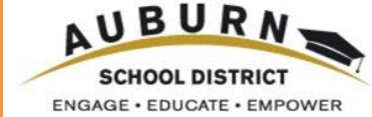




STEM: Science, Technology, Engineering, & Math Career Pathway

Education Planning Guide for Middle School and Beyond



This Career Pathway, along with other career planning materials, serves as a guide to assist students in the Auburn School District in developing a relevant middle-to-high school plan that will prepare them for further education and/or employment in the **STEM & Skilled and Technical Sciences Career Cluster**. The career pathway outlined below can be individualized to meet each learner's education and career goals. It allows students to earn high school credits while completing coursework in middle school, earn college credits while completing coursework within high school, and apply those credits toward attainment of a college certificate and/or degree. It is important to share and review this plan with a parent/guardian and school counselor.

| EDUCATION LEVELS | GRADE | English/ Language Arts | Social Studies | Science | Math | Other Required Courses Other Electives Recommended Electives Learner Activities Leadership Activities | Career & Technical Courses And/or Degree Major Courses | Auburn School District Graduation Requirements | | |
|---|--|---|--|-------------------------------------|--|--|--|--|---|--|
| <i>Interest Inventory Administered and Plan of Study Initiated for all Learners</i> | | | | | | | | | | |
| MS | 8 | Successfully complete required coursework for 6th, 7th and 8th grade, and these electives → | | | STEM Robotics, STEM Mechatronics, STEM Fundamentals of IT, STEM Computer Science | | | | <u>Credit Requirements</u> (24.0 credits total): 4.0 credits - English 3.0 credits - Social Studies 3.0 credits – Math 3.0 credits - Science 1.5 credits – Fitness 0.5 credits – Health 2.0 credits – Arts ** 2.0 credits – World Language ** 1.0 credits – Career and Technical 4.0 credits - Electives <u>Additional Requirements:</u> • High School and Beyond Plan • Culminating Project/Portfolio • Certificate of Academic Achievement or Approved Alternative | |
| | 9 | Language Arts | (.5) World Studies or AP Human Geography | Science (1.0) Next Gen or Biology | Algebra I | (2.0) Credit from Fine Arts or Course Equivalencies | Orientation or Career Choices | Robotics 1 and 2 Engineer/Arch 1&2 Electronics 1 & 2 | | |
| | 10 | Language Arts | Global Issues (.5) or AP Euro | Science (1.0) Next Gen or Chemistry | Geometry | | (.5) 10th Grade Health | Minimum of two years of the same world language are required for students planning to enroll at a four-year university | | Engineering 1 & 2 Woodworking 1& 2 Electronics 1-4 Power & Energy |
| | 11 | American Literature 1, 2 | U. S. History or AP U. S. History | Chemistry | Advanced Algebra and Trig | | (1.5) Credits From Fitness Courses | | | Computer Systems Engineer/Arch 1- 4 Electronics 1- 4 |
| | <i>College Placement Assessments-Academic/Career Advisement Provided</i> | | | | | | | | | |
| 12 | Senior English Electives | Civics (.5) and Elective (.5) or AP American Government (1.0) | Physics or AP Biology or AP Chemistry | AP Statistics or Pre-Calculus | | | Aerospace Assembly 1, 2 AP Computer Science CTE Electronics 3-4 | | | |
| <p><i>*Students who earn a "C" or better in the above (*) courses may be eligible for college credit. See page 3 for more information. **Credits may be applied in a chosen career pathway.</i></p> | | | | | | | | | | |



