

# MANUFACTURING

The Manufacturing Program of Study (POS) focuses on 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. There are obvious connections between manufacturing and other programs of study (please see those in parentheses below for possible opportunities). Pathways in this program include:

### Pathways:

- Health, Safety & Environmental Assurance  
(Agriculture and Natural Resource, Health Science, STEM) **Median Pay**
- Logistics & Inventory Control (STEM) **Median Pay**
- Maintenance, Installation & Repair (STEM) **Median Pay**
- Manufacturing Production Process Development  
(Business and Management, STEM) **Median Pay**
- Production (STEM) **Median Pay**



## Suggested Learning Experiences

Middle School Electives		
Courses	Grade 7	Grade 8
<b>Additional Electives</b>	<ul style="list-style-type: none"> <li>• Band</li> <li>• Choir</li> <li>• Orchestra</li> <li>• Advanced Art 7</li> <li>• Exploring AgriScience</li> <li>• Exploring French &amp; Spanish</li> <li>• Online Language Exploration</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced Art 8</li> <li>• Art 8</li> <li>• Online Language Exploration</li> <li>• Exploring French &amp; Spanish</li> <li>• French I</li> <li>• Spanish I</li> <li>• Band</li> <li>• Choir</li> <li>• Orchestra</li> <li>• Exploring AgriScience &amp; Gateway Innovation &amp; Robotics</li> </ul>

High School Electives				
Courses	Grade 9	Grade 10	Grade 11	Grade 12
<b>Additional Electives</b>	<ul style="list-style-type: none"> <li>• World Languages</li> <li>• AP Human Geography</li> </ul>	<ul style="list-style-type: none"> <li>• World Languages</li> <li>• Art</li> </ul>	<ul style="list-style-type: none"> <li>• World Languages</li> <li>• AP Economics</li> <li>• AP Psychology</li> </ul>	<ul style="list-style-type: none"> <li>• World Languages</li> </ul>
<b>Career &amp; Technical Education</b>	<ul style="list-style-type: none"> <li>• Electricity &amp; Electronics</li> <li>• Intro to Metal Tech</li> <li>• Intro to Programming</li> <li>• Intro to Engineering Design (PLTW)</li> </ul>	<ul style="list-style-type: none"> <li>• Comp Hardware Systems</li> <li>• TC Metal Tech I</li> <li>• Principles of Engineering (PLTW)</li> </ul>	<ul style="list-style-type: none"> <li>• TC Metal Technology II</li> <li>• TC Business Core</li> <li>• Digital Electronics (PLTW)</li> </ul>	<ul style="list-style-type: none"> <li>• TC Metal Tech Capstone</li> <li>• See Work-Based Learning Options below</li> <li>• Civil Engineering and Architecture (PLTW)</li> </ul>

## High School Electives Cont.

Courses	Grade 9	Grade 10	Grade 11	Grade 12
<b>English</b>	<ul style="list-style-type: none"> <li>• English I R/H/Essentials</li> </ul>	<ul style="list-style-type: none"> <li>• English II R/H/Essentials</li> <li>• AP Lang/US History</li> </ul>	<ul style="list-style-type: none"> <li>• English III R/H/Essentials</li> <li>• AS Oral and Interpersonal Communication</li> <li>• AP Lang &amp; Comp</li> </ul>	<ul style="list-style-type: none"> <li>• AS Written Communication</li> <li>• TC English 101/102</li> <li>• AP Lit &amp; Comp</li> <li>• Contemporary Media &amp; Lit</li> <li>• English IV Essentials</li> </ul>
<b>Math</b>	<ul style="list-style-type: none"> <li>• Algebra I</li> <li>• Essentials I</li> <li>• Geometry</li> </ul>	<ul style="list-style-type: none"> <li>• Essential II</li> <li>• Algebra II</li> </ul>	<ul style="list-style-type: none"> <li>• Adv. Math Applications</li> <li>• Pre-Calculus AP Statistics</li> </ul>	<ul style="list-style-type: none"> <li>• AS Technical Math</li> <li>• AP Calculus</li> </ul>
<b>Science</b>	<ul style="list-style-type: none"> <li>• Agriscience</li> <li>• Earth and Space Science</li> </ul>	<ul style="list-style-type: none"> <li>• Biology</li> </ul>	<ul style="list-style-type: none"> <li>• AP Environmental Science</li> <li>• Physics</li> </ul>	<ul style="list-style-type: none"> <li>• AP Physics</li> </ul>
<b>Social Studies</b>	<ul style="list-style-type: none"> <li>• US History &amp; American Gov Essentials/R/AP</li> </ul>	<ul style="list-style-type: none"> <li>• American Republic Essentials/R</li> <li>• AP US History</li> <li>• AP Lang/US History</li> </ul>	<ul style="list-style-type: none"> <li>• World Studies Essentials/R</li> <li>• AP World History</li> <li>• AP European History</li> </ul>	<ul style="list-style-type: none"> <li>• Elective</li> </ul>
<b>Other Required</b>	<ul style="list-style-type: none"> <li>• Computer Applications, Healthy Choices</li> <li>• Physical Education</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Education</li> <li>• Computer Applications</li> </ul>	<ul style="list-style-type: none"> <li>• Consumer &amp; Personal Finance</li> <li>• Physical Education</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Education</li> <li>• Consumer &amp; Personal Finance</li> </ul>
<b>Work-Based Learning Options</b>	Youth Apprenticeship			
<b>Other Activities</b>	FFA, National Honor Society, Pathway Partners, Skills USA, Youth Service Learning			

