

### STEM COURSES

#### Reviewed with Agricultural Sciences

| Course                                   | CIP    | Hours | Equivalency*                         |
|------------------------------------------|--------|-------|--------------------------------------|
| Physics                                  | 400891 | 140   | 1.0 Science, 3 <sup>rd</sup> Yr Math |
| AP Physics                               | 400891 | 210   | 1.5 Science, 3 <sup>rd</sup> Yr Math |
| Middle School Courses                    |        |       |                                      |
| Science 7/8                              | 140102 | 180   | N/A                                  |
| Career Choices Spans ALL Career Clusters |        |       |                                      |
| Course                                   | CIP    | Hours | Equivalency*                         |
| IB Personal & Professional Skills        | 320107 | 140   | None                                 |
| Pathways to Success                      | 320107 | 210   | None                                 |

\*(S) denotes equivalency aligned by OSPI framework, otherwise locally determined

### STEM COURSES

#### Reviewed with Business & Marketing, Information Technology

| Course                                           | CIP    | Hours | Equivalency*    |
|--------------------------------------------------|--------|-------|-----------------|
| Pre-Engineering                                  | 140102 | 140   | None            |
| Robotics                                         | 150406 | 140   | 1.0 Lab Science |
| UT ES 301 Engineering Design and Problem Solving | 140102 | 140   | None            |
| Middle School Course                             |        |       |                 |
| Engineering: Design 2 Creation                   | 140102 | 180   | N/A             |
| Career Choices Spans ALL Career Clusters         |        |       |                 |
| Course                                           | CIP    | Hours | Equivalency*    |
| IB Personal & Professional Skills                | 320107 | 140   | None            |
| Pathways to Success                              | 320107 | 210   | None            |

\*(S) denotes equivalency aligned by OSPI framework, otherwise locally de

### POTENTIAL FUTURE PROGRAM GROWTH

- Biotechnology
- Biomedical

### HIGH SCHOOL COURSES TO TAKE NOW

- |                    |                     |                             |
|--------------------|---------------------|-----------------------------|
| • Biology          | • Health Sciences   | • Physics                   |
| • Chemistry        | • Physical Sciences | • Principles of Engineering |
| • Computer Science | • Mathematics       | • Robotics                  |

### EMPLOYMENT PROJECTION SKILLS OF FOCUS

- |                     |                     |                   |
|---------------------|---------------------|-------------------|
| • Analytical Skills | • Critical Thinking | • Problem Solving |
| • Leadership        | • Mechanical        | • Mathematics     |

### LABOR MARKET DATA

#### High School Diploma or Less, On-the-Job Training

| Occupation                                                        | SOC     | Growth | Annual Salary |
|-------------------------------------------------------------------|---------|--------|---------------|
| Short-term Training, Certificate, or Associate of Applied Science |         |        |               |
| Aerospace Engineering and Operations Technicians                  | 17-3021 | 8%     | \$ 79,830     |
| Electro-Mechanical Technicians                                    | 17-3024 | 5%     | \$ 70,760     |
| Industrial Engineering Technicians                                | 17-3026 | 4%     | \$ 64,790     |
| Agricultural and Food Science Technicians                         | 19-4010 | 9%     | \$ 48,480     |
| Biological Technicians                                            | 19-4021 | 16%    | \$ 52,000     |
| Chemical Technicians                                              | 19-4031 | 10%    | \$ 57,790     |
| Sound Engineering Technicians                                     | 27-4014 | 5%     | \$            |

#### Bachelor's, Graduate, or Experience

|                                     |         |     |            |
|-------------------------------------|---------|-----|------------|
| Bioengineers & Biomedical Engineers | 17-2031 | 5%  | \$ 106,950 |
| Health and Safety Engineers         | 17-2111 | 4%  | \$ 109,660 |
| Industrial Engineers                | 17-2112 | 11% | \$ 101,140 |
| Mechanical Engineers                | 17-2141 | 9%  | \$ 102,320 |
| Computer Hardware Engineers         | 17-2061 | 7%  | \$ 155,020 |
| Chemists                            | 19-2031 | 5%  | \$ 84,150  |
| Materials Scientists                | 19-2032 | 5%  | \$ 104,160 |

#### Advanced Degrees or Extensive Experience

|                                           |         |     |            |
|-------------------------------------------|---------|-----|------------|
| Computer and Information Systems Managers | 11-3021 | 15% | \$ 171,200 |
| Architectural and Engineering Managers    | 11-9041 | 4%  | \$ 167,740 |
| Biochemists and Biophysicists             | 19-1021 | 6%  | \$ 103,650 |
| Medical Physicists                        | 19-2012 | 4%  | \$ 166,290 |

### MILITARY CAREERS

"Enlisted" roles are hands-on learning jobs students can start immediately after high school.

