

Rangeview High School
Computer Science Essentials
Course Syllabus
2021-2022

Course Title: Computer Science Essentials
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Course Description: PLTW CSE introduces students to coding fundamentals through an approachable, block-based programming language where they will have early success in creating usable apps. As students sharpen their computational thinking skills, they will transition to programming environments that reinforce coding fundamentals by displaying block programming and text-based programming side-by-side. Finally, students will learn the power of text-based programming as they are introduced to the Python® programming language.

The course engages students in computational thinking practices and collaboration strategies, as well as industry standard tools authentic to how computer science professionals work. Students will learn about professional opportunities in computer science and how computing can be an integral part of all careers today. The following is a list of the units of study in the course.

- Unit 1 Creative Computing: Building with Blocks (25%)
- Unit 2 Computing and Society: Transitions to Text (25%)
- Unit 3 Solving with Syntax (35%)
- Unit 4 Computing with a Purpose (15%)

Concepts

Program Design and Development

- **Create programs using procedural, event-driven and object-oriented programming (OOP) paradigms**
- **Design a user interface (UI) based on human-computer interaction (HCI) principles**
- **Use image processing to control program flow and vehicle movement**
- **Debug and test code**

Web Development

- **Use Django® to develop website applications**

Interpretation of Documentation

- **Create task reflection with the Interpreted Performance Guide**
- **Create task reflection with the Interpreted Performance Guide Response Template**
- **Use application programming interfaces (APIs)**

Programming Languages

- **MIT App Inventor based on Blockly**
- **VEX® Coding Studio based on RobotC**
- **Python®**
- **HTML/CSS**

Tools and Software

- **MIT App Inventor based on Blockly**
- **VEX® Coding Studio based on RobotC**
- **Cloud9**

Professional Skills

- Pair Programming
- Agile Project Development/Scrum
- Accountability to a team
- Collaboration on design and implementation
- Presentation/Communication
- Public Speaking
- Ethics

Grading Scale:

| GRADE | SCALE | PERCENTAGE RANGE |
|-------|-------|------------------|
| A | 4.0 | 90-100 |
| B | 3.0 | 80 -89 |
| C | 2.0 | 70-79 |
| D | 1.0 | 60-69 |
| F | | 0-69 |

Body of Evidence:

There are two types of assessment, formative and summative.

Formative (assessments for learning) provide direction for improvement for the student and adjustment of instruction for the teacher e.g. observation, quizzes, homework, discussion, drafts, etc.

Summative (assessment of learning) provide information to be used in making judgments about a students achievement at the end of a sequence of instruction, e.g. final drafts, tests, assignments, projects, performances, etc.

Class Expectations

Make up work and Office Hours: It is the responsibility of the student to make up assignments as soon as you return to class after an absence. In some cases an alternative assignment may be given to the student. A student has two days for each day missed. **No credit will be given for work missed during unexcused absences. Please see Mr. Mills for times for appointment. Completing work in a timely manner is a component of proficiency.**

Student Handbook and Classroom Policies:

Bullying:

Definition: Any written, verbal or pictorial expression, physical or electronic act or gesture, or a pattern thereof by a student that is intended to coerce, intimidate or cause any physical, mental, or emotional harm to any student. This includes the creation of an intimidating, hostile, or significantly offensive environment that interferes with the learning or performance of school-sanctioned activities of any student.

Examples of Bullying:

- Derogatory written or pictorial communications in any media (e.g., letters, notes, cellphones, social networks, voice mail, text messages, pager messages, newspaper articles, invitations, posters, photos, cartoons);

- Derogatory verbal comments (e.g., name-calling, taunting, hostile teasing, spreading rumors, epithets, jokes or slurs);
- Threats of force or violence against a person's body, possessions or residence (e.g., obtaining food or money by threats of force); or
- Physical conduct (e.g., provocative gestures, overly rough horseplay, restricting freedom of action or movement, violence, defacing or destruction of property).

Any student engaged in bullying will face disciplinary action. All concerns of threats or rumors must be reported to a staff member as soon as possible.

Cyberbullying:

Definition: Being cruel to others by sending or posting harmful material using the Internet, cell phone, or any social media. Spreading or forwarding rumors or threats or photos via social media is a serious offense.

Any student engaged in cyberbullying will face disciplinary action. All concerns of threats or rumors must be reported to a staff member as soon as possible. Cyberbullying is a criminal offense and police will be notified.

Academic Dishonesty

Academic dishonesty as defined by our safe schools policy is: Untruthful or deceptive behavior in connection with academics, including plagiarism, cheating on tests or assignments or changing grades without authorization.

FIRST OFFENSE

A zero on the assignment, test, or quiz with no opportunity to make up the work for credit.

SUBSEQUENT OFFENSES

A zero on the assignment, test, or quiz with no opportunity to make up the work for credit AND referral by an RHS Faculty member to the Dean of Students and documentation into the Infinite Campus conference log.

Parent notification will be made in all circumstances. Multiple offenses of any of the above may result in failing a class.