



Pathway: Power, Structural & Technical Systems

Plan of Study: Agriculture Mechanical Sciences

Career Goal (O*Net Code): Agricultural Engineers (17-2021), Welders and Cutters (51-4121.02, Welders-Fitters (51-4121.03)

Suggested High School Courses

High School	9 th	Core Academic Courses*:	Freshman English, Physical Science, Algebra I, Geography	Suggested Electives: Art, Desktop publishing,
		Career Path Courses:	Metal Fabrication I	
10 th	Core Academic Courses*:	English II, Geometry, Biology, US History, Foreign Language I	Suggested Electives: Robotics, Photography,	
	Career Path Courses:	Metal Fabrication II		
11 th	Core Academic Courses*:	American Literature, Algebra II/ or other, Chemistry	Suggested Electives: Robotics, Web Site Design	
	Career Path Courses:	Metal Fabrication III, Robotics		
12 th	Core Academic Courses*:	English IV, Trigonometry or other Math, Physics or other lab based science, Civics/Personal Finance, Web Based Portfolio	Suggested Electives: Robotics	
	Career Path Courses:	Metal Fabrication IV		

Secondary to Postsecondary Linkages & Certifications

Recognition for Advanced Learning	Postsecondary Credit Options Advanced Credit Pathway
	Industry Recognized Certificate(s) or License(s): Certified Welder

Postsecondary Programs Available in Colorado

Colorado Institutions

Entrance Exams/ Requirements

Postsecondary Education Opportunities	Certificate	Certified Welder	Morgan Community College Trinidad State Junior College Aims Community College Northwestern Colorado Community College	High School diploma or GED
	Associate Degree	Welding Technology, Welding Fabrication, Surveyor, Agriculture Engineer	Trinidad State Junior College, NJC, Colorado Mountain College, MCC Aims Community College Northwestern Colorado Community College	High School diploma or GED
	Bachelor Degree	Agricultural Engineer	Colorado State University, Colorado School of Mines, University of Wyoming Laramie	GPA: 3.2-3.8 ACT Composite: 22-26 SAT Combined (critical reading and math ONLY): 1020-1220
	Graduate Degree	Agricultural Engineer	Colorado School of Mines, University of Wyoming Laramie	GPA: 3.2-3.8 ACT Composite: 22-26 SAT Combined (critical reading and math ONLY): 1020-1220

Career & Technical Education is delivered through the Colorado Community College System

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COLORADO COMMUNITY COLLEGE SYSTEM

Cluster Overview: The **Agricultural, Food and Natural Resources** cluster focuses on careers in the planning, implementation, production, management, processing, and/or marketing of agricultural commodities and services.

Extended Learning Experiences		
Curricular Experiences: Skills USA FIRST Robotics	Extracurricular Experiences: FIRST Robotics	
Work-Based Learning Experiences: Career Preparation – Paid and Unpaid Job Shadowing Internships	Program Accreditation and/or Professional Association(s): Post-Secondary Agriculture Students (PAS) American Welding Society (AWS) Association of General Contractors (AGC) American Society of Agricultural and Biological Engineers	
Service Learning Experiences: 4-H Community Service School Requirements		
Career Options:		Salary Range:
Certificate	Welder, Welder-Fitter, Fabricator, Maintenance Welder, Mig Welder, Sub Arc Operator	\$\$
Associate Degree	Certified Welder	\$\$
Bachelor Degree	Site Manager, Agricultural Engineer, Contractor, Extension Engineering Specialist, Surveyor, Project Engineer	\$\$\$-\$\$\$\$
Graduate Degree	Project Developer, Risk Management Specialist	\$\$\$-\$\$\$\$

* \$ = \$15-25,000; \$\$ = \$25-55,000; \$\$\$ = \$55-90,000; \$\$\$\$ = Above \$90,000

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