Technology Education

Fulfills Technology Education Credit (TE) requirement for graduation

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ITC2083A Found Computer Sci TE A *
ITC2083B Found Computer Sci TE B *

Course Description: The course provides an engaging introduction to computing concepts. The course focuses on the conceptual ideas of computing so that students understand why tools and languages are used to solve problems through a study of human computer interaction, problem solving, web design, programming, data analysis, robotics and artificial intelligence.

Prerequisite: none

Grades 9-12

Examples of Coursework + Tools:
- [Example Web Design Project](#)
- [Example Scratch Project](#)
- [Google Employees Play with mBots (the robots we use)](#)

TEC2006A Making For Engineers e4usa A *
TEC2006B Making For Engineers e4usa B *

Course Description: Making for Engineers e4usa empowers students to develop their engineering identity through hands-on, human-centered design challenges. Students explore engineering as a profession, work in multidisciplinary teams to solve local problems, and learn systematic design processes while creating prototypes that will be presented at a public showcase. This course satisfies the tech ed requirement for graduation.

Prerequisite: none

Grades 9-12

ITC2084A AP Computer Sci Prin TE A
ITC2084B AP Computer Sci Prin TE B

Course Description: This course advances student understanding of the central ideas (creativity, abstraction, data & information, algorithms, programming, the Internet, global impact) of computer science, engaging students in activities that show how computing changes the world. Through a focus on creativity, students explore technology as a means for solving computational problems, examining computer science's relevance to and impact on the world today.

Prerequisite: Algebra 1, ITC2084A is prerequisite for ITC2084B

Grades: 9-12

[Detailed Information from the CollegeBoard](#)

Website Design

ITC2025A Website Development A
ITC2025B Website Development B

Course Description: Students learn web design from storyboard to finished online web page and develop actual sites from customers' specifications, using HTML, CSS, and graphics editors. Skills in streaming media, audio, and simple animation are developed. Project management provides students with skills to lead teams through projects from inception to completion.

Prerequisite: ITC2025A prerequisite for ITC2025B

Grades 9-12

Sample Student Project:
- [Travel Sites](#)

ITC2012A Advanced Web Tools & Digital Media A*
ITC2012B Advanced Web Tools & Digital Media B*

Course Description: This course introduces students to advanced web topics such as responsive design, advanced CSS techniques, web scripting, and web-based multimedia tools. Artificial Intelligence tools and the ethical impact of AI are also explored.

Prerequisite: Website Development A/B; ITC2012A prerequisite for ITC2012B

Grades 10-12

Sample Student Projects:
-[Image Swaps + Interactive Buttons](#)
-[JavaScript Calculator](#)

*Advanced-Level course

Information Technology (IT) Networking

ITC2077A IT & Cybersecurity Essentials CISCO A*
ITC2077B IT & Cybersecurity Essentials CISCO B*

Course Description: This course offers an in-depth exposure to computer hardware and operating systems. Students will learn how computer hardware works, how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, they will be introduced to networking and wireless networking. Students will be prepared to take the CompTIA A+ certification exam.

In cybersecurity you will develop an understanding of cybercrime, security principles, technologies, and procedures used to defend networks. Learn valuable security principles and how to develop compliant policies. Develop critical thinking and problem-solving skills using real equipment and Cisco Packet Tracer. Earn digital badges upon successfully completing the course. **Prerequisite:** ITC2077A is prerequisite for ITC2077B

Grades 9-12

[Detailed Information About the CompTIA A+ Certification Exam](#)

ITC2078A Intro to Networks CISCO A*
ITC2078B Intro to Networks CISCO B*

Course Description: This course is designed for students with basic PC usage skills. It introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Also, instruction and training are provided in the proper care, maintenance, and use of networking software, tools, and equipment.

Prerequisite: ITC2078A is prerequisite for ITC2078B

Grades 10-12

This course is preparation for the Network+ Certification exam
[More information about the Network+ Certification](#)

Advanced-Level course

ITC2080A Switching, Routing and Wireless Essentials CISCO A*
ITC2080B Switching, Routing and Wireless Essentials CISCO B*

Course Description: This course provides students with practical classroom and laboratory experience in current and emerging networking technology. It describes the architecture, components, and operations of routers and switches in a small network. Students will configure and troubleshoot routers and switches and resolve common issues with RIPv2, EIGRP, single-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Particular emphasis is given to the use of decision-making and problem-solving techniques in applying science, mathematics, communication, and social studies concepts to solve networking problems.

Prerequisite: Intro to Networks CISCO ITC2078A is prerequisite for ITC2080A

Grades 11-12

This course is a continued part of preparation for the CCNA Certification Exam - additional materials beyond this course are part of the new version of this exam, so students would finish this course with only **partial** preparation for the exam.
[More information about the CCNA Certification](#)

Computer Programming

ITC2024A Computer Programming 1A*
ITC2024B Computer Programming 1B *

Course Description: This course introduces the basic principles of structured programming, within the context of an object-oriented language. Topics covered include fundamentals of programming, simple and structured data types, control statements, functions, lists, grids, string manipulation, file I/O, and classes. Emphasis is placed on developing effective problem-solving techniques through individual and team projects.

Prerequisite: Corequisite Geometry or Honors Geometry; **ITC2024A is prerequisite for ITC2024B**

Grades: 9-12

Sample Projects:
-**Sample Project Descriptions**
-Pirate Translator
-Uno
-Record Store

Advanced-Level course

ITC2007A AP Computer Sci JAVA A (Programming 2)
ITC2007B AP Computer Sci JAVA B (Programming 2)

Course Description: Using the Java language, students explore in-depth work with text files and arrays, abstract data types, recursion, searching and sorting algorithms, and program efficiency. Examination of specified class behaviors, interrelated objects, and object hierarchies are studied. Students may elect to take the A version of the AP Computer Science exam after completing this course.

Prerequisite: Computer Programming 1A/B; ITC2007A is prerequisite for ITC2007B

Grades: 10-12

More Detailed Information from the CollegeBoard

ITC2021A Computer Programming 3 Advanced Topics A*
ITC2021B Computer Programming 3 Advanced Topics B*

Course Description: Students will study advanced programming methodology, the features of programming languages, primitive data types, dynamic allocation of memory, data structures, searching, sorting, and numerical algorithms, using the JAVA programming language. Students also are introduced to software engineering concepts and team-oriented approaches for solving problems. Students will explore advanced topics such as concurrency, network programming, and systems programming.

Prerequisite: AP Computer Sci JAVA A/B; ITC2021A is prerequisite for ITC2021B

Grades: 11-12