

**BUSINESS/INFORMATION TECHNOLOGY PROGRAM OF STUDY**  
*(Class of 2020 Only)*

*Pathway Description*

Information Technology (IT) remains one of the fastest growing and highest paid employment sectors in the state of New Jersey. The annual average wage for job opportunities in New Jersey's technology cluster was \$103,797 in 2014 (That's 173% of the statewide average (\$60,146) for all industries). Like many other STEM fields, the current demand and supply are mismatched, as computer science career openings outpace students' skills and interest. Also, like many other fields, computer science interest starts long before a student decides on a major or even applies to college.

Our Information Technology program gives our students access to the very latest in computational thinking. The curriculum empowers students to become creators rather than consumers of the technology, coupled with exploring the impact of computing on society and building skills in digital citizenship and cybersecurity. Through this program students will learn the latest on the creation of apps for mobile devices, game design, programming language, visualization of data, cybersecurity, and designing and implementing user interfaces and web-based databases.

This pathway includes a rigorous series of courses designed by Project Lead The Way (a nonprofit, STEM education program taught across the U.S. and endorsed by the nationally recognized College Board). The courses include: Introduction to Computer Science, Computer Science Principles, Computer Science A, and Cybersecurity. The pathway will also integrate various technology-driven business courses to ensure students have a broader perspective on consumer demands including: Fundamentals of Business, Digital Business Tools, and Principles of Finance.

**BUSINESS/INFORMATION TECHNOLOGY PROGRAM OF STUDY**  
*Course Sequence*

<b>CORE</b>	<b>GRADE 9</b>	<b>GRADE 10</b>	<b>GRADE 11</b>	<b>GRADE 12</b>
<b>ENGLISH</b>	<b>ENGLISH I</b>	<b>ENGLISH II</b>	<b>ENGLISH III OR AP LANGUAGE/COMP</b>	<b>ENGLISH IV OR AP LITERATURE/COMP</b>
<b>SOCIAL STUDIES</b>	<b>WORLD HISTORY</b>	<b>US HISTORY I OR PRE AP US HISTORY I</b>	<b>US HISTORY II OR AP US HISTORY II</b>	<b>AP HISTORY OR SS ELECTIVE</b>
<b>MATHEMATICS</b>	<b>ALGEBRA I OR GEOMETRY</b>	<b>GEOMETRY OR ALGEBRA II</b>	<b>ALGEBRA II OR PRECALCULUS</b>	<b>PRECALCULUS OR AP CALCULUS AB/BC OR MATH ELECTIVE</b>
<b>SCIENCE</b>	<b>BIOLOGY</b>	<b>CHEMISTRY</b>	<b>PHYSICS OR AP PHYSICS I</b>	<b>AP SCIENCE OR SCIENCE ELECTIVE</b>
<b>HEALTH/PHYSICAL EDUCATION</b>	<b>FITNESS AND HEALTH I</b>	<b>FITNESS AND HEALTH II</b>	<b>FITNESS AND HEALTH III</b>	<b>FITNESS AND HEALTH IV</b>
<b>CTE MAJOR</b>	<b>FUNDAMENTALS OF BUSINESS</b>	<b>DIGITAL BUSINESS TOOLS</b>	<b>PRINCIPLES OF FINANCE</b>	<b>CYBERSECURITY</b>
<b>INTERDISCIPLINARY STUDIES</b>	<b>INTRODUCTION TO COMPUTER SCIENCE</b>	<b>COMPUTER SCIENCE PRINCIPLES</b>	<b>COMPUTER SCIENCE A</b>	<b>GRAPHIC DESIGN</b>
<b>WORLD LANGUAGE</b>	<b>SPANISH I</b>	<b>SPANISH II</b>	<b>SPANISH III</b>	<b>AP SPANISH OR ELECTIVE</b>

*\*Program Available to Class of 2020 (Business/IT) Only*

**Business/Information Technology Program of Study**  
*Course Credits*

**Freshman**

English I	5 credits
World History	5 credits
Algebra I or Geometry	5 credits
Biology	5 credits
Spanish I	5 credits
Fitness and Health I	5 credits
Fundamentals of Business	5 credits
Introduction to Computer Science	5 credits

**Sophomore**

English II	5 credits
US History I or Pre-AP US History I	5 credits
Geometry or Algebra II	5 credits
Chemistry	5 credits
Spanish II	5 credits
Fitness and Health II	5 credits
Digital Business Tools	5 credits
Computer Science Principles	5 credits

