

## Interactive Media

### **IT GRAPHIC DESIGN (915381)**

**Grades: 9-12**

**Prerequisite: Acceptance into the IT Program**

**Credit: 1**

IT Graphic Design is designed to train students to become visual communicators. Students will apply the knowledge and understanding of the elements and principles of art through various media, techniques, and processes to solve problems in visual communications. A variety of 2-D and 3-D media will be used. Students will explore technical aspects of layout, typography, illustration, design, and color psychology using traditional graphic tools and electronic media. Students will learn about the ethical issues in the commercial field, management of time to meet deadlines, working in a team, and expressing and defending their ideas. Also, students will study the history and cultural impact of visual communications. Works generated will be the basis for beginning a Graphics Art Portfolio. Completion of a summer assignment is required.

### **IT COMPUTER GRAPHICS I (918080)**

**Grades: 10-12**

**Prerequisite: Successful completion of IT Graphic Design with a "B" or better and a background in computer applications is recommended and teacher recommendation and completion of a summer assignment is required**

**Credit: 1**

This course prepares students for upper-level computer graphics and multimedia as well as entry level career opportunities in the computer graphics industry. The course of study includes learning the foundations of computer graphics, photo design, and production as well as taking images from concept to completion in print and on the web. Tools such as digital cameras and scanners are used to import art and graphics into the computer. The students' artistic abilities will be enhanced as they master Adobe's Photoshop software to complete the design and production process.

### **IT COMPUTER GRAPHICS II (918180)**

**Grades: 11-12**

**Prerequisite: Successful completion of IT Computer Graphics I with a "B" or better, teacher recommendation, and completion of a summer assignment is required**

**Credit: 1**

IT Computer Graphics II is a continuation of IT Computer Graphics I. The course of study will include Adobe Illustrator and Bryce 3-D, plus other applications for image creation and manipulation. The emphasis will be on the study of aesthetics and on the production of original computer imagery. This course will enable modeling for print reproduction rather than web production. Students will work on individual as well as team projects. Students will be required to produce professional portfolios.

### **IT MULTIMEDIA SOFTWARE DESIGN AND DEVELOPMENT I Academy of Multimedia I (918081)**

**Grades: 11-12**

**Prerequisite: Computer Graphics I, "B" average, teacher recommendation and completion of a summer assignment are required**

**Credit: 1**

Multimedia prepares students for the challenging world of information design, multimedia development, web-based development and learning management. The processes and tools that address these aims include HTML, JavaScript, Macromedia Dreamweaver and Flash. Computer based multimedia combines all the facets of communication into an interactive product. The ethical issues of copyright laws and fair use issues will be emphasized. Students will work individually and in teams to complete the project.

**ADVANCED PLACEMENT STUDIO  
ART (2-  
D Design)  
(914800)**

**Grades: 9-12**

**Prerequisite: Completion of Art I and II  
with a "B" or better, or teacher  
recommendation.**

**Recommend completion of Portfolio Prep  
prior to AP Art**

**Credit: 1**

The Advanced Placement studio studies are intended for the highly motivated students committed to serious study in art. Students should have completed Art I and II and have an art teacher recommendation for this course. This portfolio is intended to address a very broad interpretation of two dimensional (2-D) design issues. This type of design involves purposeful decision-making about how the use of the elements and principles of art work in an integral way. This portfolio is comprised of 3 sections: Quality (5 actual works of art), Concentration (12 slides which reflect a series of art around a visual concept in 2-D Design) and Breadth (12 slides that demonstrate a wide variety of concepts, media and approaches.) Actual works of art and slides are submitted for AP Examination review.

**IT PHOTOGRAPHY (919380)**

**Grades: 11-12**

**Prerequisite: Concurrently enrolled in IT  
Multimedia**

**Software Design & Development, teacher  
recommendation, and completion of a  
summer assignment is required**

**Credit: 1**

The study of 35 mm print photography focusing on darkroom development will be introduced. Advanced studies of digital photography using cameras, scanners, and photo editing software will be explored. Students will examine through the camera lens how the elements of art and principles of design contribute to effective compositions that communicate a clear message. Students will compare/contrast the history of photography and digital photography. Ethical issues concerning photographic imagery will be explored. Students will produce a portfolio containing both 35 mm and digital photographs to be used in multimedia classes. This course is designed for interactive media students seeking advanced IT certificate.

