

Computer Science Department

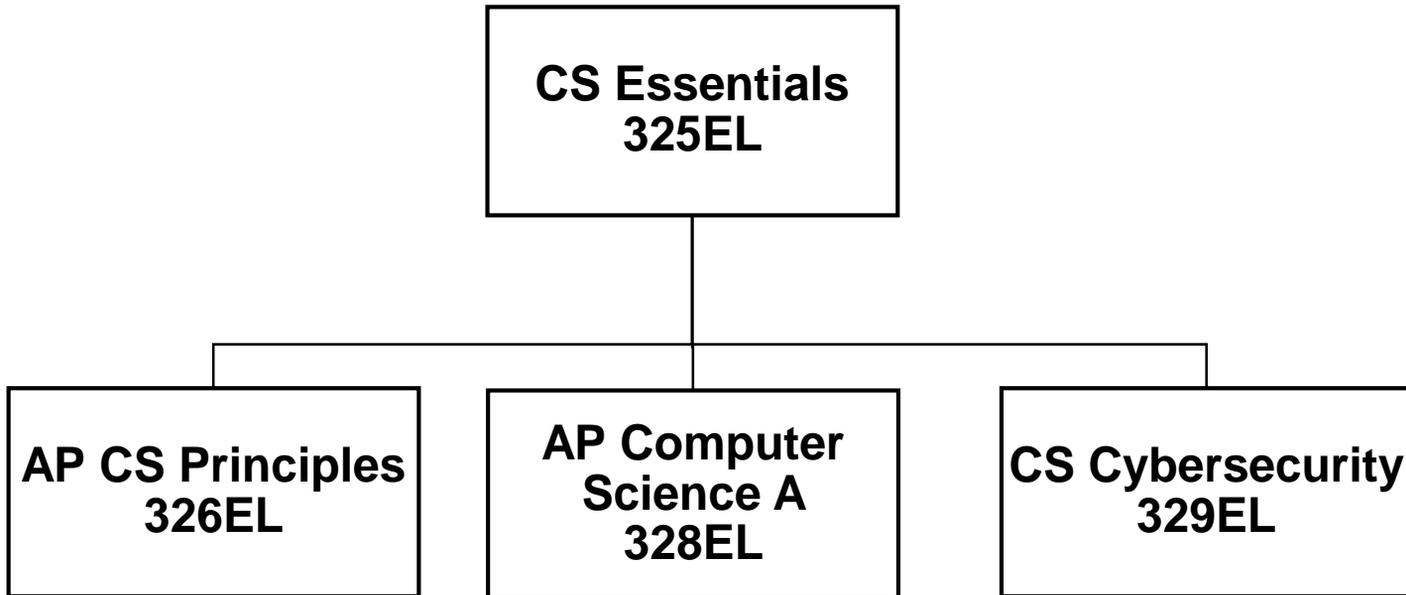
717.464.3311

donald_spangler@l-spioneers.org

adam_zurn@l-spioneers.org

Fun Fact: A computer science course can count as one of the four required math credits *but only one*.

Course Sequence



First Level Course Description

Computer Science Essentials

Course No: 325EL

Credit: 1

Course Weight: 1.0

This course exposes students to a diverse set of computational thinking concepts, fundamentals, and tools, allowing them to gain understanding and build confidence. Students use visual, block-based programming and seamlessly transition to text-based programming with languages such as Python to create apps and develop websites, and learn how to make computers work together to put their design into practice.

and Web-based databases. All components of this course are aligned to the AP Curriculum Framework standards and the AP CSA assessment. A grade of B or better in Computer Science Essentials (325) is highly recommended.

Second Level Course Descriptions

AP Computer Science Principles

Course No: 326EL

Credit: 1

Course Weight: 1.1

Prerequisite: 325EL or instructor permission

Using Python as a primary tool and incorporating multiple platforms and languages for computation, this course aims to develop computational thinking, generate excitement about career paths that utilize computing, and introduce professional tools that foster creativity and collaboration.

This course helps students develop programming expertise and explore the workings of the Internet. Projects and problems include app development, visualization of data, cybersecurity, and simulation.

All components of this course are aligned to the AP Curriculum Framework standards and the AP CSP assessment. A grade of B or better in Computer Science Essentials (325) is highly recommended.

AP Computer Science A

Course No: 328EL

Credit: 1

Course Weight: 1.1

Prerequisite: 325EL or instructor permission

Computer Science A focuses on further developing computational thinking skills through the medium of Android App development for mobile platforms. The course utilizes industry-standard tools such as Android Studio, Java programming language, XML, and device emulators. Students collaborate to create original solutions to problems of their own choosing by designing and implementing user interfaces and Web-based databases.

All components of this course are aligned to the AP Curriculum Framework standards and the AP CSA assessment. A grade of B or better in Computer Science Essentials (325) is highly recommended.

Computer Science Cybersecurity

No: 329EL

Credit: 1

Course Weight: 1.0

Prerequisite: 325EL or instructor permission

This course exposes high school students to the ever-growing and far-reaching field of cybersecurity. Students accomplish this through problem-based learning, where students role-play as cybersecurity experts and train as cybersecurity experts do. CS Cybersecurity gives students a broad exposure to the many aspects of digital and information security while encouraging socially responsible choices and ethical behavior. It inspires algorithmic thinking, computational thinking, and especially, “outside-the-box” thinking. Students will also explore the many educational and career paths available to cybersecurity experts, as well as other careers that comprise the field of information security.

It is strongly recommended that the student should have earned a grade of B or better in Accelerated Algebra I (301) or Algebra I (full year) (305).