



Pathway: Production

Plan of Study: Process Science

Career Goal (O*Net Code – 51-9011.00 Chemical Equipment Operators and Tenders, 51-8091.00 Chemical Plant and System Operators, 51-8013.00 Power Plant Operators, 49-9012.00 Control and Valve Installers and Repairers, 51-8093.00 Petroleum Pump System Operators, Refinery Operators and Guagers, 51-8031.00 Water and Liquid Waste Treatment Plant and System Operators, 19-4031.00 Chemical Technicians

Suggested High School Courses

High School * Default includes CDHE Higher Education Admission Requirements	9 th	Core Academic Courses*:	English 9, American Government or Geography, Earth Science, Algebra 1 or Algebra Principles or Honors Algebra 1, Physical Education	Suggested Electives: Introduction to Computers
		Career Path Courses:	Tech Lab 1 and/or Engineering Design Introduction	
	10 th	Core Academic Courses*:	English 10, American History, Biology, Geometry or Eng Geometry Principles, or Honors Geometry	Suggested Electives: Computer Science
		Career Path Courses:	Manufacturing Systems (or Manufacturing Systems B), and /or Engineering Graph Tech/CAD, and/or Metals (or Metals A or B)	
	11 th	Core Academic Courses*:	English 11, Algebra 2 or Honors Algebra 2 or Algebra 2 for Process Science, World History, Science and Process Tech or Physics Prin/Sci	Suggested Electives: Computer Programming
		Career Path Courses:	Science and Process Tech (or Science and Process Tech B)	
	12 th	Core Academic Courses*:	English 12, or Eng 12 Commun Tech, Government/Economics, Math Analysis/Trigonometry	Suggested Electives: Chemistry
		Career Path Courses:	Process Tech II (or Adv Process Science or Adv Process Science A or B)	

Secondary to Postsecondary Linkages & Certifications

Recognition for Advanced Learning	Postsecondary Credit Options: Students who complete the twelfth grade class (Process Tech II) will receive RRCC college credit for PRO 100.
	Industry Recognized Certificate(s) or License(s):

Postsecondary Education Opportunities	Postsecondary Programs Available in Colorado		Colorado Institutions	Entrance Exams/ Requirements
	Certificate	Industrial Mechanics, Industrial Technologies, Manufacturing Technology, Off-shore oil platform technician	Community Colleges: Aims CC, CC of Aurora, CC of Denver, Front Range CC, Pikes Peak CC, Pueblo CC, Red Rocks CC, Western Colorado CC	High School diploma/GED
	Associate Degree	Industrial Technologies, Off-shore oil platform technician, Refinery Technician, Food & Beverage production technician, Oil shale development technician, Energy technician, alternative energy technician	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	Civil, Electrical, Environmental & Mechanical Engineering, Industrial Engineering, Mechanical 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	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 AWS – American Welding Society	Extracurricular Experiences: Examples: Odyssey of the Mind First Robotics	
Work-Based Learning Experiences: Career Preparation – Paid and Unpaid, Job Shadowing, Internships	Program Accreditation and/or Professional Association(s): American Petroleum Institute	
Service Learning Experiences: Examples: Boy Scouts of America, Girl Scouts of the USA, Habitat for Humanity, Community Service Volunteer		
Career Options:		Salary Range:
Certificate	Assemblers, Riggers, Laborers	\$\$
Associate Degree	Refinery Technician, Waste Water Technician, Energy Production Technician, Food & Beverage Technician, Chemical Plant Technician	\$\$ - \$\$\$
Bachelor Degree	Chemical Engineer, Mechanical Engineer, Production Engineer, Electrical Engineer	\$\$ - \$\$\$
Graduate Degree	Production Managers Industrial and Manufacturing Engineers	\$\$ - \$\$\$\$

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

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