Computer Science Independent Study KAP

Description:
This course extends the understanding of what was learned in AP Computer Science A of programming through study of various contemporary programming techniques. This course is offered at the home campus.
- **Prerequisites:**
  - Computer Science III - Data Structures KAP or Computer Science - Unity Game Development KAP
- **Language(s)**
  - Varies
- **Grade Weight**
  - 5.0

AP CK Cybersecurity II: Cybersecurity

Description:
This course covers foundational cybersecurity concepts and skills and is equivalent to a college-level Introduction to Cybersecurity course. Students will explore the current cyber threat landscape to understand the types of adversaries organizations face and the techniques adversaries use to compromise systems and data. Students will learn how vulnerabilities create risk and how organizations implement security controls to manage that risk. Topics in the course include physical, operational, application, and network security; security controls; cryptography; access control; attacks and detection; and response and recovery. Students will research emerging trends in cybersecurity and gain hands-on experience implementing security protocols.
- **Prerequisites:**
  - AP CK Cybersecurity 1: Networking Fundamentals
- **Grade Weight**
  - 5.0
- **Notes**
  - Industry certification

Computer Science III: Data Structures

Description:
Using advanced problem solving skills and computer science topics, this course provides a stronger foundation for students interested in technology-related careers, including business and engineering. This course is offered at the home campus.
- **Prerequisites:**
  - AP Computer Science A OR Computer Science II KAP OR Computer Science II - Dual Credit
- **Language(s)**
  - Java
- **Grade Weight**
  - 5.0
- **Notes**
  - For those wanting to major in Computer Science, this is the most important Computer Science class for you to take in high school.

Computer Science Unity Game Developement KAP

Description:
Unity Game Development will build on the programming foundation developed in AP Computer Science A / Computer Science II. Students will build the skills necessary to design and develop 2D and 3D games. A few of the technical concepts that this course will cover are object-oriented programming, pathing algorithms, artificial intelligence, sound/image/model management, sprite creation, collision detection and data storage. Students will collaborate with one another, their instructor, and various electronic communities to create multiple game projects in the latest Unity game engine. This course is offered at the home campus.
- **Prerequisites:**
  - AP Computer Science A OR Computer Science II KAP OR Computer Science II - Dual Credit
- **Language(s)**
  - C#
- **Grade Weight**
  - 5.0
- **Notes**
  - Industry certification

AWS Advanced Cloud Computing KAP

Description:
The AWS Advanced Cloud Computing course is an exploration of cloud computing. Upon completion of the course, students are prepared to sit for the cloud computing professional certification. In this course, students explore AWS cloud computing services, applications, and use cases. Students dive deeply into cloud computing best practices and learn how cloud computing helps users develop a global infrastructure to support use case at scale while also developing and inventing innovative technologies. This course is offered at the home campus.
- **Prerequisites:**
  - AP Computer Science A OR Computer Science II KAP OR Computer Science II - Dual Credit
- **Grade Weight**
  - 5.0
- **Notes**
  - Industry certification

AP CK Cybersecurity I: Networking Fundamentals

Description:
The College Board Career Kickstart Cybersecurity 1: Networking Fundamentals course introduces students to the foundations of computer networking, which is critical to understanding cybersecurity concepts at a deeper level. Using the OSI model as a blueprint for the course, students learn about various network devices like switches, routers, and firewalls as well as protocols that power digital communication. This course is built to engage and support students with all levels of experience in computing. This course is aligned with and is a pre-requisite for the Career Kickstart Cybersecurity 2: Cybersecurity Fundamentals course.
- **Prerequisites:**
  - AP Computer Science A OR AP Computer Science Principles OR Computer Science II KAP
- **Grade Weight**
  - 5.0
- **Notes**
  - Industry certification

Computer Science A AP

Description:
AP Computer Science A emphasizes programming methodology, procedural abstraction, in- depth study of algorithms, data structures and data abstractions and is taught in Java. Students enrolled in an AP course are expected to take the corresponding Advanced Placement exam.
- **Prerequisites:**
  - Algebra 1
- **Language(s)**
  - Java
- **Grade Weight**
  - 5.0
- **Notes**
  - Earn college by taking and passing the Computer Science A AP exam

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Computer Science II: Dual Credit

Description:
Introduces the fundamental concepts of structured programming and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy. Students will earn 4 college credits by successfully completing this course. This course is offered at the home campus.
- **Prerequisites:**
  - Computer Science I OR AP Computer Science Principles
- **Language(s)**
  - Unknown (Likely Java)
- **Grade Weight**
  - 4.5
- **Notes**
  - Earn college credit by passing the course.

