

## CAREER PATHWAY PROFILE

# INFORMATION TECHNOLOGY



The accelerating development and implementation of computer systems, code, and infrastructure equates to an equivalent increase in the demand for a technically knowledgeable workforce which can create, maintain, and improve data and communications systems. The U.S. Bureau of Labor Statistics states that there will be a 13% increase in Information Technology jobs by 2026.

## 1. Pathway Options

JOB TITLE	DESCRIPTION	CERTIFICATE OR DEGREE REQUIRED	STARTING SALARY
<b>Entry Level: Desktop Support</b>	Computer and printer maintenance and repair. CS asset “moves” support.	Industry Certification(s)	\$40,000
<b>Entry Level: Service Desk Support</b>	Point of contact to support service users and customers reporting issues, requesting information, and access.	Industry Certification(s)	\$50,000
<b>Software Support Engineer</b>	Support of software systems, website, and intranet.	Associate or Bachelor’s	\$60,000
<b>User Interface Developer</b>	Develop and improve customer user interface with company products and programs	Associate or Bachelor’s	\$60,000
<b>Information Tech. Generalist</b>	Information system planning, implementation and administration.	Associate or Bachelor’s	\$60,000
<b>Full Stack Developer</b>	Design and development of software including testing, debugging and implementation.	Associate or Bachelor’s	\$65,000
<b>Data Architect</b>	Assess company information assets and design plans to integrate, centralize, protect and maintain them.	Associate or Bachelor’s with focus and experience on data management systems	\$84,000
<b>Cyber Security Analyst</b>	Protect company hardware, software, and networks from cybercriminals. Understand and monitor company information assets.	Associate or Bachelor’s with focus and experience on cyber security	\$85,000
<b>Information Tech. Manager</b>	Plan, direct and oversee company’s computer and information systems	Bachelor’s plus years experience	\$109,000

## 2. K-12 Course Options:\*

PRESCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
<a href="#">STEM Swap</a>	Robotics for early learners

ELEMENTARY SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
<a href="#">LEGO Robotics</a>	Entry level robotics coding
<a href="#">Ozobots</a>	Entry level robotics coding
<a href="#">Code.org Hour of Code</a>	Introduction to coding

MIDDLE SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
<a href="#">Computer Literacy</a>	File management utilities, word processing, spreadsheets, and graphical presentations
<a href="#">Computing Systems</a>	Computer systems from the level of basic hardware gates through to compilers, languages and applications
<a href="#">Engineering Technology</a>	Applied engineering graphics, communicating technical information, engineering design principles.
<a href="#">Principles of Technology</a>	Seven technical principles: force, work, rate, resistance, energy, power, and force transformers, examining how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in technology equipment and systems.
<a href="#">Project Lead the Way</a>	Activities in computer science, engineering, and biomedical science.

HIGH SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
<a href="#">AP Computer Science</a>	An introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.
<a href="#">Business Programming</a>	Basic concepts in computer programming with an emphasis on business applications.
<a href="#">Communication Technology</a>	How to use computer science and electronic media to present, share, distribute and manage information.
<a href="#">Computer Applications</a>	Microcomputer applications with computer concepts and Microsoft Windows XP.
<a href="#">Digital Media Technology</a>	Basics of photography, graphic design, video, audio, and animation.
<a href="#">IB Computer Science</a>	How computer science interacts with and influences cultures, society and how individuals and societies behave, and the ethical issues involved
<a href="#">Information Tech: Workplace Experience</a>	Knowledge of computer concepts and essential skills necessary for work and communication in today's society.
<a href="#">Intro to Computer Technology</a>	Personal computer operating system and word processing, spreadsheet, presentation, email, scheduling, Internet and database management software
<a href="#">IT Essentials</a>	Computer hardware and software, operating systems, networking concepts, mobile devices, IT security, and troubleshooting
<a href="#">Java Programming</a>	Computer programming using the JAVA programming language with object-oriented programming principles

\* See your school career counselor for information of availability within your school district.

## 2. K-12 Course Options (cont.)

HIGH SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
<a href="#">Minecraft</a>	Game- based learning platform that builds STEM skills
<a href="#">Web Page Design and Development</a>	Design, creation, and maintenance of web pages and websites

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## 3. Local Post Secondary Options:

SCHOOL	DEGREE
<a href="#">Clark College</a>	Associates Degree
<a href="#">Clark College</a>	Bachelor's in Applied Science - Cyber Security
<a href="#">Clatsop Community College</a>	Associate of Arts Transfer
<a href="#">Columbia Gorge Community College</a>	Associate of Science Transfer
<a href="#">Lower Columbia College</a>	Bachelor of Science Transfer
<a href="#">Mount Hood Community College</a>	Associate of Science Transfer
<a href="#">Portland Community College</a>	Associate of Science Transfer
<a href="#">Washington State Vancouver</a>	Bachelor's Degree
<a href="#">Western Washington University</a>	Bachelor's Degree

## 4. Getting Started



### Exploration: Job Shadowing

The entry level jobs of Service Desk and Desk Support are the most common job shadow opportunity available to high school students. Above these entry level jobs, shadowing tends to take place as part of job training and promotion from within the company.



### Preparation: Certifications

Earn certifications that show you are keeping pace with today's technical roles and requirements. Certifications include:

- [Microsoft](#) - Developer, Data Engineer, Administrator, Security Engineer, Solution Architect and more!
- [Compia](#) - Industry recognized and vendor neutral
- [HP](#) - HP Product Support
- [Dell](#) - Dell Product Support



### Launch: Clark College Cybersecurity

Career Launch allows you to earn an hourly wage while you work through your courses. For more information, contact [careerconnectSW@esd112.org](mailto:careerconnectSW@esd112.org) or visit [www.careerconnectsw.org/students](http://www.careerconnectsw.org/students).

## 5. Other Resources

### **An Introduction to Computational Thinking**

[Steps of Computational Thinking](#)

### **Computational Thinking in the Elementary Classroom**

[Recommendations for the Classroom](#)

### **What REALLY is Data Science?**

[Data Scientist Perspective](#)

### **Demystifying Data Science**

[TED Talk](#)



**For any of the above opportunities, discuss options with your teacher or career counselor.**



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