William D. Ford Career-Technical Center

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2024-2025
Game Design & Programming II

State CIP: 11.0201
Course Number: V7120
PSN: 19024

Instructor: **Griffin Herman**

NOTICE: It may be necessary to modify this document during the year. A current version will be available online.

Course Description
The primary focus of this course is to **extend** the skill set from Year 1 into a second language, Python. Students will create various programs in which they will explore the similarities and differences between Python and JavaScript. Students will extend their programs to function on physical devices and via remote instructions. Students will research current trends in User Interface (UI) design. Students will create a final project in which they will combine software and a physical device to solve a problem.

Course Materials

Online Resources & Software
Course Web Site: classroom.google.com
- Google Suite
- Cisco NetAcad

Software Tools & Apps (partial list)
- Programming: Python
- Cloud Usage: Drive, Git, Portfolios
- Browsers: Chrome, Firefox, Opera, Safari, I.E.
- Art: Adobe Creative Cloud, Maya Autodesk
- Game Design Engine: Godot, Unreal

Hardware
- Networked Computers: PC
- Large Screen TVs (collaborative work)
- Internet of Things Kits

Gaming Hardware
- Nintendo Switch
- Gaming Pc's

In addition to the above, the instructor has a library of books that are used as additional resources. This library is conveniently set in the classroom and students are encouraged to use these items as additional resources to accomplish course assignments. When time permits, students may also pursue self-directed learning in

advanced/specialized topics.

Electronic Resources
The course employs a great deal of technology and therefore utilizes many online resources. The instructor will supply students with links such as the Unity Curriculum and tutorials applicable to student tasks for LiveCode. In addition, students are encouraged to enrich the learning community by sharing exceptional resources they find.

One final student resource is the course website. Students register at this site at the beginning of the year and then receive agendas, resources, assignments, etc. by logging in each day. The site is Internet-based and available to the student (as well as *parents/guardians*) at any time. The starting page for the site is: classroom.google.com

Course Credit
This is a year-long course (2 semesters) that meets each weekday (Monday through Friday). Upon successful completion of ***each semester***, students earn 1.5 credits. Articulation credit may be earned based on instructor review.

Projects
Students start to embrace their path in programming and game design. Some of the options students may choose from are as follows:

- 3D modeling
- 2D Art
- 3D and 2D Animation
- Texturing
- Game Design
- UI / UX Design
- Advanced Programming
- Game Engine Coding

Segment Q Topics

1. Utilize an online code repository for version control
2. Research and present current standards in GUI design
3. Research, compare, and test current app development tools
4. Build an app (web and/or native)
5. Test an app creation on 1 or more devices/platforms
6. Research and utilize the latest programming tools/libraries
7. Write code to be used on a current microcontroller
8. Utilize sensors for input/output in conjunction with a current microcontroller
9. Present a cloud-based portfolio
10. Utilize 3D tools to create models & objects
11. Research I.T. trends in hardware and software
12. Utilize cloud-based documents for team collaboration

Semester 1 Topics

- Intros and surveys
- Iteration and Feedback
- Game Development Cycles

- Designing Bots
- Python
- App evaluation design & function
- Monetization
- Research project
- Data and file organization
- Review and exams
- Portfolio and senior project

Semester 2 Topics

- Data and databases
- Problem-solving strategies
- Student game class contest
- User interfaces
- App testing and improvement
- Resume refining
- Portfolio presentations and review
- Portfolio and senior project

Evaluation and Grading

Students are evaluated in a variety of ways. In addition to regular assignments and coursework, students are given *Skills Tests* upon completion of certain units. These tests are designed to determine both how well a student can explain key concepts (in written form) as well as how well he/she can perform certain skills (actually creating solutions using the computer). Students earn points for assignments and these are then the basis for determining a marking period grade. Typically, a marking period has roughly 150 points available. A student's grade is determined by how many of the available points he/she has earned. Based on the percentage of points earned, a student will be assigned a letter grade:

89% or higher = A
88.9% - 79% = B
78.9% - 69% = C
68.9% – 59% = D
under 58.9% = E

