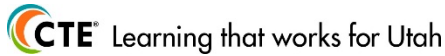


Utah Career and Technical Education Career Pathway

2019-2020 School Year



Career Cluster: Engineering & Technology

Career Pathway: Materials Science

CORE CODE	FOUNDATION COURSES (required)	CREDITS	
38.01.00.00.281	Materials Science	1.00	2.00 credits
38.01.00.00.211	Physics with Technology	1.00	
ELECTIVE COURSES			
40.11.00.00.140	Composites	.50	1.00 credit
38.03.00.00.010	Engineering Technology	.50	
40.10.00.00.050	Industrial Plastics	.50	
38.03.00.00.060	Manufacturing Technology	.50	
41.00.00.00.050	CTE Internship	.50	
41.00.00.00.030	Workplace Skills	.50	
3.00 credits for completion			

Foundation courses taken beyond the required credits can be used as elective credit.

Career and Technical Education provides all students access to high-quality, rigorous career-focused programs that result in attainment of credentials with labor market value.

CTSO Information

Career and Technical Student Organizations (CTSO) align with the national Career Clusters® and the Utah CTE Career Pathways.

TSA is the CTSO for students in the Materials Science Career Pathway. TSA fosters personal growth, leadership, and opportunities in science, technology, engineering, and mathematics (STEM).

Workforce Trends

The occupation of a material scientist is expected to experience faster than average employment growth. Business expansion will provide the majority of job openings in the coming decade. Material scientists with advanced degrees, particularly those with a Ph.D. and work experience are expected to have better job opportunities.

Materials Science is:

- > High skill
- > High wage

Sample Occupations Requiring:

- High School Diploma
- > Lab Tech
- Certificate
- > N/A
- Assoc. or Technical Degree
- > N/A
- Baccalaureate Degree
- > Career and Technical Education Teacher
- > Materials Engineer
- > Materials Scientist
- Graduate or Prof. Degree
- > Materials Engineer
- > Materials Scientist

HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING

There are a number of options for education and training beyond high school, depending on your career goals.

12th Grade

1-Year Certificate

2-Year Associate or Technical Degree

4-Year Bachelor's Degree

More Graduate or Prof. Degree

Certificates are awarded upon the successful completion of a brief course of study, usually one year or less. Upon completion of a course of study, a certificate does not require any further action to retain.
In high school a variety of certificates can be earned.

An academic degree is an award for the completion of a program or course of study over multiple years at postsecondary education institutions.
In 2016-2017, 74 percent of secondary students who concentrated in a CTE Career Pathway placed in postsecondary education, advanced training, military service or employment (October 1-December 31).

Utah Business and Industry Facts

Utah is home to Hexcel Corporations largest carbon fiber and matrix manufacturing plant. The plant is located in West Valley City and is a worldwide supplier of carbon fiber.

CTE Skill Certificates

Competency-based student assessments, measured by core standards and competencies, needed to be successful in the workforce.

In 2017-2018, 111,238 CTE skill certificates were awarded to high school students. Students' knowledge and performance is demonstrated as part of the Skill Certificate process.

UtahFutures: College and Career Planning

Visit UtahFutures.org for salary projections, labor market demand, and training options.

In 2016-2017, the graduation rate for students who concentrated in a CTE Career Pathway was 95 percent, compared to Utah's statewide graduation rate of 86 percent.