



Lebanon Community Schools

High School Course Syllabus

Lebanon High School

Mr. Tim Helland

2018-2019

Course Number and Title:

Game Programming

Subject Area:

Computer Technology

Credits:

Semester 1 0.5 CT or Elective Credit

Graduation Requirements:

The following Oregon Essential Skills will be addressed during this course:

x	Read and comprehend a variety of text	x	Use technology to learn, live, and work
	Write clearly and accurately		Demonstrate civic and community engagement
x	Apply mathematics in a variety of settings		Demonstrate global literacy
	Listen actively and speak clearly and coherently	x	Demonstrate personal management and teamwork skills
x	Think critically and analytically		

Prerequisites:

Introduction to Computer Science *or* teacher approval

Course Overview:

Video games have become a huge industry both in the United States and around the world. Creating an engaging game requires some artistry and a lot of math...yes, I said *math!* In this course, we will use the Stencyl game engine. Stencyl makes the programming aspect of game design a lot easier to learn without sacrificing useful functionality in 2D games.

In this course, students will use the game design software to:

- ❖ Create simple games from a variety of genres that may include:
 - Puzzle
 - Maze
 - Simulation
 - Action
 - Platform
 - Scroller
- ❖ Create and edit multimedia content
 - Sprites, Tilesets and Backgrounds
 - Sound and music
- ❖ Create objects and define their properties and behavior
 - Use *variables* to store information
 - Respond to mouse, keyboard, and game *events*
 - Control game operation using *conditional statements*



Topics of Study:

Unit 1: History of Games

About 2 weeks

- Game Genres
- Game Design Process
- Hardware Basics
- Project: *The Timeline*

Unit 2: Introduction to Stencyl

About 3 weeks

- Events
- Sound Effects
- Project: *Catch The Clown*

Unit 3: Basics of Game Programming

About 3 weeks

- Focus: Action Games
- Variables 1.0
- Movement and Collisions
- Scoring and Health
- Project: *Who's the Boss*

Unit 4: Something Puzzles Me

About 3 weeks

- Focus: Mazes and Puzzles
- Grid-based Design
- Basic AI 1.0
- Variables 2.0
- Level Design
- Project: *The Rat Trap*



Unit 5: The Gravity of the Situation

About 3 weeks

- Focus: Simulations and Physics
- Sprite Transformations
- Particles
- Variables 3.0
- Gravity and Friction
- Project: *Splat! Ouch*

Unit 6: Getting a Jump on Things

About 3 weeks

- Focus: Platform Games
- Tilesets
- Animated Sprites
- Paths
- Project: *Princess Platform*

TAG/ELL/Special Education Considerations:

If you desire accommodations on assignments due to an IEP or the need for more academic challenge (TAG), please talk to your teacher, and alternative assessments may be created between the teacher and student on a case by case basis. You will be pre-assessed on the knowledge and skills that you bring with you to this course. The purpose of the pre-assessment is to determine what you already know, guide instruction, and give you access to advanced and/or accelerated content when appropriate.

Formal or informal pre-assessments may include quizzes, student input and self-evaluation, placement tests, teacher observation, fist of five, thumbs up/thumbs down, and other forms of assessment. The following differentiation strategies will be used during instruction when appropriate: Enrichment, Multiple Intelligences, Acceleration, Compacting, Independent Projects, Assignment Modification, Tiered Assignments, and Student Contracts.

Supplemental Resources:



A variety of resources will be available on the following websites:

<http://gameprog.timhelland.com>

<http://www.stencyl.com>

If you don't have access to a reliable internet connection, please see the teacher for an alternate method of access.

Academic Honesty Policy:

Plagiarism and cheating are unacceptable in any classroom. Students who submit work that is not their own may receive a score of zero and/or be referred to the administration for disciplinary action.

You are encouraged to help your peers understand and make progress. But, don't just give them your work. If multiple students submit work that is not sufficiently unique, the points for that work will be divided equally amongst them.

Homework Policy:

The majority of learning activities in this course are designed so that most students will complete them during the class period. If you do not complete a task during the class period you may find it necessary to complete work at home or schedule time to complete the task in the lab before or after school.

Late assignments are accepted, but will incur a 10% deduction for the first week and an additional 10% deduction thereafter. No late assignments will be accepted during the last week of the term.

