COMPUTER SCIENCE (BS)

Bachelor of Science

(90 credits)

Program Description

Developed in partnership with Grays Harbor College, South Puget Sound Community College's proposed Bachelor of Science (BS) degree in Computer Science is designed to serve both employers and students from within the Pacific Mountain Workforce Development Region of Washington. The two colleges hope to open new doors to technology sector employment and stimulate new economic development across their service districts. Spanning northern Lewis, Thurston, southern Mason, Pacific, and Grays Harbor Counties, this economically diverse region includes the state capital, other mid-size cities, and rural areas. To meet the needs of those economies, the Bachelor of Science degree is designed to serve state and local government agencies, healthcare providers, information-computer-security service contractors, nongovernmental organizations, and small and medium-size employers such as architecture, environmental science, and engineering firms. For place-bound students, the degree will provide local access to a broad spectrum of high demand, high-wage job and career opportunities in the field of computer science and information technology. For students who choose to work elsewhere, the program will provide a lower cost/hybrid option to prepare for a high-tech career anywhere.

Career Opportunities

According to the Washington Employment Security Department, for the period of 2019 through 2024, graduates of a Bachelor of Science degree in Computer Science will find over 1,900 annual computer science and information technology job openings in the Pacific Mountain Workforce Development (PacMtn) region. These jobs will provide annual wages of $43,653/year to as much as $131,819/year as System Administrators, Software Developers, Database Managers, and/or Security Analysts.

Outcomes

South Puget Sound Community College believes that all students need to develop a broad range of abilities that will not only make them more effective in their professional pursuits but will enhance their capacity to relate well to others in their daily lives.

- Apply data structures, algorithms, programming languages, and software engineering principles to solve problems.
- Develop applications using well-documented, readable, maintainable, and secure code.
- Identify and analyze a problem and define the computing requirements to solve it.
- Design, implement, evaluate, trouble-shoot and test a computer-based system process, component, or program to meet desired results.
- Evaluate the social impact and ethical issues related to use of computers and computer technology.
- Apply current and cloud-based techniques, skills, and tools for cybersecurity, network administration, application development.
- Demonstrate culturally responsive workplace skills, including teamwork, leadership, critical thinking, creative problem-solving, personal responsibility, and management skills.
- Communicate professionally with clients, peers, and managers from varying and diverse backgrounds, perspectives, specializations, and interests.

The SPSCC college-wide abilities are embedded into each program:

- Effective Communication
- Information Literacy
- Analytical Reasoning
- Multicultural Awareness
- Social Responsibility

Admission Requirements Application Process

Before applying for admission to the program, there are a few requirements to complete. It is your responsibility to ensure that all application materials and required documentation are received by the published application deadline.

Apply to SPSCC (https://spscc.edu/admissions/bachelors/): If you are not already an admitted student at SPSCC, you must become one. Apply online to obtain a ctcLink ID number. *It is free to apply to the college.*

- Complete steps 1-6 and Pay Tuition and Fees.

To enroll, you must have completed at least one of the following:

- AS-T Track 2 with CS142 and CS143
- CS DTA/MRP (AA)
- Associate in Computer Science: Software Development
- Associate in Computer Science: Cybersecurity and Network Administration
- Similar Associate in Computer Science from Grays Harbor College (GHC)
- Computer science-related transfer degree from accredited institution
- Instructor permission

Courses by Quarter Courses by Quarter

Code	Title	Credits
Quarter 1		
CS 310	Database Systems	5
CS 320	Cybersecurity with Networking	5
CS 330	Discrete Math for Computer Science	5
Quarter 2		
CS 340	Mobile Application Development	5
CS 350	Cloud Computing	5
CS 360	Algorithms and Data Structures	5
Quarter 3		
CS 370	Web Programming	5
CS 380	Computer Architecture	5
300 or 400 level Gen Ed		