Student Leadership

All students will apply their knowledge and leadership skills through classroom competitions. The goal of these competitions is for students to develop workplace competencies, such as teamwork, leadership, communication, critical thinking, and academic proficiency that are aligned with industry standards and expectations. Leadership skills are fostered by encouraging students to develop and participate in planning and decision-making, as well as running for elected positions within the classroom. All projects are developed and evaluated by people in the industry. Students may also participate in individual contests with other Career Tech Centers and post-secondary institutions. Each of the second years will choose a category to participate leadership in, the options for each student are Game Jams Coordinator, Math Coordinator, Professional Coordinator, Project Leader, or Classroom Leader.

Employability

As a facility, the William D. Ford Career Technical Center has chosen to address "Employability" as a key area

to both track and promote employer-desired practices. As a result of building discussions and input from our local business partners, we have found that *attendance, attitude, and effort* (work ethic) are primary concerns related to a person's employability. As such, a score reflecting each student's overall **employability is tracked weekly and graded.**

The classroom policies regarding classroom conduct prioritize an atmosphere of focused learning and active participation. Students are kindly reminded that eating during class is restricted to a designated 10-minute break, ensuring minimal disruption to the learning environment. If a student brings food to the classroom, it will have to remain in their bag until our 10-minute break. If a student arrives late with food, the school may talk to the student about the importance of being on time and ready for class. This measure is in place to maintain a clean and distraction-free setting. Additionally, students are encouraged to remain attentive during lessons, and the policy against sleeping in class supports this goal. It's understood that attentive engagement enhances the learning experience for all. Furthermore, the school recognizes the significance of minimizing digital distractions. Therefore, students are required to refrain from using their phones during lectures and to address any unfinished assignments during class time. These guidelines collectively contribute to a conducive learning atmosphere that fosters concentration, interaction, and academic growth.

Students may receive high marks by consistently working productively, taking a leadership role, assisting other students, or seeking out additional topics of study/work from the instructor. Students will be marked down if their behavior/attitude is inappropriate. Some examples of inappropriate behavior include tardiness, not doing work, being unable to work well with others, and abusing equipment and/or school property.

Work-Based Learning
Work-based learning is a valuable experience in which every student in Career and Technical Education is required to participate. All students will be given opportunities to attend a minimum of one field experience each school year. Those students who do not attend the scheduled experience(s) will be required to find a site where they will spend a minimum of one class period in a business related to their program of study. The student will be required to get the teacher's signed permission, and the parent/guardian's signed permission, fill out a training agreement to be signed by the site supervisor, and provide their transportation to and from the site. Upon completion of the field experience, the student will turn in a question-and-answer assignment provided by the teacher regarding the experience.

This year, it will be the student's job to find 2 positions to shadow over the year. 1 will be in the fall, and 1 will be in the spring. This has to be anything related to the technology field. The position they can shadow can be an IT job, Game Design Positions, Animation, and so on. Students will write a small report

Additional Activities & Optional Opportunities
- National Career-Technical Honor Society (min. course GPA & overall GPA)
- Game Jams Contests - Spring
- Python Certification Level 2
- Python PCEP Certification
- Advanced Placement Test in Computer Science

Students in this course are eligible to sit for the Programming YouScience exam(s), and Python PCEP Exams if they receive an A, which provides industry credential(s) that will support students in gaining employment in the future. William D. Ford Career Technical Center's students with a grade of C or higher are eligible. This opportunity is offered at no cost to families.

Post Secondary Articulated Credit
Students may be eligible to receive free college credit for the successful completion of this course. The

qualifications and number of college credit hours available vary by program and the college with which it is affiliated. This course has articulated credit agreements with the following colleges/ universities: ● Baker College

- ● Ferris State University
- ● Washtenaw Community College
- ● Schoolcraft College
- ● Wayne County Community College

Classroom Rules & Acceptable Use Policy

We have an impressive array of equipment available for **students' educational use**. Students must behave appropriately and use district property as intended. To ensure safety and equipment availability, parents and students are asked to **review and sign off** on the following expectations and guidelines.

