

# PROGRAMMING & SOFTWARE DEVELOPMENT

## Course Descriptions



### **Information Technology Fundamentals 6670**

**Grade Levels:** 9, 10

**Prerequisite:** Keyboarding is recommended.

Information Technology (IT) Fundamentals introduces the essential skills needed for students to pursue programs leading to professional careers and IT certifications. 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. The focus of the IT Fundamentals course is on introducing skills related to information technology basics, Internet fundamentals, network systems, computer maintenance/upgrading/troubleshooting, computer applications, programming, graphics, Web page design, and interactive media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employability.

### **Database Design and Management (Oracle) 6660**

**Grade Levels:** 10, 11

**Prerequisite:** Information Technology Fundamentals is recommended.

This first-year course includes database design and SQL 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.

### **Advanced Database Design and Management (Oracle) 6661 (Weighted - .025)**

**Grade Levels:** 11, 12

**Prerequisite:** Database Design and Management

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.

### **Programming 6640**

**Grade Levels:** 10, 11, or 12

**Prerequisite:** Keyboarding and Information Technology Fundamentals are recommended.

Students explore computer concepts, use logic procedures, and implement programming procedures using one or more programming languages, such as Visual Basic, Java, C#, and C++. Graphic User Interfaces, such as Alice, Game Maker, and Flash, may be used as students design and develop interactive multimedia applications. In addition, HTML or Java Scripting is used to program Web pages.



**Advanced Programming 6641 (Weighted - .025)**

**Grade Levels:** 11, 12

**Prerequisite:** Programming

Building on a foundation of programming skills, students will use object-oriented programming to develop applications for Windows, database, multimedia, games, mobile, and/or Web environments. Students will have the opportunity to explore and create applications related to the information technology and game design industries. Students will prepare for industry certification in programming.



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