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| | | |
|-----------------------|---|--|
| POST SECONDARY | <p>The Post-High School program options listed below for this Career Pathway represents just some examples of options available within the Puget Sound area, including programs where agreements for dual credit exist between the college and school district. For other options available related to this program of study, visit your career center or the websites of local colleges.</p> | |
| | Apprenticeship Opportunities | <p>To learn more about apprenticeships in this program, go to: Apprenticeship Registration & Tracking Examples: Metal Structure Robotics Technician, Low Voltage Technician, Signal Lighting Electrician, Construction Equipment Operator, Stationary Engineer</p> |
| | Earn Certificate and Enter Workforce | <p>To learn more about certificate programs, go to: Renton Technical College , Green River College Examples: Commercial Building Engineering, Construction Management, Engineering Design Technology, Aerospace and Advanced Manufacturing Technology, Machining and Manufacturing Technology, Water/Wastewater Technology</p> |
| | Military | <p>To learn more about Military education and training programs, go to: todaysmilitary.com , defense.gov</p> |
| | Associate Degree Transitions | <p>To learn more about Associate degrees, go to: Green River College , Highline College Examples: Associate in Science, Engineering</p> |
| | 4 year University | <p>To learn more about Bachelor and beyond degrees, go to: University of Washington, Washington State University, Western Washington University, Eastern Washington University, Central Washington University Examples: Applied Math, Civil and Environmental Engineering, Electrical Engineering, Civil Engineering, Computer Technology, Electronic Engineering Technology, Engineering, Industrial Technology, Mechanical Engineering Technology</p> |

Students intending to earn an Associate Degree and transition to a 4-year University can use the below section to list appropriate classes.

| COURSE CODE | CREDIT | COURSE NAME | COURSE CODE | CREDIT | COURSE NAME |
|-------------|--------|-------------|-------------|--------|-------------|
| | | | | | |
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STEM: Science, Technology, Engineering, & Math Career Pathway

Education Planning Guide for Middle School and Beyond

The Science, Technology, Engineering and Mathematics Career Pathway prepares students for the highly technical and rewarding careers within a variety of occupational fields. Students learn to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in manufacturing and construction fields.

Occupational Information

The following represent occupations within this field and their average annual earnings and openings based on data from the Washington State Employment Security Department. For more information about these and other occupations within this field, go to <https://esd.wa.gov/labormarketinfo>

| <u>Occupation</u> | Washington State Projected Openings | |
|---|--|-----------------|
| | <u>2016-2026</u> | <u>Earnings</u> |
| Validation Engineers | 44,800 | \$90,580 yr. |
| Electronics Engineering Technicians | 16,800 | \$63,670 yr. |
| Manufacturing Engineering Technologists | 16,800 | \$58,670 yr. |
| Robotics Technicians | 3,200 | \$51,220 yr. |
| Aerospace Engineering and Operations Technician | 1,700 | \$113,460 yr. |
| Environmental Engineers | 4,200 | \$86,800 yr. |
| Wind Turbine Technician | 5,600 | \$53,880 yr. |

Post-High School Connections

The following courses within this program of study may be eligible for college credit at several local colleges if students earn a “C” or better:

| <u>High School Course</u> | <u>Credits Possible</u> | <u>College</u> | <u>College Course</u> |
|---------------------------|-------------------------|----------------|-----------------------|
|---------------------------|-------------------------|----------------|-----------------------|

At this time there are no colleges allowing dual credit. Please check back at a later date.

Student Leadership Development



First Lego League Club/Robotics Club are available at the middle schools and First Robotics Club is available at the high schools. Students have the opportunity to build and compete with a robot of their own design, learn and use sophisticated software and hardware, work alongside professional engineers and compete for college scholarships,



Skills USA serves high school and college students enrolled in training programs in trade, technical and skilled service occupations. Programs include local, state and national competitions in which students demonstrate occupational skills, leadership, teamwork, citizenship, and promotes involvement in community service activities.

For information about this leadership opportunity, talk with a Career and Technical Education Instructor.

Scholarship Opportunities

For local, state, and national scholarship opportunities, please visit your counseling and/or career center, Career Cruising www.CareerCruising.com, WOIS www.wois.org, mapyourcareer.org, Fast Web www.FastWeb.com.

For more information about this Career Pathway, contact an instructor, a school counselor or a career specialist.

