



Pathway: Manufacturing Production

Plan of Study: Welder/Production Manager

Career Goal (O*Net Code):

Precision Metal Production (51-4041), Welder (51-4121), Machine Operator (51-4081), Inspector (51-9061).

Suggested High School Courses

High School	9 th	Core Academic Courses*:	English I, Algebra I, Earth or Environmental Science, State History/Civics	Suggested Electives:	Intro to Business Computer Applications Beginning Cabinet Making
		Career Path Courses:	Beginning Welding		
10 th	Core Academic Courses*:	English II, Geometry, Biology, US History, Foreign Language I	Suggested Electives:	Intro to Business Web Design Graphic Design	
	Career Path Courses:	Advanced Welding 1			
11 th	Core Academic Courses*:	English III, Algebra II/ or other, Chemistry	Suggested Electives:	Economics Intro to Business Advanced Cabinet Making	
	Career Path Courses:	GTAW Welding (TIG)			
12 th	Core Academic Courses*:	English IV, Trigonometry or other Math, Botany or other lab based science	Suggested Electives:	Computer Publications Building Trades	
	Career Path Courses:	Welding Certification			

Secondary to Postsecondary Linkages & Certifications

Recognition for Advanced Learning	Postsecondary Credit Options: IDual Credit, PSEO, Articulated Credit
	Industry Recognized Certificate(s) or License(s): Certification for Welders available through the American Welders Society (AWS) Voluntary certification is available from the American Production & Inventory Control Society (APICS). Certification for Welders available through the American Petroleum Institute (API)

Postsecondary Education Opportunities		Postsecondary Programs Available in Colorado	Colorado Institutions	Entrance Exams/ Requirements
		Certificate	Welding, Apprenticeship Sheet Metal Worker, Machining Technology, Industrial Mechanics, Industrial Technologies, Manufacturing Technology, Industrial Maintenance Technologies, CNC Manufacturing Management	AVS: Emily Griffith Opportunity School, T.H. Pickens Technical College, San Juan Basin Technical College Community Colleges: Aims CC, CC of Aurora, CC of Denver, Front Range CC, Pikes Peak CC, Pueblo CC, Red Rocks CC, Western Colorado CC, Colorado Northwestern CC
Associate Degree	Welding Technology, Machining Technology, Industrial Technologies, Industrial Maintenance Technologies, CNC Manufacturing Management	Community Colleges: Aims, CC of Aurora, CC of Denver, Front Range CC, Pikes Peak CC, Pueblo CC, Red Rocks CC	High School diploma/GED	
Bachelor Degree	Engineering Management, Industrial Engineering, Industrial Design, Mechanical Engineering, Electrical Engineering	For more information about colleges that have these programs go to www.CollegeinColorado.org	See each school's Admissions website.	
Graduate Degree	Engineering Management, MS; Industrial & Systems Engineering, MS; Mechanical Engineering, MS & PhD; Electrical Engineering, MS & PhD	For more information about colleges that have these programs go to www.CollegeinColorado.org	See each school's Admissions website.	

Cluster Overview: The **Manufacturing Career Cluster** prepares students in planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

Extended Learning Experiences

Curricular Experiences: Examples: SkillsUSA Technology Student Association		Extracurricular Experiences: Examples: Odyssey of the Mind Open Lab Thursday evening 6-10pm
Work-Based Learning Experiences: Career Preparation – Paid and Unpaid, Job Shadowing, Internships		Program Accreditation and/or Professional Association(s): American Welding Society American Iron & Steel Institute National Association of Manufacturers National Tooling & Machining Association Precision Metalforming Association Society of Plastics Engineers American Petroleum Institute American Society for Non-destructive Testing
Service Learning Experiences: Boy Scouts of America, Girl Scouts of the USA, Habitat for Humanity, Community Service Volunteer		
Career Options:		Salary Range:
Certificate	Assemblers Machine Operator Welder	\$15-\$25,000
Associate Degree	Precision Metal Production Welder Machine Operator Precision Layout Worker Solders and Braziers	\$25-\$90,000
Bachelor Degree	Calibration Technician Electromechanical Technician Inspector	\$55-\$90,000
Graduate Degree	Production Managers Industrial and Manufacturing Engineers	\$55-\$90,000+++

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

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