**School offering course: 9**

## Network Systems

### **INFORMATION TECHNOLOGY FOUNDATIONS**

**(667080)**

**Grades: 9-10**

**Prerequisite: Acceptance into IT Program**

**Credit: 1**

Information Technology Fundamentals introduces the essential skills needed for students to pursue specialized programs leading to technical and professional careers and certifications in the IT Industry. Students have an opportunity to investigate career opportunities in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance employability.

### **IT ESSENTIALS I (841681) by Tech Ed or 665181 by Business**

**Grade: 10 Semester I**

**Prerequisite: Information Technology Fundamentals recommended**

**Credit: 1/2**

IT Essentials I: PC Hardware and Software sponsored by Hewlett-Packard Company presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands-on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. The curriculum includes an introduction to networking and the course prepares students for CompTIA's A+ certification exam.

### **IT ESSENTIALS II (841682) by Tech Ed or**

**665182 by Business**

**Grade: 10 Semester II**

**Prerequisite: C or better in IT Essentials I**

**Credit: 1/2**

IT Essentials II: Network Operating Systems, sponsored by Hewlett-Packard Company, is an intensive introduction to multi-user, multi-tasking network operating systems. Characteristics of the Linux, Windows 2000, NT, and XP network operating systems will be discussed. Students

will explore a variety of topics including installation procedures, security issues, back up procedures and remote access.

### **NETWORK DESIGN AND ENGINEERING I (854291)**

**Grade: 11: Semester I**

**Prerequisite: Algebra I and Computer Systems**

**Technology with a grade of "A" or "B" and teacher**

**Recommendation**

### **NETWORK DESIGN AND ENGINEERING II**

**(854392)**

**Grade: 11: Semester II**

**Prerequisite: Network Design and Engineering I**

### **NETWORK DESIGN AND ENGINEERING III**

**(854491)**

**Grade: 12: Semester I**

**Prerequisite: Network Design and Engineering II**

### **NETWORK DESIGN AND ENGINEERING IV**

**(854592)**

**Grade: 1: Semester II**

**Prerequisite: Network Design and Engineering III**

**Credits: 1/2**

This is a complete four-semester program on the principles and practice of designing, building, and maintaining computer networks. The Cisco Networking Academies Program is a partnership between Cisco Systems and schools across the nation. Completion of all four semesters prepares students for the CCNA (Cisco Certified Network Associate) exam.

### **COMPUTER NETWORK SOFTWARE OPERATIONS**

**(665080)**

**Grade Levels: 10-12**

**Prerequisite: None**

**Credit: 1**

Computer Network Software Operations is designed to teach many aspects of computer support and network administration. Students learn networking concepts, connecting to networks, install operating systems, set up and manage accounts, load software, and set up and implement security plans. This course may include software-based network operating systems such as Microsoft Windows.

**ADVANCED COMPUTER  
NETWORK  
SOFTWARE  
OPERATIONS (665180)**

***Grades: 11-12***

***Prerequisite: Computer Network  
Software***

***Operations***

***Credit: 1***

This course is designed to continue teaching aspects of network administration focusing on management and support of network users and systems. Students learn advanced techniques to install the operating systems, set up and manage accounts, load software, and set up and implement security plans. This course may include software based network operating systems such as Microsoft Windows. Industry certification competencies will be used for the course.

# PROGRAMMING & DATABASE MANAGEMENT

## INFORMATION TECHNOLOGY FOUNDATIONS

(667080)

**Grades: 9-10**

**Prerequisite: Acceptance into IT Program**

**Credit: 1**

Information Technology Fundamentals introduces the essential skills needed for students to pursue specialized programs leading to technical and professional careers and certifications in the IT Industry. Students have an opportunity to investigate career opportunities in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance employability.

## ADVANCED COMPUTER MATHEMATICS (318480)

**Grades: 9-12**

**Prerequisite: "B" or better in Algebra I and**

**completed or currently enrolled in Geometry**

**Credit: 1**

The computer mathematics course is intended to provide students with experiences in using the computer/calculator to solve problems that can be set up as mathematical models. Programming concepts, problem-solving strategies, and mathematical applications are integrated throughout the course. The advanced course covers all topics in the regular Computer Math class as well as others. This course prepares students for Computer Science.

## ADVANCED PLACEMENT COMPUTER SCIENCE A

(318500)

**Grades: 10-12**

**Prerequisite: Successful completion of Geometry with a "B" or better and teacher recommendation**

**Credit: 1**

The focus of this course is to provide students with a conceptual background in computer science. The major emphasis is on programming methodology, algorithms, and non-dynamic data structure in the JAVA language. This course prepares a student for advanced placement in

computer science by means of the Advanced Placement Examination Level A in Computer Science of the College Entrance Board. This course also serves as a prerequisite for Advanced Placement Computer Science AB.