Recommended:		
PHIL 350	Ethics in Business Management	5
Quarter 4		
CS 410	Software Engineering	5
CS 420	Operating Systems	5
300 or 400 level Gen Ed		
Recommended:		
ENVS 301	Business and Sustainability Principles and Practice	5
Quarter 5		
CS 440	System Administration	5
CS 490	Senior Project I	5
300 or 400 level Gen Ed		
Recommended:		
MATH 205	Linear Algebra (MATH 305?)	5.0
Quarter 6		
CS 450	Machine Learning	5
CS 491	Senior Project II	5
300 or 400 level Gen Ed		
Recommended:		
SOC 350	Organizational Theory	5
NOTE1: Winter start students should plan to complete their Quarter 3 courses in Summer Quarter.		
NOTE2: 300- or 400-level alternative (5cr) at GHC is an acceptable substitute for PHIL 350 at SPSCC.		
NOTE3: BASM 307 (5cr) Quantitative Design, Data, and Analysis at GHC is an acceptable substitute for ENVS 301 at SPSCC.		
NOTE4: The mathematics course for Linear Algebra at GHC is an acceptable substitute for MATH 305 Linear Algebra at SPSCC.		
NOTE5: BASM 309 (5cr) Project Management at GHC is an acceptable substitute for SOC 350 at SPSCC.		
NOTE6: There are a very limited number of 300- and 400-level general education courses offered at GHC and SPSCC. 300- or 400-level General Education courses may transfer in from other institutions in place of PHIL 350, ENVS 301, and/or SOC 350. However, only another Linear Algebra class can substitute for Math 305 Linear Algebra.		

Pathway Maps

South Puget Sound Community College has provided pathways and associated recommended courses for ease of student selection based upon a student's career interest. Please review the pathway maps for required and recommended courses.

Bachelor of Science in Computer Science:
90 credits of 300- and 400-level courses depicted (beyond a valid associate degree).***
Students can start in the Fall or Winter quarter.[1]

*** Completion of 1) AS-T Track 2 with CS142 and CS143, 2) CS DTA/MRP (AA), or 3) Associate in Computer Science: Software Development –or– Associate in Computer Science: Cybersecurity and Network Administration; or similar Associate in Computer Science from Grays Harbor College (GHC); or computer science-related transfer degree from accredited institution; or instructor permission.

Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 5	Qtr. 6
CS 310 (5cr) *Database Systems* ***Fall, Winter only***	**CS 340** (5cr) *Mobile Application Development* ***Winter, Spring only***	**CS 370** (5cr) *Web Programming* ***Spring, Summer only***	**CS 410** (5cr) *Software Engineering* ***Fall only***	**CS 440** (5cr) *System Administration* ***Winter only***	**CS 450** (5cr) *Machine Learning* ***Spring only***
CS 320 (5cr) *Cybersecurity with Networking* ***Fall, Winter only***	**CS 350** (5cr) *Cloud Computing* ***Winter, Spring only***	**CS 380** (5cr) *Computer Architecture* ***Spring, Summer only***	**CS 420** (5cr) *Operating Systems* ***Fall only***	**CS 490** (5cr) *Senior Capstone Project I* ***Winter only***	**CS 491** (5cr) *Senior Capstone Project II* ***Spring only***
CS 330 (5cr) *Discrete Math Topics for Computer Science* ***Fall, Winter only***	**CS 360** (5cr) *Algorithms and Data Structures* ***Winter, Spring only***	**300- or 400-level Gen Ed (Recommended)[2]** **PHIL 350** (5cr) *Ethics in Business Management (SPSCC)* ***Spring, Summer only***	**300- or 400-level Gen Ed (Recommended)[3]** **ENVS 301** (5cr) *Business and Sustainability Principles and Practices (SPSCC)* ***Fall only***	**300- or 400-level Gen Ed (Recommended)[4]** **MATH 305** (5cr) *Linear Algebra (SPSCC)* ***Winter only***	**300- or 400-level Gen Ed (Recommended)[5]** **SOC 350** (5cr) *Organizational Theory (SPSCC)* ***Spring only***

NOTE1: Winter start students should plan to complete their Quarter 3 courses in Summer Quarter.
NOTE2: 300- or 400-level alternative (5cr) at GHC is an acceptable substitute for PHIL 350 at SPSCC.[6]
NOTE3: BASM 307 (5cr) Quantitative Design, Data, and Analysis at GHC is an acceptable substitute for ENVS 301 at SPSCC.
NOTE4: Successful completion of Linear Algebra is a pre-requisite for CS 450 Machine Learning. Completion of MATH 205 from any WA CTC, or equivalent from another institution, is an acceptable substitute for MATH 305 Linear Algebra at SPSCC.
NOTE5: BASM 309 (5cr) Project Management at GHC is an acceptable substitute for SOC 350 at SPSCC.[6]
NOTE6: *There are a very limited number of 300- and 400-level general education courses offered at GHC and SPSCC. 300- or 400-level General Education courses may transfer in from other institutions in place of PHIL 350, ENVS 301, and/or SOC 350. However, only another Linear Algebra class can substitute for Math 305 Linear Algebra.*