

William D. Ford Career and Technical Center

36455 Marquette St,
Westland, MI 48185
(734) 419-2100

2024-2025

Game Design & Programming I

State CIP: 11.0201 Computer Programming, Programmer
Course Number: V7110
PSN: 19024

Instructor: Griffin Watson

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

Course Description

This course introduces Python programming at an introductory level, guiding students toward an in-depth understanding of game development using the Godot engine.

The instructor also has an in-class tech library, which is an added resource. This library is conveniently set in the classroom, and students are encouraged to use these items to accomplish course assignments. When time permits, students may also pursue self-directed learning in advanced/specialized topics such as databases, Java, C++, art, and animation if they have all of their work finished.

Activity-Rigor Thermometer:

| Activity | Rigor | Activity | Rigor |
|-----------------|-------|------------------|-------|
| Physical | 0 | Math | 4 |
| Reading/Writing | 4 | Computer Skills | 5 |
| Science | 1 | Computer Science | 5 |

Electronic Resources

The course employs a great deal of technology and therefore utilizes many online resources. The instructor will supply students with links that range from instructor-created materials to online tutorials applicable to student tasks. 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:

<http://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 will create many games/programs throughout the course. Periodically, people outside of class will review/evaluate student work. The goal of these projects is to give students direct experience creating, documenting, and evaluating code projects and game creations. Some example projects include:

- RPG Text-Based
- Retro Arcade Game
- Top Down Racing
- Top-Down Shooter
- Platform Games
- Game Jams
- Final Project
- Portfolio

State CTE Competencies & Units Covered:

- CTE Competencies B1 - Sem 1
 - Identify and analyze customer needs
- CTE Competencies B2 - Sem 1
 - Demonstrate effective use of tools
- CTE Competencies B3 - Sem 1
 - Demonstrate software applications for data solutions
- CTE Competencies B4 - Sem 1
 - Create Proper Technical/end-user documentation
- CTE Competencies B5 - Sem 1
 - Demonstrate Knowledge of secure programming and software patching
- CTE Competencies B6 - Sem 1
 - Describe the nature and types of business structures
- CTE Competencies B7 - Sem 1
 - Employ project management skills to oversee development
- CTE Competencies B8 - Sem 1
 - Implement quality control systems
- CTE Competencies B9 - Sem 1
 - Understand and describe the software dev cycle
- CTE Competencies B10 - Sem 1
 - Demonstrate knowledge of device cross-platform development
- CTE Competencies C1 - Sem 1
 - Importance of professional ethics and legal responsibilities
- CTE Competencies C2 - Sem 1
 - Applying copyright laws
- CTE Competencies C3 - Sem 1
 - Use design processes to produce IT products and services
- CTE Competencies C4 - Sem 1
 - Demonstrate equity, inclusion, diversity, and accessibility
- CTE Competencies C5 - Sem 1

- ADA compliance
- CTE Competencies C6 - Sem 1
 - Employee rights and responsibilities
- CTE Competencies C7 - Sem 1
 - Develop a professional portfolio
- CTE Competencies A1 - Sem 2
 - Knowledge of hardware components and software applications ●
- CTE Competencies A2 - Sem 2
 - Identify and compare new IT trends
- CTE Competencies A3 - Sem 2
 - Backup solutions
- CTE Competencies A4 - Sem 2
 - Recognize and analyze potential IT security threats
- CTE Competencies A5 - Sem 2
 - Demonstrate knowledge of network integrity
- CTE Competencies A6 - Sem 2
 - Identify and describe quality assurance
- CTE Competencies A7 - Sem 2
 - Interpret documentation and analyze data

Timeline Planning

Below is a general indication of topics covered during a 10-week marking period; *modifications may be necessary*.

Semester 1 Topics

MP 1

Intros and Surveys, Programming Languages, Google Classroom, File Types and Sizes, Pre-tests, PBiS, Intro G Suite, Memory and Binary, Intro Python, Python Challenges, Safety: Basic Office/ Tech, File and Folders, Video Tutorials Creation, Excel: Data Entry and Analysis, Intro to Agile Development Model.

MP 2

Inventory game, Intro to Git, Safety: Cybersecurity, Python Skills Test, Excel Graphs, Python Gaming Project, Python Gaming Feedback and Analysis, Python Game Iteration, Exam Preparation, Review, and Exams.

Semester 2 Topics

MP 3

Own Game Development, Program Modifications, Testing, and Quality Assurance, Agile Collaborative Software Development, Git Repositories, Personal Goals and Skills, Large Scale Projects, Team Pipeline Workflow.

