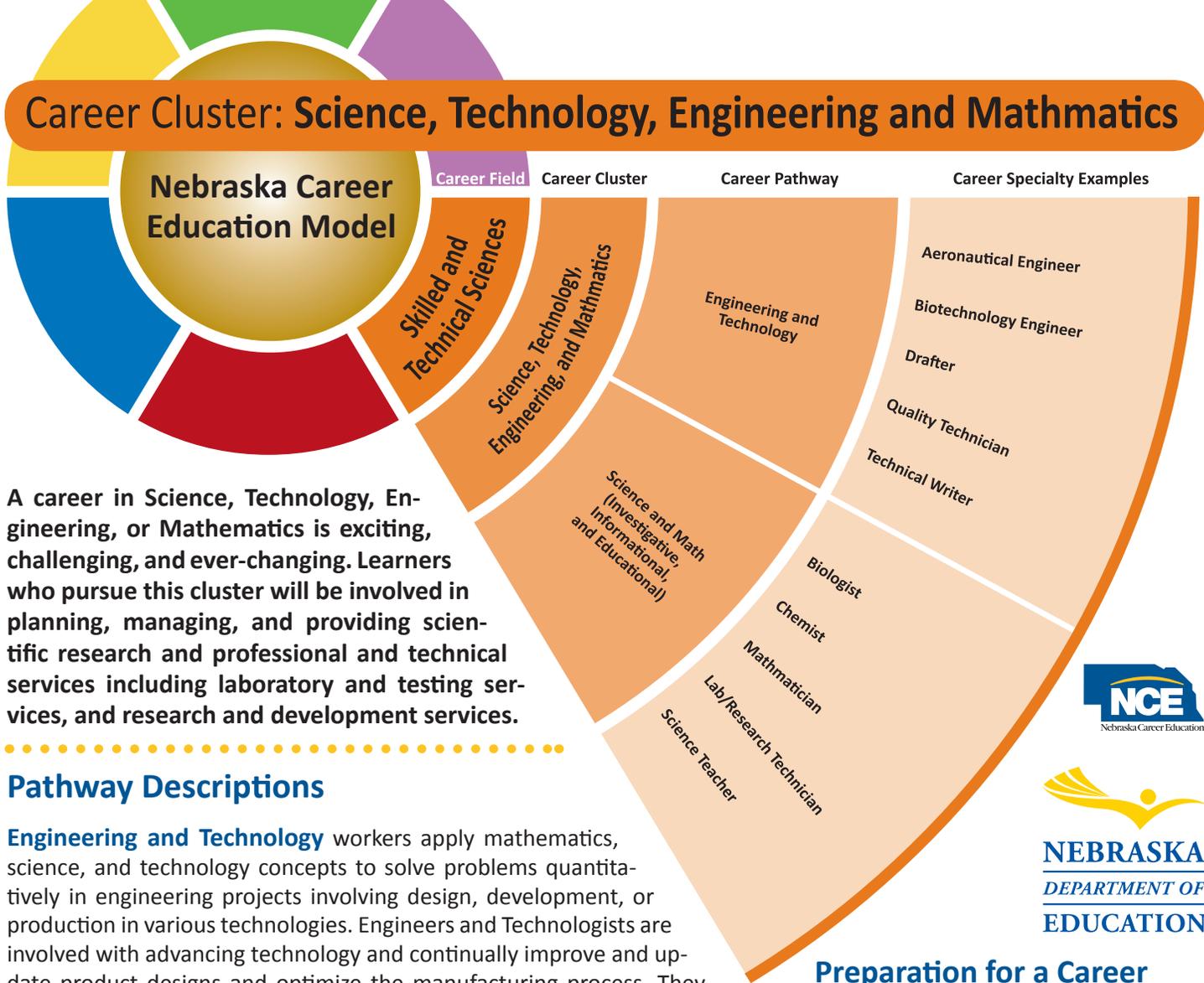


Career Cluster: Science, Technology, Engineering and Mathematics



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.

Pathway 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.

Extended Learning

- SkillsUSA
- OPPD/NPPD PowerDrive
- Robotics Competition
- Mathematic Student Competitions
- Discover Engineering Day
- Science Club
- Science Fairs
- Participate in the following Programs and Activities provided by the University of Nebraska:
 - Engineers Week
 - Academy of Excellence
 - MESA (Mathematics, Engineering, Science Achievement) Program
- Job shadow professionals
- Participate in internships
- Secure part-time employment
- Volunteer in this career area

Preparation for a Career in this Cluster Includes...

Nebraska Career Education Coursework

- Principals of Technology
- PLTW Principals of Engineering
- PLTW Intro to Engineering Design
- PLTW Computer Integrated Manufacturing
- PLTW Civil Engineering and Architecture
- PLTW Engineering Design and Development
- PLTW Aerospace Engineering
- PLTW Biotechnical Engineering
- Introduction to Engineering
- Engineering Concepts
- Engineering Applications
- Robotics
- Energy Exploration
- Green Energy
- Energy Generation and Distribution



Postsecondary Options: Science, Technology, Engineering and Mathematics

Students preparing for a career in the Science, Technology, Engineering, and Mathematics Career Cluster have a variety of postsecondary options. Education and training can be obtained through on-the-job training, technical colleges, two-year community colleges, four-year colleges/universities, and apprenticeship programs. They can enter programs leading to a certificate or a degree at the associate, baccalaureate, or advanced degree level. The table below shows examples of postsecondary Science, Technology, Engineering, and Mathematics programs of study organized by pathway.

	High School Diploma On-the-Job Training	Certificate/License	Associate's Degree	Bachelor's Degree	Master's/Doctoral Professional Degree
Science and Mathematics			Biology Chemistry Laboratory Science Technology Medical Laboratory Technology	Chemistry Economics Mathematics Molecular Biology Physics	Biochemistry Biological Sciences Chemistry Physics and Astronomy Statistics
Engineering and Technology		Industrial Technology	Architectural Design Technology Civil Engineering Technology Industrial Technology Surveying and Computer Aided Drafting (CAD)	Agricultural Engineering Biological Systems Engineering Chemical Engineering Construction Engineering Technology Industrial Engineering	Agricultural and Biological Systems Architectural Engineering Chemical Engineering Civil Engineering Mechanical Engineering



For additional information on the Science, Technology, Engineering, and Mathematics Career Cluster please contact:

Tony Glenn
Skilled and Technical Sciences
Career Field Specialist

Nebraska Department of Education
301 Centennial Mall South
Lincoln, NE 68509

Phone: 402-471-4819
Email: tony.glenn@nebraska.gov
Web: www.education.ne.gov/STS