Computer Science & Apps

Syllabus Outline: 2022-23

Dear Students:

Welcome to our Computer Science/Applications course. We're going to have a great year! A lot has changed in the past 20 years or so. I didn't take any kind of typing or computer class until I was in high school. Now, computers are introduced in kindergarten! High school graduation does still just require half a credit in "computer applications", however, this has evolved to include mostly computer science now. Exactly what is computer science? We'll be exploring that together this school year. For now, we will be focusing on keyboarding, coding (programming in Python) and how computer hardware (physical computer itself as well as peripherals), software, and networks work along with some digital art! Peripherals are the devices attached to a computer such as a printer or monitor.

First semester will focus primarily on electronics, keyboarding, computer applications (Microsoft Office), and introduction to computer science with a heavy focus on coding beginning with microcontrollers. Digital citizenship will be an important part of this course. Cybersecurity will be introduced during the first semester, focusing on password strength, phishing, and social engineering.

Second semester will primarily focus on more advanced computer science concepts with a more in-depth focus on the hardware layer of computers and their peripherals including networks. For networks, we will look at Cisco Packet Tracer. A deeper look into programming will be entertained as well using Python programming. Students will program their own image viewing program in Python.

Once we get our computers, we will begin each day with keyboarding and work around 10 to 15 minutes using Typing.com. We will then have 35 minutes to focus on computer

science. The computer science curriculum will be using the Code.org curriculum for most of the standards needed for this class. We will supplement it with other systems as we need such as: Scratch, W3Schools, Typing.com, and other resources as we see fit to fulfill our needs. For example, Code.org does not support the Python programming language so we will look at other integrated development environments (IDEs) for this. Edublocks is being reviewed for this at this time.

Since you all are in eighth grade, we can offer Credit by Exam to receive high school credit. We use Edgenuity for that. This is why we will be learning basic Python as this is the programming language featured on the test.

 Work hard and we will learn a lot! Welcome to my cyberworld!