## ADVANCED PLACEMENT COMPUTER SCIENCE AB

(318560)

**Grades: 11-12**

**Prerequisite: Successful completion of Algebra II and Advanced Placement Computer Science A, and teacher recommendation**

**Credit: 1**

Advanced Placement Computer Science AB covers all the topics of Computer Science A, as well as a more formal and a more in-depth study of algorithms, data structures, and data abstraction. Binary trees, recursive data structures and dynamically allocated structures are fundamental to Computer Science AB. The course prepares a student for advanced placement in computer science by means of a college placement examination or the Advanced Placement Examination Level AB in Computer Science of the College Entrance Board.

## WEB TECHNOLOGY CIW (663080)

**Grades: 11-12**

**Prerequisite: IT Foundations and/or teacher recommendation**

**Credit: 1**

Students will develop an in-depth understanding of the Internet and essential Web page development skills using Extensible HTML, and incorporating images, hyperlinks, tables, forms and frames. Students will learn to write code manually, as well as use GUI authoring tools. Industry certification competencies will be used for this course.

## ADVANCED WEB TECHNOLOGY CIW

(663180)

**Grades: 11-12**

**Prerequisite: Web Technology CIW**

**Credit: 1**

Students will engage in Web Site Development Process using HTML, XHTML, Dynamic HTML, and XML. Server side technologies, Java applets, tables, frames, metadata and Cascading Style Sheets. Industry certification competencies will be used for the course.

## **DATABASE DESIGN AND MANAGEMENT**

**(Oracle)  
(666080)**

**Grades: 11-12**

**Prerequisite:**

**Credit: 1**

The emphasis of this course is database design and programming. Students study database fundamentals to include database development, modeling, design, and normalization. In addition, students are introduced to database programming. Students gain the skills and knowledge needed to use features of database software and programming to manage and control access to data. Industry certification competencies will be used throughout this course.

## **ADVANCED DATABASE DESIGN AND MANAGEMENT**

**(666180)**

**Grade: 12**

**Prerequisite: Database Design and Management**

**Credit: 1**

Students study Java programming and Java database applications. The basics of object-oriented programming and the Java programming language are emphasized in this instruction. Students will prepare for industry certification in database applications and programming. Industry certification course competencies will be used for this course.

## **PROGRAMMING (6640) (664080)**

**Grades: 10-12**

**Prerequisite: None**

**Qualifies for Cooperative Office Education**

**(COE)**

**Credit: 1**

Programming introduces students to programming procedures and careers. Emphasis is placed on modular and structured programming. The Visual Basic programming language is taught as well as HTML and JAVA script. A variety of business applications software will be introduced. COE may be taken concurrently.

## **ADVANCED PROGRAMMING (6641)**

**Grades: 11-12**

**Prerequisite: Programming Qualifies for Cooperative Office Education**

**(COE)**

**Credit: 1**

Students use their knowledge of computer concepts and logic procedures to increase programming skills using the Visual Basic or Visual Basic Net programming language. Complex programs incorporating database management and advanced multimedia features will be developed. Advanced HTML, Front Page, or other industry-based web development programming languages will be used for advanced web page development. COE may be taken concurrently.

## **ADVANCED PLACEMENT CALCULUS**

**AB (317720)**

**Grade: 12**

**Prerequisite: Successful completion of Functions/ Trigonometry or Functions/Analytic Geometry and teacher recommendation**

**Credit: 1**

Calculus AB is an Advanced Placement course. The course consists of a review and extension of the study of analytic geometry and functions with emphasis on a sound understanding of the theory of elementary functions, limits, differential and integral calculus as well as applications of calculus. A student may earn one semester of college credit based on scores on the Advanced Placement Examination of the College Entrance Board. Graphing calculator required.

## **ADVANCED PLACEMENT CALCULUS BC**

**(317760)**

**Grade: 12**

**Prerequisite: Successful completion of Functions/ Analytic Geometry and teacher recommendation**

**Credit: 1**

Calculus BC is an Advanced Placement course. Its calculus content is synonymous with Calculus AB, but includes additional topics, including the calculus of parametric, polar, and vector functions, as well as polynomial approximations and series. This course prepares a student for the Advanced Placement BC Calculus

examination. Students may earn two semesters of college credit. Graphing calculator required.