1. **District Equipment & Property**
   a. School tools (computers, cameras, scanners, tablets, microphones, etc.) are the property of the district and are to be used ***solely*** in the pursuit of learning and mastering course skills. b. Any use of district property not related to class activities and assigned coursework is not allowed. c. If a student is unsure how to use equipment *properly* he/she is responsible for checking with the instructor. If the appropriateness of the activity is unclear, students shall seek permission beforehand.
   d. Students are expected to know and follow proper techniques for using any equipment used in class. If a student is unclear about how to use/care for equipment, he/she shall seek assistance beforehand.
   e. **Tampering with equipment in the classroom and/or network is taken seriously and has resulted in disciplinary and/or legal action.**
2. **Classroom Safety**
   a. Students are expected to know and follow proper safety measures for day-to-day activities as well as for emergencies. Procedures are discussed & demonstrated in class.
3. **Personal Electronics**
   a. To encourage a proper focus on classroom activities and learning, students are expected to **keep personal electronic devices turned off unless permitted by the instructor**. Examples of devices include **cell phones, MP3/music players, and game systems.** If a student uses a device during break time, he/she is responsible for having the item properly **turned off when the break ends**. If a device is needed *before school or after class has ended*, students shall **put it away during class time**. Students are responsible for the security of items they bring to school.
   b. Students who use devices when NOT given appropriate permission will surrender their equipment to the teacher until the remainder of the class period. If a student accumulates three infractions, disciplinary action will be taken. Non-compliance will result in disciplinary action.
   c. Students should be aware that expensive technology is often small and can be targeted by thieves – **leaving non-essential items at home is the best theft deterrent**.
4. To prepare students for the workplace, headgear (such as hats & bandanas) is not permitted.
5. Students shall bring a pen or pencil to class every day.
6. **Respect & Accountability**

Students shall respect their peers & school personnel and receive the same in return.

7. Students shall properly return equipment & books to their designated areas.
8. Students shall maintain clean work areas (including the Commons) so they are presentable, in good working order, and ready for others to use.
9. Students shall maintain regular attendance in class.

Employability scores are a combination of attitude, attendance, and effort.

Low employability scores affect course grades and may result in a loss of credit. 10. Breaks and other rewards are potentially available for students who have completed the required work in a timely fashion. **Breaks are a privilege**.

11. All school and district policies apply. **Modifications may be made as necessary.**

Important Note: Students may lose equipment privileges if they do not return this form & abide by these policies.
By signing below, I verify that I understand all of the procedures and policies in the Student Handbook. I will follow them as stated and give my best effort to adhere to all policies that contribute to the safety and order of the WDF Game Design and Programming Lab.

Student Sign-Off:

__ **Student** Printed Name _____/_____/_____ Date

_____

_____ __ Student Signature

By signing below, my parent or guardian agrees to support the instructors in maintaining safety and order in the Game Design and Programming Lab.

Parent/Guardian Sign Off:

__ **Parent/Guardian** Printed Name _____/_____/_____ Date

_____

_____ __ Parent/Guardian Signature

Important Note: Students may lose equipment access if they do not return this form & abide by these policies.

Instructor Pledge:

By signing below, the instructor agrees to provide an environment conducive to learning course skills, to make available experiences that facilitate learning, and to promote awareness of job opportunities.

_____ _____/_____/_____

Instructor, Griffin Herman Date

It is the policy of the Wayne-Westland Community Schools Board of Education to prohibit any acts of unlawful discrimination in all matters dealing with students, employees, or applicants for employment. The Wayne-Westland Schools reaffirms its policy of equal educational and employment opportunities for all persons without regard to race, color, gender, religion, age, height, weight, marital status, or disability which is unrelated to an individual's qualifications for employment or promotion, or which is unrelated to an individual's ability to utilize and benefit from the School District's services, activities, benefits, privileges or programs. Inquiries concerning the application of Title VI, Title IX, Section 504, and Title II legislation should be directed to the Executive Director of Student and Legal Affairs, Wayne-Westland Community Schools, 36745 Marquette, Westland, MI 48185 (734-419-2083).