**Junior**

English III or AP Language/Comp	5 credits
US History II or AP US History II	5 credits
Algebra II or Pre-calculus	5 credits
Physics or AP Physics I	5 credits
Spanish III	5 credits
Fitness and Health III	5 credits
Computer Science A	5 credits
Principles of Finance	5 credits

**Senior**

English IV or AP Literature/Comp	5 credits
AP History or SS Elective	5 credits
Pre-calculus or AP Calculus AB/BC or Math Elective	5 credits
AP Science or Science Elective	5 credits
AP Spanish or Elective	5 credits
Fitness and Health IV	5 credits
Cybersecurity	5 credits
Graphic Design	5 credits

**Business/Information Technology**  
*Course Descriptions*

**Course Title: Fundamentals of Business**

**Grade Level: 9**

**Credits: 5**

Fundamentals of Business provides students with the understanding of how business impacts and is influenced by a global economy in the 21<sup>st</sup> century. This course is designed to strengthen students' skills across the curriculum and acquaint students with the activities associated with a business. The goals of this course are to introduce students to the different internal and external elements of a business and the context in which a business operates. Students will gain a comprehensive understanding of business procedures and issues emerging in today's global economy. Fundamentals of Business explores common elements and characteristics of business such as marketing, accounting, economics, management, technology, and ethics. Topics are grouped in occupational clusters to assist students in choosing pathways of interest for college and/or a career. Overall, the course gives students a broad exposure to business operations and a solid background for additional business courses.

**Course Title: Introduction to Computer Science**

**Grade Level: 9**

**Credits: 5**

Designed to be the first computer science course for students who have never programmed before, ICS is an optimal starting point for the PLTW Computer Science program. Students work in teams to create apps for mobile devices using MIT App Inventor®. They explore the impact of computing in society and build skills in digital citizenship and cybersecurity. Beyond learning the fundamentals of programming, students build computational thinking skills by applying computer science to collaboration tools, modeling and simulation, and data analysis. In addition, students transfer the understanding of programming gained in App Inventor to text-based programming in Python® and apply their knowledge to create algorithms for games of chance and strategy.

**Course Title: Computer Science Principles****Grade Level: 10****Credits: 5**

Using Python® as a primary tool and incorporating multiple platforms and languages for computation, this course aims to develop computational thinking, generate excitement about career paths that utilize computing, and introduce professional tools that foster creativity and collaboration. While this course can be a student's first in computer science, students without prior computing experience are encouraged to start with Introduction to Computer Science. CSP helps students develop programming expertise and explore the workings of the Internet. Projects and problems include app development, visualization of data, cybersecurity, and simulation.

**Course Title: Digital Business Tools****Grade Level: 10****Credits: 5**

Students will develop proficiency with Microsoft Access®, Excel®, Word®, and PowerPoint® software, as well as integrate these software programs. This course is designed to focus on advanced functions that will help students learn to navigate one of the most utilized software programs throughout high school and college.

**Course Title: Computer Science A****Grade Level: 11****Credits: 5**

CSA focuses on further developing computational thinking skills through the medium of Android™ App development for mobile platforms. The course utilizes industry-standard tools such as Android Studio, Java™ programming language, XML, and device emulators. Students collaborate to create original solutions to problems of their own choosing by designing and implementing user interfaces and Web-based databases. The course curriculum is a College Board-approved implementation of AP CSA.

**Course Title: Principles of Finance****Grade Level: 11****Credits: 5**

The course introduces students to all phases of a business curriculum. The major topics discussed include economics, entrepreneurship, finance, and management. Students will focus on long term success in the business world and begin to understand the main ideas behind future business classes they wish to pursue in a post-secondary setting. The goal of this course is to provide a basic foundation in business management and finance.

**Course Title: Cybersecurity**

**Grade Level: 12**

**Credits: 5**

Cybersecurity (SEC) introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Nationally, computational resources are vulnerable and frequently attacked; in SEC, students solve problems by understanding and closing these vulnerabilities. This course raises students' knowledge of and commitment to ethical computing behavior. It also aims to develop students' skills as consumers, friends, citizens, and employees who can effectively contribute to communities with a dependable cyber-infrastructure that moves and processes information safely.