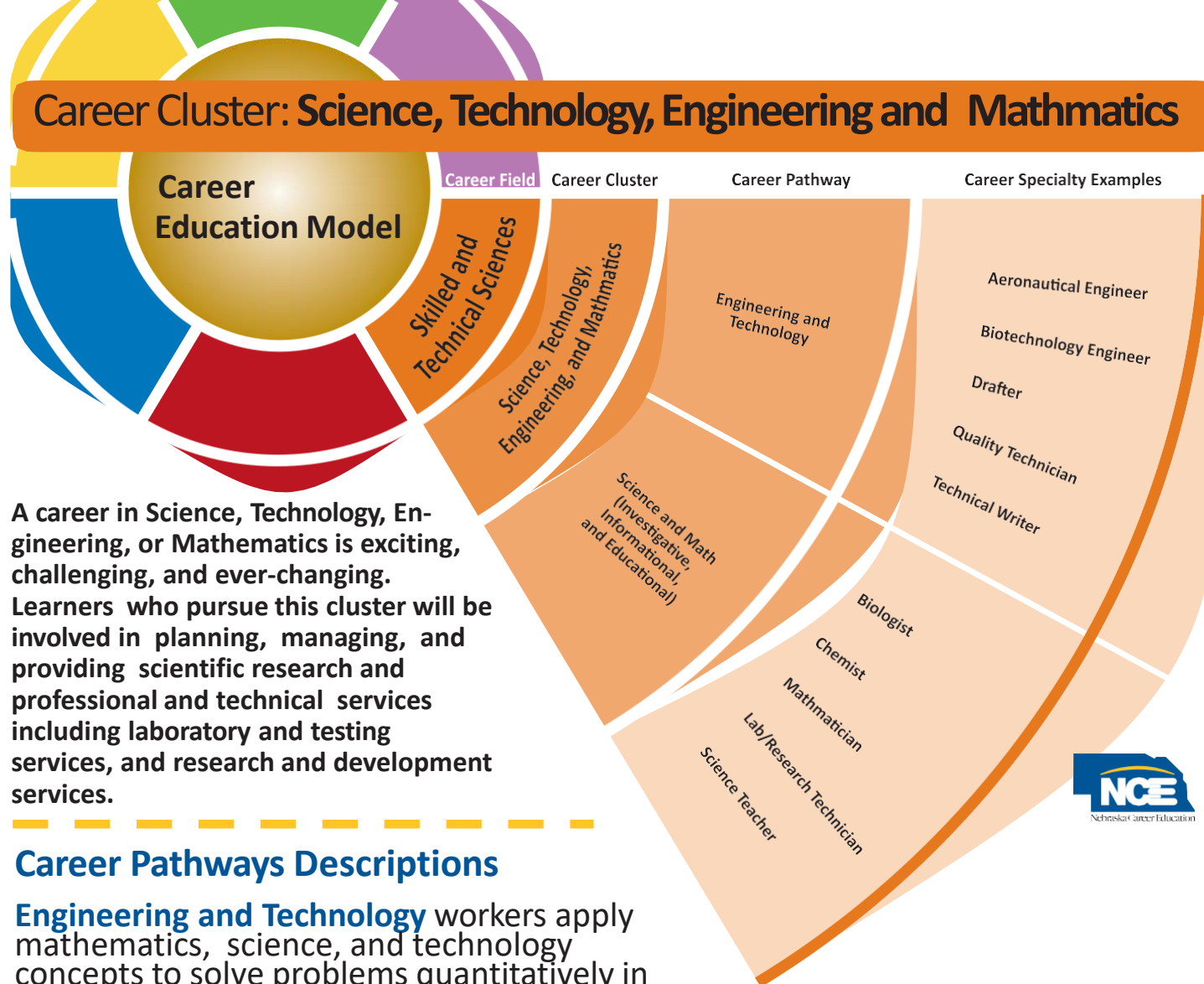


Career Cluster: Science, Technology, Engineering and Mathematics



A career in Science, Technology, Engineering, or Mathematics is exciting, challenging, and ever-changing. Learners who pursue this cluster will be involved in planning, managing, and providing scientific research and professional and technical services including laboratory and testing services, and research and development services.

Career Pathways Descriptions

Engineering and Technology workers apply mathematics, science, and technology concepts to solve problems quantitatively in engineering projects involving design, development, or production in various technologies. Engineers and Technologists are involved with advancing technology and continually improve and update product designs and optimize the manufacturing process. They are also involved in improving or building new roads, bridges, water, and pollution control systems, and other public facilities.

Science and Mathematics workers apply essential mathematics and science content and skills in a real world context. Science and mathematics occupations include those in physical, environmental, and human endeavors. Career possibilities range from teachers of science and mathematics to lab technicians to NASA astronauts.

Are science and math your favorite subjects?
Do you prepare projects for science fairs?
Do you enjoy reading science magazines?
Are you detail-oriented?
Do you want to know how things work?