Behavioral Expectations:

To respect the rights of all, each member of our classroom agrees to:

- ❖ Respect others with words and actions.
- ❖ Be seated and ready to begin when the bell rings.
- ❖ Use spill-proof containers for beverages and leave food at the door.
- ❖ Turn off and put away cell phones and entertainment devices unless otherwise directed by the teacher.
- ❖ Clean up before leaving the classroom.
- ❖ Follow the LHS Student Handbook and Network & Internet Use policies.

Grading Policy:

Your overall letter grade is weighted as follows:

Tests and Quizzes	30%
Labs Assignments Notebook Peer Reviews	60%
Final Exam	10%
Total	100%

Your letter grade will be determined as follows:

A.....90% or above
B.....80% to 89%
C.....70% to 79%
D.....60% to 69%
F.....Below 60%



Assessments:



Unit Tests are worth 100 points each and are announced in advance. You may use your own handwritten notebook during a test. You may retake each test once after successfully completing a review activity. Your original score and retake score will be averaged.

Quizzes worth more than 10 points are announced in advance.

The *final exam* is 10% of the final grade and may include both a written and performance component.

Unless permission is granted by the teacher *in advance*, using personal electronic devices during an assessment will result in a score of 0.

Labs & Assignments:

Most labs will be scored based on a detailed rubric or set of grading criteria. All other assignments will earn a percentage of the total points possible. For example:

Complete & carefully attempted	100%
More than half carefully attempted	60%
Less than half carefully attempted	20%
Far from complete or insufficient effort	0%

Excused Absences:

When you return to school, be prepared to make up any missing work within the number of days you were absent + 1 day. For one week following this deadline there will be a 10% late penalty and 20% thereafter.

Special consideration can be made for extended absence or verified emergencies. Be sure to contact the teacher as soon as possible.



Course Goals:

- Know the basic history of video games and fundamentally related technologies.
- Describe a variety of video game genres and give examples for each.
- Follow a design process that creates unique games that satisfy predefined criteria.
- Use variables, conditional statements, and events to create engaging games.
- Create and edit a variety of multimedia resources including images, sounds, and music.
- Analyze, critique, and evaluate games created by yourself and others.

Notebook:

A notebook is required for this course. It should include all of the following:

- ❖ Cornell notes
- ❖ In-class activities
- ❖ Unit vocabulary
- ❖ Weekly reflection
- ❖ Other course materials



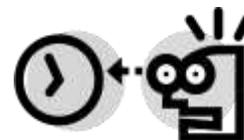
You will be allowed to use your written notebook on tests and quizzes. This includes the final exam. Be sure to take accurate, organized, and readable notes.

Each unannounced notebook check is worth a possible 20 points. Your score is based on possession, organization, and completeness on the day of the notebook check. Use the *Cornell Notes* system to receive full credit on your notebook.

Late notebooks will lose 10% of their earned value (20% if more than a week late).

Late assignments will lose 10% of their earned value (20% if more than a week late).

Some labs will require peer review. Your lab will not receive a final grade until this process is complete.



Peer Review forms will be provided by the teacher.

Unexcused Absences:

If you have an unexcused absence, you will not be able to make up in-class activities. Projects or unit tests that reflect many days of learning can be made up, but will lose a portion of their value based on the number of unexcused absences affecting that unit or project.



If you are present but choose not to take a test or quiz with the class, your future score will be reduced by 10% (20% if more than a week has passed).

Contact Mr. Helland:

	Lebanon High School – Room 721
	(541) 451-8555 ext 1090
	tim.helland@lebanon.k12.or.us
	https://www.timhelland.com

Mr. Helland's Schedule:

1	Introduction to CS
2	3D Design and Animation
3	3D Game Programming
4	<i>Planning</i>
5	Game Programming
6	Game Programming
7	Robotics Exploration

Materials:

In addition to basic school materials, the following materials are strongly suggested for this course:



3-ring or spiral notebook

It will be turned in to the teacher at the end of each unit.

Portable or Online Storage

A USB Storage device or Google Drive account may prove useful and convenient in this course.

Home Computer

A computer running a modern operating system such as Windows 7 or Mac OS X may be useful if you get behind or want to explore deeper into the course.

I Need Help!

There are many resources available to you if you get stuck or don't understand. Some of them are:

- ❖ Your teacher
- ❖ Peer study groups
- ❖ Your teacher's website
- ❖ Online videos
- ❖ Online tutorials
- ❖ Tutoring



With advance notice, the teacher reserves the right to adjust these guidelines to provide a safe and productive learning environment for all students.