# Computer Science
## Bachelor of Science
### 2025-2026

**General Areas of Service:** Computer Science majors are prepared to work in a wide range of areas, from the in-demand field of software development to cutting edge areas like robotics, computer vision, intelligent systems, bioinformatics, and many more. Computer scientists work in three primary areas: designing and implementing software, devising new ways to use computers, and developing effective ways to solve computer problems. Computer science offers a comprehensive foundation that permits graduates to adapt to new technologies and new ideas in many different fields. Electives in the Walla Walla University Computer Science curriculum are organized into strands focusing on particular career paths. These include:

- Applied Computer Science
- Web and Information Management
- Computational Science and Intelligent Systems
- Programming Methods and Tools
- Theoretical Computer Science
- Computer Architecture and Organization

**Professional Training:** A bachelor's degree is required for most jobs, and a master's degree is desirable for many employment opportunities. Prior work experiences (such as those gained through internships) are also important in getting a job in this field.

**Job Outlook:** The Bureau of Labor Statistics (BLS) states that the occupations of computer and information technology are all projected to grow 15 percent from 2021-2031, faster than the average for all occupations. About 682,800 openings for computer and information research scientists are projected each year, on average, over the decade. "These occupations are expected to add about 418,500 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security." (See www.bls.gov)

**Earnings:** According to the most recent Bureau of Labor Statistics (BLS) salary survey from May 2021, the median annual salaries in several computer science related careers were $131,490 for computer and information research scientists, $120,520 for computer network architects; $110,140 for software developers; $77,200 for web developers; and $98,860 for database administrators. (See www.bls.gov)

**Note: Before graduation, all students must take the MFT exam in Computer Science.**

### COMPUTER SCIENCE DEPARTMENT

Kretschmar Hall
(509) 527-2751

### Websites
Walla Walla University
University Bulletin

Computer Science Department

### Faculty
Chair
Benjamin Jackson

Advisors
Preston Carman
James Foster

### Professional Organizations
Association for Computing Machinery

IEEE Computer Society

### Additional Sources
U.S. Bureau of Labor Statistics: Computer & Information Technology Occupations

# Suggested Degree Path

TOTAL CREDITS REQUIRED: 192 cr. GENERAL STUDIES REQUIREMENTS: 64-69 cr. See the Undergraduate Bulletin for Details

The chart below details one suggested path a student may take to complete a bachelor of science degree in Computer Science.

Cognates are listed in *italics* and courses marked UD must be at the 300 or 400 level.

## Freshman Year

| Fall Courses | Hours |
|---|---|
| Fund. of Programming I (CPTR 141) | 4 |
| *Precalculus I (MATH 121) | 4 |
| General Studies: Foundations of Faith | 4 |
| General Studies Social Science | 4 |
| **Total** | 16 |

| Winter Courses | Hours |
|---|---|
| Fund. of Programming II (CPTR 142) | 4 |
| *Precalculus II (MATH 122) | 4 |
| Intro to Analytical Writing (ENGL 121) | 3 |
| General Studies: Oral Communication | 4 |
| General Studies P.E. Activity | 1 |
| **Total** | 16 |

| Spring Courses | Hours |
|---|---|
| Art & Practice of CS (CPTR 108) | 3 |
| *Calculus (MATH 171)* | 4 |
| Intro to Research Writing (ENGL 122) | 3 |
| General Studies: Engaging Faith | 2 |
| General Studies: Engaging Science & Data | 4 |
| **Total** | 16 |

## Sophomore Year

| Fall Courses | Hours |
|---|---|
| Comp. Org. & Assembly (CPTR 280) | 3 |
| Research Writing (ENGL 223) | 3 |
| *Calculus II (MATH 172)* | 4 |
| General Studies: Engaging Faith | 2 |
| General Electives | 4 |
| **Total** | 16 |

| Winter Courses | Hours |
|---|---|
| Software Development (CPTR 245) | 4 |
| Data Analysis (MATH 215) | 4 |
| General Studies: History (Knowing) | 4 |
| General Electives | 4 |
| **Total** | 16 |

| Spring Courses | Hours |
|---|---|
| Data Structures & Algorithms (CPTR 242) | 4 |
| *Calculus III (MATH 273)* | 4 |
| General Studies History (Engaging) | 4 |
| General Studies: Humanities (Knowing) | 4 |
| **Total** | 16 |

## Junior Year

| Fall Courses | Hours |
|---|---|
| Compilers & Languages (CPTR 354) UD | 4 |
| Internship & Career Readiness (CPTR 396) UD | 1 |
| Computer Science Elective | 4 |
| *Digital Logic (ENGR 354)* UD | 3 |
| General Studies Science (Lab) | 4 |
| **Total** | 16 |

| Winter Courses | Hours |
|---|---|
| *Discrete Mathematics (MATH 250)* | 4 |
| Ethical Issues for Computing (CPTR 308) UD | 4 |
| General Studies: Engaging Arts (UD) | 4 |
| General Studies: Exploring Scripture (UD) | 4 |
| **Total** | 16 |

| Spring Courses | Hours |
|---|---|
| Operating Systems (CPTR 352) UD | 4 |
| Computer Science Elective (UD) | 4 |
| General Studies P.E. Activity | 1 |
| General Studies: Adventism (UD) | 3 |
| General Electives (UD) | 4 |
| **Total** | 16 |

## Senior Year

| Fall Courses | Hours |
|---|---|
| Software Engineering (CPTR 450) UD | 3 |
| Senior Project I (CPTR 496) UD | 1 |
| *Intro to Linear Algebra (MATH 239)* | 4 |
| General Electives (UD) | 4 |
| General Electives | 4 |
| **Total** | 16 |

| Winter Courses | Hours |
|---|---|
| Design & Analysis of Algorithms (CPTR 454) UD | 4 |
| Senior Project II (CPTR 497) UD | 2 |
| Computer Science Elective (UD) | 4 |
| General Elective | 4 |
| General Electives (UD) | 2 |
| **Total** | 16 |

| Spring Courses | Hours |
|---|---|
| Computer Science Elective | 3 |
| Senior Project III (CPTR 498) UD | 2 |
| General Studies: Engaging Faith (UD) | 3 |
| General Electives | 4 |
| General Elective | 4 |
| **Total** | 16 |

+ Offered even years only   - Offered odd years only

*Does not count toward Computer Science major, but is a pre-requisite for other required courses.