| Career                       | Role     | Branches                                    | Median Salary |
|------------------------------|----------|---------------------------------------------|---------------|
| Physical Scientists          | Enlisted | Navy, Air Force, Space Force                | \$ 146,818    |
| Space Operations Specialists | Enlisted | Army, Air Force, Space Force                | \$ 67,042     |
| Physicists                   | Enlisted | Navy, Air Force, Space Force                | \$ 148,440    |
| Chemists                     | Enlisted | Navy, Air Force                             | \$ 141,152    |
| Space Operations Officers    | Officer  | Army, Marines, Navy, Air Force, Space Force | \$ 119,966    |

**Citations:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, <https://www.bls.gov/ooh/>, Last Updated 08.28.2025  
CareerOneStop, US Department of Labor, Employment and Training Administration, <https://www.careeronestop.org>, visited February 2026.  
Today's Military, Explore Careers in the Military, <https://www.todaysmilitary.com/careers-benefits/explore-careers>, visited February 2026.

### EMPLOYMENT NOTES

Advances in technology reach all industries, connecting agriculture, sciences, healthcare, robotics, and manufacturing. Employment opportunities are expected to remain strong:

- Growing demand for biomedical and bioengineering solutions, driving workforce needs in healthcare technologies, medical devices, rehabilitation systems, and agricultural biotechnology.
- Continued investment in infrastructure, renewable energy, and environmental systems, increasing demand for civil, mechanical, and health and safety engineers.
- Expansion of automation, robotics, and advanced manufacturing, supporting employment growth for mechanical engineers, industrial engineers, and mechatronics technicians focused on system optimization and equipment integration.
- Rapid growth in healthcare, agricultural, and industrial robotics, requiring skilled professionals to design, operate, maintain, and troubleshoot automated and robotic systems.
- Rising reliance on information technology, data systems, and artificial intelligence, increasing demand for computer hardware engineers and information systems managers across healthcare, agriculture, and technology sectors.

### ENTRY-LEVEL CERTIFICATIONS

Core certifications identified for jobs with no or minimal high education requirement

#### CareerOneStop Certification Finder

Core level certification recommendations for jobs requiring associate degree or less for entry

- [Robotics Certification](#)
- [Autodesk Certified User \(ACU\)](#)
- [BCSI Safety- Hazard Assessment](#)
- [BCSI Good Documentation Practices](#)
- [BCSI Numeracy](#)
- [BCSI Quantitative Lab Skills I](#)
- [BCSI Lab Safety- Cleanup](#)
- [Pre-Engineering Certification](#)

### SOURCES

**US Bureau of Labor and Statistics, Occupational Outlook Handbook (08.28.2025)**

<https://www.bls.gov/ooh/Robotics Certification>

- Architecture and Engineering
- Life, Physical, and Social Science
- Management

### TOP EMPLOYMENT IMPORTANT QUALITIES

- Be able to identify and fix problems that arise with engineering designs and prototypes.
- Assess needs and evaluate information to solve problems.
- Analyze the digital circuits in hardware to determine the best design.
- Effectively convey information and expectations related to projects.
- Follow instructions and report problems and results.
- Communicate clearly and effectively in verbal and written form to a variety of audiences.
- Properly document research, instructions, and findings in standard reports.
- Ability to work on teams with engineers, developers, programmers, and nontechnical members and communicate in a way that all levels can understand.
- Be able to convey complex information, both orally and in writing, to technical and nontechnical audiences.
- Be creative to come up with innovations in healthcare equipment and devices.
- Use ingenuity to design new production processes or service systems in many settings.
- Be able to interpret regulations and their intent so that they can propose designs for specific worksites.
- Use logic and reasoning to clarify goals, examine assumptions, identify alternative solutions or approaches to the processes and identify the strengths and weaknesses.
- Determine how to allocate resources to reach goals.
- Take and record the precise measurements that engineers need.
- Interact with workers across an organization to evaluate safety programs, identify potential hazards, and recommend corrective actions.
- Listen to and analyze different approaches made by experts in other fields to complete the task at hand.
- Follow specific sequences or set of rules and designs, inspect designs for quality control, and assemble prototypes, and test work.
- Depending on occupation, use calculus, statistics, trigonometry, and other advanced subjects in math for analysis, design, and troubleshooting.
- Apply basic engineering concepts and mechanical processes to the design of new devices and systems.
- Identify issues with safety processes or products and recommend ways to improve them.
- Recognize issues that arise during production processes and recommend resolutions.

### SOURCES

**CareerOneStop (2026) |** <https://www.careeronestop.org/>

- Toolkit / Certification Finder

**Today's Military (visited February 2026)**

<https://www.todaysmilitary.com/careers-benefits/explore-careers>

- Science, Medicine & Digital Technology