

CAREER PATHWAY PROFILE

COMPUTER SCIENCE & 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 Computer Science jobs by 2026. If you have an aptitude for technology and like to solve problems and create innovative solutions, computer science is a very lucrative field worth considering.

1. Pathway Options

JOB TITLE	DESCRIPTION	CERTIFICATE OR DEGREE REQUIRED	STARTING SALARY
Entry Level: Desktop Support	Computer and printer maintenance and repair. CS asset “moves” support.	Industry Certification(s)	\$40,000
Entry Level: Service Desk Support	Point of contact to support service users and customers reporting issues, requesting information, and access.	Industry Certification(s)	\$50,000
Software Support Engineer	Support of software systems, website, and intranet.	Associate or Bachelor’s	\$60,000
User Interface Developer	Develop and improve customer user interface with company products and programs	Associate or Bachelor’s	\$60,000
Information Tech. Generalist	Information system planning, implementation and administration.	Associate or Bachelor’s	\$60,000
Full Stack Developer	Design and development of software including testing, debugging and implementation.	Associate or Bachelor’s	\$65,000
Data Architect	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
Cyber Security Analyst	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
Information Tech. Manager	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
STEM Swap	Robotics for early learners

ELEMENTARY SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
LEGO Robotics	Entry level robotics coding
Ozobots	Entry level robotics coding
Code.org Hour of Code	Introduction to coding

MIDDLE SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
Computer Literacy	File management utilities, word processing, spreadsheets, and graphical presentations
Computing Systems	Computer systems from the level of basic hardware gates through to compilers, languages and applications
Engineering Technology	Applied engineering graphics, communicating technical information, engineering design principles.
Principles of Technology	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.
Project Lead the Way	Activities in computer science, engineering, and biomedical science.

HIGH SCHOOL LEVEL	
COURSE/ACTIVITY	DESCRIPTION
AP Computer Science	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.
Business Programming	Basic concepts in computer programming with an emphasis on business applications.
Communication Technology	How to use computer science and electronic media to present, share, distribute and manage information.
Computer Applications	Microcomputer applications with computer concepts and Microsoft Windows XP.
Digital Media Technology	Basics of photography, graphic design, video, audio, and animation.
IB Computer Science	How computer science interacts with and influences cultures, society and how individuals and societies behave, and the ethical issues involved
Information Tech: Workplace Experience	Knowledge of computer concepts and essential skills necessary for work and communication in today's society.
Intro to Computer Technology	Personal computer operating system and word processing, spreadsheet, presentation, email, scheduling, Internet and database management software
IT Essentials	Computer hardware and software, operating systems, networking concepts, mobile devices, IT security, and troubleshooting
Java Programming	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
Minecraft	Game- based learning platform that builds STEM skills
Web Page Design and Development	Design, creation, and maintenance of web pages and websites

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3. Local Post Secondary Options:

SCHOOL	DEGREE
Clark College	Associates Degree
Clark College	Bachelor's in Applied Science - Cyber Security
Clatsop Community College	Associate of Arts Transfer
Columbia Gorge Community College	Associate of Science Transfer
Lower Columbia College	Bachelor of Science Transfer
Mount Hood Community College	Associate of Science Transfer
Portland Community College	Associate of Science Transfer
Washington State Vancouver	Bachelor's Degree
Western Washington University	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 or visit 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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