<https://azcis.intocareers.org/VideoPlayer.aspx?VideoFileNum=00-000015>

1:35 minutes video on this career cluster(you must be logged into AZCIS to see video)



Occupations Examples

Levels of Education and Earnings*

* Data from AZCIS

	National Annual Median Wage	Arizona Annual Median Wage
Associate Degree		
Engineering Technicians	\$49,260 - \$66,180	\$49,120 - \$59,140
Manufacturing Engineering Technologists	\$61,260	\$56,970
Science Technicians	\$36,480 - \$80,260	\$33,500 - \$42,800
Bachelor's Degree		
Aerospace Engineers	\$107,830	\$86,830
Chemical Engineers	\$97,360	\$100,180
Chemists	\$71,260	\$73,250
Conservation Scientists	\$61,110	\$64,780
Electrical and Electronics Engineers	\$93,010 - \$98,270	\$91,260 - \$98,330
Energy Engineers	\$95,900	\$84,300
Fuel Cell Engineers	\$83,590	\$85,350
Industrial Engineers	\$83,470	\$92,120
Manufacturing Engineers	\$95,900	\$84,300
Materials Engineers	\$91,310	\$94,350
Mechanical Engineers	\$83,590	\$85,350
Mining Engineers	\$94,040	\$80,900
Nuclear Engineers	\$102,950	not available
Petroleum Engineers	\$129,990	\$106,770
Photonics Engineers	\$95,900	\$84,300
Robotics Engineers	\$95,900	\$84,300
Safety Engineers	\$84,600	\$74,140
Validation Engineers	\$95,900	\$84,300
Wind Energy Engineers	\$95,900	\$84,300
Work Experience Plus a Bachelor's or Higher Degree		
Architectural and Engineering Managers	\$132,800	\$131,500
Master's Degree		
Anthropologists	\$61,220	\$66,000
Biologists	\$67,550 - \$82,150	\$55,770 - \$69,580
Economists	\$99,180	\$70,920
Environmental Scientists	\$67,460	\$54,700
Geologists and Geophysicists	\$79,550 - \$89,700	\$69,650 - \$70,190
Mathematicians	\$111,110	not available
Political Scientists	\$99,730	\$93,210
Sociologists	\$73,760	\$64,710
Doctoral Degree		
Astronomers	\$104,100	not available
Physicists	\$111,580	\$89,060



Career Plan of Study

Learner Name _____

Date _____

Learner Signature _____

Advisor Signature _____

Parent/Guardian Signature (if required) _____

This plan of study should 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. All plans should meet high school graduation requirements as well as college entrance requirements.

	9 th Grade	10 th Grade	11 th Grade	12 th Grade
High School	English I	English II	English III	English IV
	Algebra I or Geometry	Geometry or Algebra II	Algebra II, Pre-Calculus, or Trigonometry	Trigonometry or Calculus
	Physical Science or Biology I	Biology I or Chemistry I	Chemistry or Physics	AP Biology, AP Chemistry, or AP Physics
	Geography/State History	World History	American History	Economics/Government
	Required Courses/Electives PE, Health, Art, Foreign Language, or Computer Technology	Required Courses/Electives PE, Health, Art, Foreign Language, or Computer Technology	Additional High School Electives Agriculture Power & Technology Principles of Ag Technology Drafting and Design *Introduction to Engineering *Computer Integrated Manufacturing *Principles of Engineering *Engineering Design & Development	Technology Center Electives Drafting and CAD CNC (Computer Numerical Control) Electronics Industrial Maintenance Precision Machining
Career Electives TechConnect Manufacturing Technology Education Agriscience I	Career Electives TechConnect Manufacturing Technology Education Agriscience II			
Post-Secondary	Career/Technical College		Community College	College/University
	<ul style="list-style-type: none"> ☞ Automated Manufacturing Technology ☞ Drafting and CAD ☞ Electronics ☞ Industrial Maintenance ☞ Manufacturing Engineering Technology ☞ Precision Machining 		<ul style="list-style-type: none"> ☞ Design Engineering Technology ☞ Pre-Engineering ☞ Industrial Drafting ☞ Biology ☞ Chemistry ☞ Physics ☞ Mathematics 	<ul style="list-style-type: none"> ☞ Mechanical Engineering ☞ Civil Engineering ☞ Mathematics ☞ Biology ☞ Biochemistry ☞ Chemistry ☞ Physics ☞ Management Science and Systems Analysis
Career Enhancement Options	Work-based Learning Options		Short-Term Training Options	
	Job-Shadowing: Internship/Mentorship: On-The-Job Training:		<ul style="list-style-type: none"> ☞ Safety Training ☞ Visual Basic 6 ☞ VB Net ☞ Wireless Technology ☞ Internet & Network Security ☞ AutoCAD 	

*These courses are part of the Project Lead The Way curriculum. More information is available at www.pltw.org

https://azcis.intocareers.org/portfolio/activities/cc_plans_study.html