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

Pathways		
Engineering and Technology		Science and Math

Cluster Knowledge and Skills
Career K&S
•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