Computer Science 2 KAP

Description:
Computer Science II expands on the foundation created in Computer Science I and introduces students to more advanced programming concepts. This course will introduce students to object-oriented programming where they will use Java to analyze, write, and test code. Students will explore concepts such as variables, looping, conditionals and the fundamental building blocks of data structures. At the end of the course, each student's knowledge and skills will be challenged through an industry recognized certification in Java.
- **Prerequisites:**
  - Computer Science I OR AP Computer Science Principles
- **Language(s)**
  - Java
- **Grade Weight**
  - 5.0
- **Notes**
  - Industry certification
  - Not recommended for those wanting to major in Computer Science or planning to take Computer Science Data Structures

These courses cover the same content and only one should be taken.

Introduction to Computer Science

Description:
Introduction to Computer Science is a year-long course that does not require background knowledge in computer science. Students will learn about the computing tools that are used every day, while developing their ability to creatively solve real-world problems. Through interactive activities and projects students will learn computational thinking, problem-solving, and programming concepts. This course is offered at the home campus.
- **Prerequisites:**
  - None
- **Language(s)**
  - Varies
- **Grade Weight**
  - 4.0

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Computer Science I

Description:
This foundation course for computer programming emphasizes programming methodology and problem solving using packaged software and graphics. Students learn to code animation and games. This course is offered at the home campus.
- **Prerequisites:**
  - Algebra I
- **Language(s)**
  - Processing
- **Grade Weight**
  - 4.0
- **Notes**
  - Great starting point for those with no programming experience.

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Computer Science Principles AP

Description:
Students are introduced to the foundations of computer science with a focus on how computing powers the world. Students will learn to analyze data, create technology that has a practical impact, and gain a broader understanding of how computer science impacts people and society. This course is offered at the home campus.
- **Prerequisites:**
  - Algebra I
- **Language(s)**
  - JavaScript
- **Grade Weight**
  - 5.0
- **Notes**
  - Great starting point for those with no programming experience.
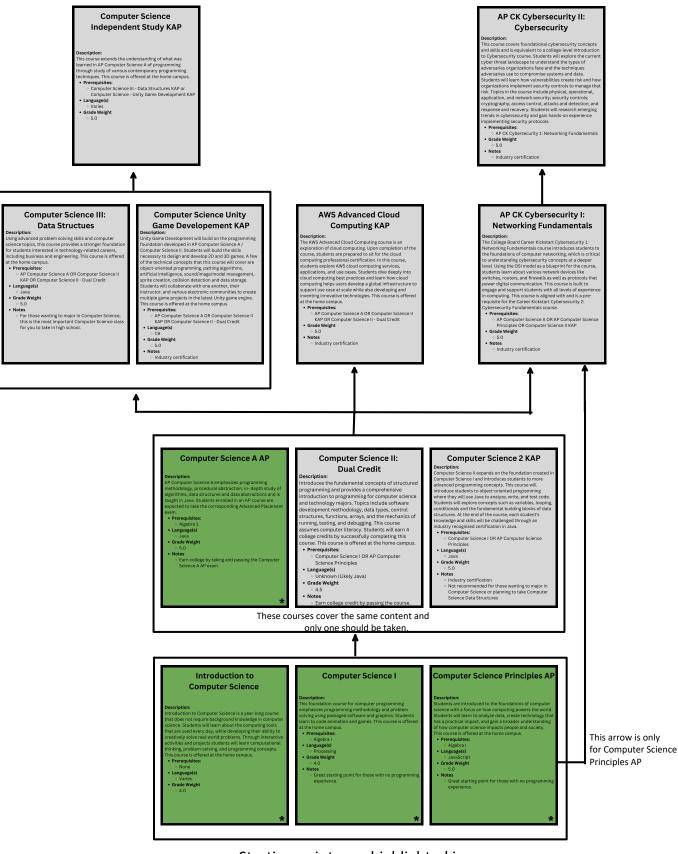
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This arrow is only for Computer Science Principles AP

Starting points are highlighted in green and are marked with an *