unit 4: Let's Talk Shop about Game Design – Grab your tool belt and gear up to add a whole slew of brand-new gaming tools to your inventory! It's time to get serious about what your game's going to look like. What approach will you take? How often will you iterate? And what about your mechanics? There is so much to consider when designing a video game, and it all continues here in pre-production. Pretty soon, you're going to have the know-how to answer those questions and many more. So, grab your toolbox, start your engine, and get ready…get set…here we go.

Marking Period 2/4

Unit 5: Developing a Game Design Document – While getting your game mechanics down pat is the most important task of pre-production, creating a blue print of your game development process is the most important deliverable. This blueprint, better known as a game design

document (GDD), describes your video game from the ground up. It covers everything from the subject, style, nature, functionality, gameplay, mechanics, characters, plot, environment design, and user interface design to the narrative devices of your game. Yes, that's a whole lot of information in one document! But the great thing about the GDD is that it is flexible. The document exists as your working catch-all for your plans and hopes for your game and, being a living document, can change as you adapt your design and your ideas during the design process. Learning how to create a meaningful and effective GDD, whether working alone or as part of a team, is essential to conveying a clear image of the intended game concept and final product.

Unit 6: Game Visuals – Have you ever seen graphics in a video game that made you go "wow"? As you design and build your video game, you'll have to master a lot of design elements and learn how to combine them to get your players to feel similarly wowed. Now, has a game's menu system or heads-up display ever triggered the same reaction? Probably not, but that makes the design going on right in front of you that you may have never noticed! Often, when a designer does something right, it's feels so natural and easy for the viewer that they don't realize how much work the design is doing for them. In this unit, you'll tackle many fundamental visual design concepts that you'll take with you from the most epic character designs through the most modest menu buttons.

Unit 7: The Business of Video Games – The Business of Video Games – You might think game design is nothing but fun and games, but the business side of gaming is as serious and cutthroat as any other industry, with its own unique ethical and legal considerations. Ignore these issues at your peril! It's certainly not much fun putting your blood, sweat, and tears into building a fabulous game only to get into hot water having accidentally infringed upon someone else's intellectual property, or being called out by the media because your game has contributed to absenteeism or other negative behaviors! You'll also have to develop special skills, such as social media marketing, to find new users and make your game go viral!

Unit 8: Let's Make a Game - Time to roll up those sleeves and move into the development phase. Imagine you were the first person to ever create a video game, say a hunting game like the Nintendo classic Duck Hunt. You would have to write computer code to mimic the laws of gravity, momentum, elasticity, and who knows what else! To make things a lot quicker (and less expensive), developers build their games in existing game engines that have a lot of tools and data already built in. You are going to learn to work with Unity software, one of the most popular game engines, to create the basic elements of your game prototype.

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Describe the technological developments that contributed to the modern game industry		MP 1/3
Identify and evaluate the attributes of memorable (and forgettable!) games		MP 1/3
Research, compare, and categorize different game platforms and game hardware		MP 1/3
Strategically start planning your own video game		MP 1/3
Define what a game is and name the six parts of a game		MP 1/3
Identify the source of "fun" in games and apply this knowledge to evaluate the success of a game's design		MP 1/3
Give examples of how specific game elements work together to form specific kinds of player experiences that drive different kinds of fun		MP 1/3
Use what you have learned so far to continue developing your own video game		MP 1/3
Distinguish the differences between large corporate design studios and independent studios		MP 1/3
Define the various roles on a game development team		MP 1/3
Explain the game design process, from concept to finished game		MP 1/3
List software commonly used in game development		MP 1/3
Generate and critically examine different game ideas		MP 1/3
Differentiate between player-centric and designer-centric game design		MP 1/3
Exercise best practices during the iterative cycle of game design		MP 1/3
Define the details of key game mechanics such as movement, combat, inventory, and randomness		MP 1/3
Explain the various delivery methods for conveying story in games		MP 1/3
Explain the steps of a game design team moves through from idea to concept, to game design document		MP 2/4
Identify the main elements in a game design document and which team member would be best suited to help give input into that part of the GDD		MP 2/4
Create your own game design document		MP 2/4
Identify and utilize the elements and principles of design		MP 2/4
Evaluate the effectiveness of visual design		MP 2/4
Understand and apply color theory		MP 2/4
Use an imaging program to create pixel art and sprite sheets		MP 2/4
Make justifiable decisions following an ethical decision-making process		MP 2/4
Outline the legal matters that relate to game development and design		MP 2/4

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Explain the various kinds of companies and organizations that operate in the game industry space		MP 2/4
Decide which form of marketing and producing works best for your situation		MP 2/4
Understand how video games apply physics concepts, such as friction, drag, and collision		MP 2/4
Explain the evolution of computer programming languages through their generations		MP 2/4
Describe the basic components and advantages of object-oriented programming		MP 2/4
Identify the different components in a simple script		MP 2/4
Program your first object in Unity		MP 2/4

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

   Effective formative assessments for this course include: Homework and Discussion

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

   Effective summative assessments for this course include: Assessment quizzes and exams