



Career Cluster: Manufacturing

Career Pathway: Manufacturing (Production)

HIGH SCHOOL

EXPLORER COURSES: Choose one or more of the following courses to see if this would be a career you would enjoy.

Introduction to Industrial Technology (1 semester)	Hand and Power Tools (1 semester)
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CONCENTRATOR COURSES: Completed after an Explorer course. Helps you discover what area of the field you would like to specialize in.

Production Welding Processes 1 (1 year)	Mass Production 1
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COMPLETER COURSES: Must have completed an Explorer and a Concentrator course before taking this course.

Mass Production 2

PATHWAY SEQUENCE: Suggested order of courses.

9 th Grade	10 th Grade	11 th Grade	12 th Grade
Introduction to Industrial Technology	Production Welding Processes 1	Mass Production 1	Mass Production 2
Hand & Power Tools			

SUPPORTING COURSES: Courses outside of the pathway that would be very helpful in your career.

Production Blueprint	Aviation Fundamentals	Engineering Essentials	Computer Integrated Manufacturing (coming)
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STUDENT ORGANIZATION OPPORTUNITIES

SkillsUSA & TSA	Contact: Mr. Long (ATC)
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CERTIFICATION & COLLEGE CREDIT OPPORTUNITIES

Welding (WSUTech Block)	Machining (WSUTech Block)
Sheetmetal (WSUTech Block)	Composites (WSUTech Block)
Industrial Automation (WSUTech Block)	Robotics (WSUTech Block)

HIGH SCHOOL TO POSTSECONDARY EDUCATION & TRAINING

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

	1 - Year Certificate Avg. Salary: \$46,900	2 - Year Assoc. or Tech. Degree Avg. Salary: \$57,200	4 - Year Bachelor's Degree Avg. Salary: \$84,200
	<ul style="list-style-type: none"> ➤ Production Technician ➤ Tool & Die Maker ➤ Welder Local Institutions ➤ WSUTech: CNC Operator, Manual Machining, Industrial Automation & Machine Maintenance, Logistics & Supply Chain, Machining Technology, Nondestructive Testing, Robotics, Welding, Automotive Service Technology, Construction Science, HVAC, Alternative Fuel Maintenance, ➤ Butler: Engineering Technology 	<ul style="list-style-type: none"> ➤ Machine Tool Technician ➤ Welding Technician Local Institutions ➤ WSUTech: Industrial Automation & Machine Maintenance, Logistics & Supply Chain, Machining Technology, Nondestructive Testing, Robotics, Welding, Automotive Service Technology, Construction Science, HVAC, Alternative Fuel Maintenance ➤ Butler: Welding Technology, Automotive Technology, Construction Technology, Engineering Tech 	<ul style="list-style-type: none"> ➤ Manufacturing Engineer ➤ Industrial Engineer ➤ Machine Tool Engineer ➤ Welding Engineer Local Institutions ➤ WSU: Industrial, Systems, & Manufacturing Engineering, Mechanical Engineering, Engineering Technology



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Course Descriptions

Introduction to Industrial Technology (7470) – fall semester

Intro to welding. It is designed to instruct students in the basic skills necessary for industrial, manufacturing and automotive occupations.

Hand and Power Tools (7157F/L) – spring semester

Students will gain a working knowledge of the hand and power tools used in aviation and manufacturing through hands-on learning activities.

Production Welding Process (7517/7518) – 1 year

This comprehensive course is designed to provide students with knowledge and skills in basic welding theories and terminology, to perform Oxyfuel and Arc Welding activities in the F & H positions and to perform non-destructive-testing activities.

Mass Production 1 (7411/7412) – 1 year

Prerequisite: Production Welding Process. This is a comprehensive course designed to instruct students in the knowledge and skills required for fabricating products using a variety of materials.

Mass Production 2 (7421/7422) – 1 year

Prerequisite: Mass Production 1. Mass Production 2 is an application level course designed to instruct students in the knowledge and skills required for fabricating products using

Welding (WSUTech Block—fall start only)

The Welding program allows students to gain knowledge and skills in cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW) and gas tungsten arc welding (GTAW) and provides some exposure to oxy-acetylene cutting and welding. Average wage for a welder is \$18.94 in the Wichita area.

Machining (WSUTech Block)

This program includes classroom and laboratory instruction in safety, proper use of hand and power tools, blueprint reading and sketching, precision measuring and layout, setup, operation, clean-up and basic maintenance of lathes, milling machines and surface grinders with extra emphasis on CNC set up and operation. Machinists earn an average of \$20 hourly.

Sheetmetal (WSUTech Block)

Students in this program will learn the beginning in sheetmetal. Topics include quality control, aerospace manufacturing and aircraft systems and components. Students will apply their knowledge in a state of the art composite laboratory at the National Center for Aviation Training. A well-rounded curriculum allows students hands-on experience in all the stages of the aircrafts life from design to production and repair. The average wage in Wichita for this profession is \$21 per hour.

Composites (WSUTech Block)

Students in this program will learn the beginning in composites. Supported by a solid background in composite theory, students will apply their knowledge in a state of the art composite laboratory at the National Center for Aviation Training. A well-rounded curriculum allows students hands-on experience in all the stages of the aircrafts life from design to production and repair. The average wage in Wichita for this profession is \$21 per hour.

Industrial Automation (WSUTech Block)

Students will learn to analyze, troubleshoot, and align mechanical and automated industrial machinery. Program course work includes electronics, industrial wiring, motor controls, programmable logic controls, manufacturing automation concepts and robotics. Average wages for this career are \$22 per hour. Math placement test required to enroll.

Robotics (WSUTech Block)

The Robotics program is a cooperative effort between WSU Tech, the National Institute for Aviation Research (NIAR), and the Midwest Robotics Initiative Council. This program prepares students for entry into the highly technical field of industrial robotics. Students will take courses to master the skills necessary to design, assemble, install, program, troubleshoot and maintain robotic and automated equipment. Math placement test required to enroll.