Video Game Design

COURSE INFORMATION 2019-2020

Sessions: 7:55-10:25 AM and 11:10 AM-1:40 PM, M-F

High School Credits: 3.0 CTE (Occupational) or Elective Credits

Equivalency Credits:

- English Equivalency
- 1.0 Algebra II OR Geometry Equivalency
- Elective Credit availability varies by School/District, verify with your Counselor

Dual Credit: It is possible to earn up to 5 college credits through Bellevue College for this course. All programming assignments must be completed at an 80% or higher.

Course Description: Students learn to design and create video games using trigonometry and higher math, computer programming in C#, as well as 2D computer animation. This course prepares students with skills necessary for two of the video game industry's biggest needs: qualified video game designers and programmers.

Strong programming skills are not needed. Such skills will be developed and refined as you progress throughout the program. This is a math intensive program.

- Prerequisites: Algebra I

INSTRUCTOR INFORMATION

- Teacher Name: James Bassett
- Office Hours: 1:40 AM - 2:45 PM
- Office Location: Video Game Design Classroom
- Phone: 425.348.2233
- Email: bassettjb@mukilteo.wednet.edu
- Best Way to Contact: Emails are generally answered within 24 hours.

COURSE MATERIALS

- Required Materials:
    - Scientific Calculator (Graphing Calculators are NOT allowed on tests)
    - Flash Drive with at least 4GB allocated to this program
    - Spiral notebook
- Software:
    - Unity
    - Visual Studio, Processing
    - Paint.NET (most recent versions of each)
    - Photoshop is great if you can get it, but don't pay a bunch of money for it.
    - Software is provided at school, downloading for home use is recommended

LEARNING OBJECTIVES

Learning Objectives

- Students will become proficient in C# Programming, Game Design Workflow, Managing Game Development in Unity, Vector Mathematics, Collision Mathematics, Matrix Mathematics and Polar Mathematics. Students will gain an introduction to Animation Principles, Interactive Story Development and Character Development.

Certificate Opportunities

This course has opportunities for students to earn a certificate in 21st Century Skills and the Unity Certified Developer Certification.

ASSIGNMENTS AND GRADING

Assessment Criteria and Grading Policies

- Grading is determined on a straight points system (Points Earned / Points Possible)
- Assignments will be graded on one of the following scales:
  - Standard Scale: Normal daily work and tests are assessed on percentage correct.
  - Project Scale: Project expectations are listed and worth 75% of project's points for completion. Additional points may be earned via project enhancements. Successfully completing the objective will rate a grade of 75%, with going "above and beyond" netting extra points. This is consistent with industry, where being innovative is not a "bonus", it's a requirement. Students are responsible for taking their projects to the "next level".
  - Grading notification: Students and parents can review grades on-line through the Qmlativ Grading System for Mukilteo School District. Access information will be available at the beginning of the school year.

COURSE EXPECTATIONS

Sno-Isle TECH Skills Center is administered by Mukilteo School District and follows MSD School Board Policies and Procedures.

The most important aspect of this career path, repeated over and over and over again by professionals in every area of the industry, is a love and passion for games, game design and the process. It's not enough to be someone who enjoys playing games for several hours a day - your focus has to be on how you can create something new, better, more innovative and more fun. If this class feels like "work", this industry isn't the one for you… and that's OK! One of the goals of this class is to help you decide what you want to do with your future, and if that future includes a career in game design, that's great. If it is going somewhere else but doing game design as a hobby, that's great too… and if you realize that you DON'T have a passion for this, that's great too because you won't spend a ton of time in college only to find out you've spent a bunch of time, money and effort to get a job you hate.

As you have probably noticed, this course involves a LOT of math. Most of our math is trig or precalculus level. I am operating under the understanding that all students have at minimum completed algebra AND generally some amount of geometry. Having taken math beyond that is definitely helpful but not assumed by this class – I will be teaching any higher-level concepts.

This course is approximately 1/3 math, 1/3 programming and 1/3 design and art. Therefore, if any of these topics is something you are particularly uncomfortable with, this may not be the course for you. I don't expect you to be an expert in these things (if you were, you probably wouldn't need the class!) but I do expect your best attempt at quality each and every time. Many of our projects involve some level of drawing or digital art; I do not expect professional grade art (I'm horrible at drawing myself) but I do expect that the student strives to improve over time.

Getting Help:

As industry preparation, it is important that I model industry technique. One aspect of this is my policy on help. It is expected that most of you will have problems somewhere in the curriculum; this is totally normal.

During lectures, if you don't understand something you NEED to speak up. We move very fast in this class, and if you miss something, it will adversely affect your future learning. I realize that sometimes I move too quickly or explain things in ways you don't understand (plus everyone learns differently) but you need to be responsible for your learning and let me know when you don't get something. Help me help you learn.

During projects/assignments and other tasks: I gradually phase in this policy, but basically, I expect that during non-lecture times you attempt to get answers using resources you have rather than coming to me for everything. In the industry, I won't be there to help you, so you need to learn to help yourself. The first point of contact should definitely be your teammates. Second point of contact should be books, web and other reference materials or students. If you have already attempted these two things, THEN you should check with me.

Second year:

Whether you are invited into the second-year program is dependent upon: Will you get anything out of a second year, is there enough material to warrant another year, and do I feel that you will be successful in a second year, independent program. At the current time, I provide a limited number of 2nd year slots (4-5 per session) with slots being prioritized by class ranking, ability/desire to work with/help/guide other students and, since the course will be largely independent, whether the student has a clear goal and plan in place for their second year. Students with poor grades (less than 80%), inability to work as part of a team, or significant attendance/discipline problems will not be welcome in the 2nd year program.

You may have noticed teamwork mentioned multiple times throughout this document. During my time at DigiPen I had the opportunity to speak with a number of industry professionals, including designers, programmers, artists, tools programmers, localization experts, business managers, producers, and project leads, and they all agreed that the two assets most highly desired in a game designer are passion for the industry and teamwork (in that order). As a result, I give the highest priority to developing these two things. and students need to learn team building skills.

I hope you enjoy this course and learn a lot. Those of you who work hard will find this course rewarding; slackers will find it immensely frustrating. Do your best and push the envelope, and you will be successful.

Course Calendar

- 1st Quarter: GDD Project
- 2nd Quarter: First Complete vertical slice
- 3rd Quarter: "Challenge" vertical slice
- 4th Quarter: Showcase Project & Unity Certification Exam