Science, Technology, Engineering, and Mathematics Program of Study

AVCTC Career Cluster Program of Study

This Program of Study Template can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals.

****Ask your high school counselor to help you fill in the required courses you need to graduate.****

Grade	English *8 semesters*	Math *6 semesters*	Science *6 semesters*	Social Studies *6 semesters*	**Other Required Courses, Recommended Electives**	**Career & Technical Courses and/or *Degree Major Courses***	*SAMPLE Occupations Relating to this Pathway*
9	Comm Arts I	High School Math Course	High School Science Course	High School S.S. Course	Personal Finance Computer Science Math Courses Physical Sciences See high school counselor for additional options	See high school counselor for additional options	► ***Aerospace Engineer*** ► ***Agricultural Engineer*** ► ***Analytical Chemist*** ► ***Anthropologist*** ► ***Architectural Engineer*** ► ***Astrophysicist*** ► ***Biomedical Engineer*** ► ***CAD Technician*** ► ***Civil Engineer*** ► ***Computer Programmer*** ► ***Ecologist*** ► ***Geologist*** ► ***Geothermal Engineer*** ► ***Math Teacher*** ► ***Mathematician*** ► ***Metallurgist*** ► ***Statistician*** ► ***Survey Technician*** ► ***Zoologist***
10	Comm Arts II	High School Math Course	High School Science Course	High School S.S. Course	Personal Finance Computer Science Math Courses Physical Sciences See high school counselor for additional options	See high school counselor for additional options	
11	Comm Arts III *English Comp I *Public Speaking	High School Math Course, Pre-Algebra *College Algebra *College Trig *College Calculus	High School Science Course *MFH College General Biology – AVHS Hub	High School S.S. Course *College Am. History I & II *College Political Systems	*Personal Finance *Computer Science *Math Courses *Physical Sciences *See counselor for College Course Options	*See high school counselor for additional college course offerings	
12	Senior Comm Arts & Comm Arts elective *English Comp II *Intro to Literature	High School Math Course, Pre-College Algebra, *College Algebra, *College Trig *College Math Anaylsis, * College Calculus	High School Science Course *MFH College Intro to Chemistry – AVHS Hub	High School S.S. Course *College Am. History I & II *College Political Systems	*Personal Finance *Computer Science *Math Courses *Physical Sciences *See counselor for College Course Options	*See high school counselor for additional college course offerings	

*+Dual Credit or Dual Enrollment College courses can often be substituted for high school credit. Check with your Counselor.

Assessments/Certifications: College Placement Assessments, Compass, ACT, SAT

Clubs/Extracurricular Activities: Ask your Counselor what is available at your school.

CTSO(s): □ **TSA** □ **FBLA** □ **Skills USA**

Work-Based Learning: □ After School Employment □ Internship/Mentorship □ Job Shadowing □ Service Learning □ Supervised Business Experience

Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Sample Career Specialties / Occupations	Aerospace Engineer Aeronautical Engineer Agricultural Engineer Agricultural Technician Application Engineer Architectural Engineer Automotive Engineer Biomedical Engineer Biotechnology Engineer Chemical Engineer Civil Engineer Communications Engineer Computer Engineer Computer Hardware Engineer Computer Programmer Computer Science Technician Computer Software Engineer Construction Engineer Consultant Development Engineer Drafter Electrical Engineer Electrician Electronics Technician Energy Transmission Engineer Environmental Engineer Facilities Technician Fire Protection Engineer Geothermal Engineer Hazardous Waste Engineer Hazardous Waste Technician Human Factors Engineer Industrial Engineer Industrial Engineering Technician Licensing Engineer Manufacturing Engineer Manufacturing Technician Manufacturing Processes Engineer Marine Engineer	Materials Engineer Materials Lab & Supply Technician Mechanical Engineer Metallurgic Engineer Mining Engineer Naval Engineer Network Technician Nuclear Engineer Ocean Engineer Operations Research Engineer Packaging Engineer Packaging Technician Petroleum Engineer Pharmaceutical Engineer Plastics Engineer Power Systems Engineer Product Design Engineer Project Engineer Project manager Prototype Engineer Quality Engineer Quality Technician Radio/TV Broadcast Technician Radiology Engineer Researcher Safety Engineer Software Engineer Sound Technician Structural Engineer Survey Technician Systems Design Engineer Technical Sales Manager Technical Writer Telecommunications Engineer Textile Engineer Transportation Engineer Nuclear Engineer and Procurement Engineer	Analytical Chemist Anthropologist Applied Mathematician Archeologist Astronomer Astrophysicist Atmospheric Scientist Biologist Botanist CAD Operator Cartographer Chemist Communications Technologist Conservation Scientist Cosmologist Cryptographer Crystallographer Demographer Dye Chemist Ecologist Economist Electronmicroscopist Environmental Scientist Expert Systems Scientist Geneticist Geologist Geophysicist Geoscientist Herpetologist Hydrologist Ichthyologist Inorganic chemist Laboratory Technician Mammalogist Marine Scientist	Materials Analyst Materials Scientist Mathematician Mathematics Metallurgist Meteorologist Microbial Physiologist Mycologist Nanobiologist Nuclear Chemists Nuclear Technician Numerical Analyst Nutritionist Oceanographer Organic Chemist Ornithologist Paleontologist Physicist Polymer Scientist Programmer Protein Scientist Protozoologist Quality-Control Scientist Radio Chemist Research Chemist Research Technician Science Teacher Lab Technician Scientific Visualization/Graphics Expert Spectroscopist Statistician Technical writer Technologist Toxicologist Zoologist
Path-ways	**Engineering and Technology**		**Science and Math**	
Career K&S	**Cluster Knowledge and Skills** **•Academic Foundations •Communications •Problem Solving and Critical Thinking •Information Technology Applications • Systems • Safety, Health and Environment •Leadership and Teamwork •Ethics and Legal Responsibilities •Employability and Career Development •Technical Skills**			