

COMPUTER SCIENCE DEPARTMENT Senior High School



Arts &
Communications



Business, Management
Marketing & Technology



Health
Science



Engineering/Manufacturing
& Industrial Technology



Human
Services



Natural Resources
& Agriscience

VPAA – Meets Visual, Performing & Applied Arts Requirement

OLE – Meets Online Learning Experience Requirement

SMR – Senior Math Related

WLII – Meets World Language II Requirement

ADVANCED PLACEMENT COMPUTER SCIENCE PRINCIPALS (VPAA) (SMR) E190 10,11,12 1.0 credit

Advanced Placement Computer Science Principles offers a multidisciplinary approach to teaching the underlying principles of computation. The course will introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts. Advanced Placement Computer Science Principles also gives students the opportunity to use current technologies to create computational artifacts for both self-expression and problem solving.

COMPUTER NETWORKING AND REPAIR I (VPAA) – V544 11, 12 1.0 credit

PREREQUISITE: Teacher recommendation

In this course, students begin by learning to identify, install, configure, upgrade, trouble-shoot and repair computers and peripherals. The curriculum covers a broad range of topics, such as basic PC systems servicing techniques, controlling boot processes, using multi-meters, managing/modifying directories, creating and executing .BAT, .COM, and .EXE files, mapping memory and utilizing the Microsoft diagnostic (MSD) utility. The course then transitions to the designing, building, and maintaining computer networks. The curriculum covers a broad range of topics, from basic networking skills such as pulling cable to more complex concepts. Students will gain hands on experience with installation, configuration, and troubleshooting basic networking hardware, protocols and services. Much of the content for this course is delivered in an on-line format. This course prepares students to take the following CompTia certification exams:

- A+ Essential
- A+ IT Technician
- Network+

COMPUTER SCIENCE I (OLE) (GR/MMC) (SMR) – E200 10, 11, 12 0.5 credit
PREREQUISITE: Completion of Algebra I with “C” average or better. (Occasional exceptions may be made for students showing outstanding potential.)

Computer Science I is an introductory course for students interested in learning the structure and logic of a formal programming language. The course is especially intended for students who may enroll in computer science courses in college. The Computer Science I course will emphasize program structure and design while developing standard programming algorithms and conventional procedures. The topics of study will include program development, functions and procedures, data structures, sorting routines with respect to efficiency, and text files and formatted output.

COMPUTER SCIENCE II (GR/MMC) (SMR) – E210 10, 11, 12 0.5 credit
PREREQUISITE: Successful Completion of Computer Science I

Computer Science II is a continuation of the one-semester Computer Science I course. The course is designed for college-bound students who will major in a scientific or technical discipline that requires computer involvement. The course emphasizes computer science algorithms and their implementation using static and dynamic data structures. Students will study arrays in further detail. The course also will include an introduction to stacks, queues, linked lists, and binary trees. Emphasis will be on computer science topics using formal-structured program design.

ADVANCED PLACEMENT COMPUTER SCIENCE A (OLE) (GR/MMC) (SMR) – E215 11, 12 1.0 credit
Advanced Placement Computer Science A is an introduction to Object-Oriented computer programming using a high-level programming language such as Java. The course will emphasize program structure and design while developing standard programming algorithms and conventional procedures. Classes, member functions, inheritance, polymorphism, operator overloading, sorting routines, and the Advanced Placement Case study will be covered in this course.