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## Career Types by Pathway

HIGH SCHOOL DIPLOMA ON-THE-JOB TRAINING	CERTIFICATE/LICENSE	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
<b>HEALTH, SAFETY AND ENVIRONMENTAL ASSURANCE</b>				
	<ul style="list-style-type: none"> <li>Occupational Safety and Health</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Engineering Technology</li> <li>Environmental Studies</li> <li>Occupational Safety and Health</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Engineering</li> <li>Environmental Studies</li> <li>Occupational Safety and Health</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Biology</li> <li>Environmental Studies</li> <li>Occupational Safety and Health</li> </ul>
<b>LOGISTICS AND INVENTORY CONTROL</b>				
<ul style="list-style-type: none"> <li>Heavy Equipment Operation</li> <li>Industrial Truck and Tractor Operation</li> <li>Material Handling</li> </ul>	<ul style="list-style-type: none"> <li>Truck Driving</li> </ul>	<ul style="list-style-type: none"> <li>Logistics and Materials Management</li> <li>Industrial Truck and Tractor Operation</li> <li>Transportation, Distribution and Logistics</li> </ul>	<ul style="list-style-type: none"> <li>Logistics and Materials Management</li> <li>Industrial Truck and Tractor Operation</li> <li>Transportation, Distribution and Logistics</li> </ul>	<ul style="list-style-type: none"> <li>Logistics and Materials Management</li> </ul>
<b>MAINTENANCE, INSTALLATION AND REPAIR</b>				
<ul style="list-style-type: none"> <li>Business Machine Technology</li> <li>Custodial Services</li> <li>Electronics Technology</li> </ul>	<ul style="list-style-type: none"> <li>Computer Installation and Repair</li> <li>Electronics Technology</li> <li>Industrial Mechanics</li> </ul>	<ul style="list-style-type: none"> <li>Diesel Technology</li> <li>Manufacturing Technology</li> <li>Mechanical Engineering Technology</li> <li>Industrial Technology</li> </ul>	<ul style="list-style-type: none"> <li>Biomedical Technology</li> <li>Manufacturing Technology</li> <li>Mechanical Engineering Technology</li> </ul>	
<b>MANUFACTURING PRODUCTION PROCESS DEVELOPMENT</b>				
<ul style="list-style-type: none"> <li>Construction Trades</li> </ul>	<ul style="list-style-type: none"> <li>Construction Trades</li> </ul>	<ul style="list-style-type: none"> <li>Architectural Engineering Technology</li> <li>Automotive Engineering Technology</li> <li>Drafting &amp; Design Technology</li> </ul>	<ul style="list-style-type: none"> <li>Architectural Engineering</li> <li>Civil Engineering</li> <li>Computer Engineering</li> </ul>	<ul style="list-style-type: none"> <li>Architecture</li> <li>Civil Engineering</li> <li>Construction Management and Inspection</li> <li>Transportation and Highway Engineering</li> </ul>
<b>PRODUCTION</b>				
<ul style="list-style-type: none"> <li>Iron Working</li> <li>Precision Production</li> <li>Upholstering and Leather Working</li> <li>Woodworking</li> </ul>	<ul style="list-style-type: none"> <li>Iron Working</li> <li>Precision Production</li> <li>Upholstering and Leather Working</li> <li>Welding</li> </ul>	<ul style="list-style-type: none"> <li>Building Construction</li> <li>Electrical and Electronics Engineering Technology</li> <li>Iron Working</li> </ul>	<ul style="list-style-type: none"> <li>Computational Mathematics</li> <li>Electrical and Electronics Engineering Technology</li> <li>Operations Management</li> </ul>	<ul style="list-style-type: none"> <li>Computational Mathematics</li> <li>Operations Management</li> </ul>
<b>QUALITY ASSURANCE</b>				
	<ul style="list-style-type: none"> <li>Quality Control Technology</li> </ul>	<ul style="list-style-type: none"> <li>Occupational Safety and Health</li> <li>Quality Control Technology</li> </ul>	<ul style="list-style-type: none"> <li>Occupational Safety and Health</li> <li>Quality Control Technology</li> </ul>	<ul style="list-style-type: none"> <li>Occupational Safety and Health</li> </ul>