

AP Computer Science Syllabus:

Noble High School, a community of learners, believes that we are all capable of success. Through a rigorous curriculum, we foster the academic and personal growth of life-long learners. We value small, heterogeneous communities, which encourage innovation and honor the voices of all.

A community of learners met through:

Responsible community and global contributor

Rigorous curriculum exhibited through:

Complex thinker

Competent user of content

Flexible worker

Foster the academic and personal growth of life-long learners:

Effective communicator

Life-long learner

Healthy person

Course: AP Computer Science

Grade Level: 10-12

Instructor: Mr. Gaudet

Course Length: 2 Semesters

Summary:

This class provides an extensive and thorough investigation of Java programming techniques. The class is open to students who display a high interest level and proven academic performance. Upon course completion, students will be prepared for the College Board Advanced Placement exam. Success on this exam earns college credit at many colleges and universities.

By the end of this class, students will have met the following standards:

- Understand the main principles of object-oriented software design and programming.
- Learn to code fluently in Java in a well-structured fashion and in good style; learn to pay attention to code clarity and documentation.
- Learn to use Java library packages and classes within the scope of the AP/A Java subset.
- Understand the concept of algorithm; implement algorithms in Java using conditional and iterative control structures and recursion.
- Learn common sorting and searching algorithms: sequential search, binary search, selection sort, insertion sort.
- Understand one and two dimensional arrays and the ArrayList class.
- Acquire skills in designing object-oriented software solutions to problems.
- Study the Marine Biology Simulation case study and accompanying exercises and questions as provided by The College Board.
- Discuss ethical and social issues related to the use of computers.
- Prepare for the A-level AP exam in computer science.

Noble High School Guiding Principles this course emphasizes:

- Complex Thinking through problem solving
- Competent User of Knowledge through teaching, or making an impact with technology
- Effective Communicator through email communications
- Life Long Learner through acquisition of long lasting technological skills.
- Exhibiting Traits of a Healthy Person through developing effective independent work ethic

Expectations for student preparedness:

- Students will have already passed Introduction to Computer Programming.
- Students will purchase the text: Objects First with Java A Practical Introduction using BlueJ, 2nd ed. ISBN:0131249339
- Students will come to class with a desire to meet challenges, a strong work ethic, and the ability to work independently.

Assessment/Grading practices:

Based on daily assignments, daily effort, projects, and self assessment rating.

Honors Option:

Special Notes:

Students in enrolled in this class must possess the ability to work independently and to make daily progress toward course expectations.