MP 4

IoT Advanced Projects, Exploration: More Tools for Development, Software Revisions, IoT Competition, Portfolio, and Final Project, Presentations and Review.

Evaluation and Grading

This is the district-wide grading system for the high school is as follows:

| Assigned Grade | Letter Grade Equivalent | Descriptive Label |
|----------------|-------------------------|--|
| 4 | A | Distinguished Understanding |
| 3.5 | A-/B+ | Proficient Understanding |
| 3 | B | |
| 2.5 | B-/C+ | Partial Understanding |
| 2 | C | |
| 1.5 | C-/D+ | Limited Understanding |
| 1 | D | |
| .5 | E | No Understanding (Gave effort.) |
| 0 | E | Not attempted. No effort. No evidence. |

Unlike high school, any grade below a 2 (or letter grade of C) is not passing at Career Tech.

Grades will be based on the following:

- Competency Goals, such as hands-on practical learning through projects, are matched to the state standards for competency.
- Academic Goals, such as written & digital assignments, along with quizzes & exams;
- Employability Goals, such as problem solving, teamwork, and diligence;
- Attendance Goals, which include being in class and on time daily, ready to work;
- Other Goals, such as certification, etc.

A Weekly Goal Sheet will contain the plan/assignments/goals for each week, and the student will keep track of their progress in class. A sample copy is in our Google Classroom. A formative assessment grade will be based on the progress completed and documented on the Weekly Goal Sheet.

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.

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.**

Students are allotted five (5) Paid Time Off (PTO) days per half semester, which may roll over to

subsequent semesters. If a student needs to be absent, they must notify the teaching assistant, Mrs. Ritter, by email at rittere@wwcsd.net before the absence. Any absences beyond the allotted 5 PTO days will result in a deduction of 2 points per additional day missed. Two (2) tardies will count as one (1) absence if the tardy is less than 30 minutes. Any tardiness longer than that will result in an absence. Students are expected to complete all assigned work for any missed days. A failure to notify the teaching assistant of an absence (a “no call, no show”) will result in a 3-point deduction for that day. Participation is a key component of each student’s employability score, and additional point deductions may occur for being off-task or out of the designated area, including but not limited to not working during designated work time, phone use during instruction, or disrespectful behavior. That’s why most weeks will have 12 points for participation and attendance. ****Point values are subject to change.**

The classroom policies regarding classroom conduct prioritize an atmosphere of focused learning and active participation. A part of their weekly employability grade is also based on classroom conduct. Students are kindly reminded that eating during class is restricted to a designated X-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 X-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. As part of preparing for future careers, students are expected to dress in a manner that reflects workplace standards. This includes wearing closed-toe shoes and refraining from wearing pajamas to class. Additionally, clothing with images or messages that are not appropriate for a school setting is not permitted. 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. ****Points will be removed for each of the above rules being broken. ***Points are subject to change.**

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.

To be successful in a career, you have to be at your job on time. Students' parents will be notified after 3 days of unexcused absences. After 5 days of unexcused absences, the family will receive a letter, and after 10 days of unexcused absences, the issue will be brought to the principal, who will decide what actions will take place from there. If a student is tardy, they miss out on that day's warm-up assignment points. 5 tardies will result in a call home. 10 Tardies will result in a loss of the student's parking permit if they have one. Anything further than that will be forwarded to the principals.

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.

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 at least 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, the parent/guardian's signed permission, fill out a training agreement to be signed by the site supervisor, and provide their own 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 a position to shadow over the year. This has to be anything related to the technology field. The positions they can shadow can be an IT job, Game Design Positions, Animation, and so on. Students will write a small report.

Additional Activities & Optional Credentials

- National Career-Technical Honor Society (min. course GPA & overall GPA)
- Python Certification Level 1
- Python PCEP Certification
- Microsoft Office Specialist Certification (multiple options available)
- Google Certification
- Advanced Placement Test in Computer Science
- Year 2 of the Course: Students must receive an 85% or above in both the first and second semesters of their first year, miss less than 20 days for the school year, and receive permission from the Instructor to attend.

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 credentials (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 WDFCTC Game Design and Programming Lab.

Student Sign-Off:

| | |
|-----------------------------------|----------------------------|
| _____ | _____ Student Signature |
| _____ Student Printed Name | _____ / _____ / _____ Date |

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 Signature |
| _____ Parent/Guardian Printed Name | _____ / _____ / _____ Date |

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

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).