Exploring Computer Science

2014-2015

Instructor: Jonathan Ryberg
Email: jonathan@tywls-astoria.org
Website: http://www.jonathansclassroom.com/

Course Description

In *Exploring Computer Science (ECS)*, students will be introduced to the field of computer science, which includes *collaborative problem solving, algorithmic development,* and *programming languages.* Students will also delve into real-world computing problems that address ethical and social issues relevant to today's adolescents, and learn how computers and technology can begin to solve these problems. *ECS* will focus on three themes: 1) The creative nature of computer science; 2) Technology as a tool for solving problems; 3) The relevance of computer science and its impact on society.

Objectives

1. Evaluate how computers and technology impacts society
2. Design and implement creative solutions and artifacts
3. Apply abstractions and models
4. Analyze their computational work and the work of others
5. Communicate computational thought processes, procedures, and results to others
6. Collaborate with peers on computing activities

Course Structure

ECS is a student-centered class, and is designed to allow for a total immersion in the foundations of compute science. Students will be asked to learn independently as well as participate in group assignments and whole-class discussions. Part of the course will be completed online by accessing *www.jonathansclassroom.com.* In general, students will be expected to complete the following activities:

1. Readings and Discussion
2. Presentations
3. Groupwork
4. Projects

Supplies

- Pen or Pencil
- Notebook

Grading Policy
Throughout the school year, students will be provided *multiple opportunities* to demonstrate their level of mastery within the TYWLS-Astoria Outcomes. All assignments and projects are to be completed by the deadline established in class. If a student is unable to submit a daily assignment such as a classwork assignment or homework, she will have **2 days** to submit it. If she misses a project deadline, she will have **5 days** to submit the project.

Evidence Revision Policy
Once evidence is graded and handed back to the student, she will have **7 days** to revise and resubmit the evidence and rubric. If a student does not adhere to assignment deadlines, she will miss her opportunity to revise her assignment if necessary.

Absence Policy
It is the responsibility of the student to obtain any notes, assignments, and other class information when she i absent. Students can obtain this information by emailing a peer, emailing Jonathan, or checking the class website. For each class a student is absent, she will receive an additional day to complete an assignment unless another agreed upon deadline is discussed with your teacher.

Academic Honesty
Collaboration is encouraged and expected. Please share thoughts,ideas, and information. However, seeking obtain or aiding another to obtain a higher score through unauthorized or deceptive methods is unacceptable Please represent your own work honestly and accurately. If you borrow ideas and information from a resourc you must provide full credit to that person or organization. If you have any questions, please speak with your teacher.

Course Overview

Unit	Topics	Tentative Schedule
1	Human-Computer Interaction	September
2	Problem-Solving	October
3	Web Design	November
4	Introduction to Programming	December-January
5	Computing and Data Analysis	February-March
6	Robotics	April-May