**Manufacturing Program of Study**  
**Marquand-Zion High School Career Cluster Program of Study**

This Program of Study Template can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner’s educational and career goals. **Ask your high school counselor to help you fill in the required courses you need to graduate.**

<table>
<thead>
<tr>
<th>Grade</th>
<th>English 8 semesters</th>
<th>Math 6 semesters</th>
<th>Science 6 semesters</th>
<th>Social Studies 6 semesters</th>
<th>Other Required Courses, Recommended Electives</th>
<th>Career &amp; Technical Courses and/or Degree Major Courses</th>
<th>SAMPLE Occupations Relating to this Pathway</th>
</tr>
</thead>
</table>
| 9     | Comm Arts I         | High School Math | High School Science Course | High School S.S. Course | Personal Finance, Computer Science Physics, See your counselor for more high school offerings | See your high school counselor for more course offerings | ► Assembler  
► Boilermaker  
► Design Engineer  
► Environmental Engineer  
► Foundry Worker  
► Freight, Stock and Material Mover  
► Health and Safety Representative  
► Industrial Machinery Mechanic  
► Inspector  
► Labor Relations Manager  
► Logistician  
► Manufacturing Technician  
► Pattern and Model Maker  
► Production Manager  
► Quality Control Technician  
► Safety Engineer  
► SPC Coordinator  
► Tool and Diemaker  
► Traffic Manager  
► Welder |
| 10    | Comm Arts II        | High School Math | High School Science Course | High School S.S. Course | Personal Finance, Computer Science Physics, See your counselor for more high school offerings | See your counselor for more high school offerings | ► Assembler  
► Boilermaker  
► Design Engineer  
► Environmental Engineer  
► Foundry Worker  
► Freight, Stock and Material Mover  
► Health and Safety Representative  
► Industrial Machinery Mechanic  
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► Production Manager  
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► Safety Engineer  
► SPC Coordinator  
► Tool and Diemaker  
► Traffic Manager  
► Welder |
| 11    | Comm Arts III *English Comp I *Public Speaking | High School Math or Pre-Algebra *College Algebra *College Trig | High School Science Course | High School S.S. Course – Government & History – Am. College History I & II *Political Systems | Physics Courses *Personal Finance *Computer Science *See counselor for additional college course offering (Available for Dual Enrollment) | See your high school counselor for more high school offerings *AVCTC Programs – Collision Repair Technology, Automotive Technology, Welding Technology | ► Assembler  
► Boilermaker  
► Design Engineer  
► Environmental Engineer  
► Foundry Worker  
► Freight, Stock and Material Mover  
► Health and Safety Representative  
► Industrial Machinery Mechanic  
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► Production Manager  
► Quality Control Technician  
► Safety Engineer  
► SPC Coordinator  
► Tool and Diemaker  
► Traffic Manager  
► Welder |
| 12    | Senior Comm Arts & Comm Arts elective *English Comp II *Intro to Literature | High School Math or Pre-Algebra *College Algebra *College Trig | High School Science Course *MFH Intro to Chem *College Oceanography, Astronomy or Physics | High School S.S. Course – Government & History *Am. College History I & II *Political Systems | Physics Courses *Personal Finance *Computer Science *See counselor for additional college course offerings (Available for Dual Enrollment) | See your high school counselor for more high school offerings *AVCTC Programs – Collision Repair Technology, Automotive Technology, Welding Technology | ► Assembler  
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► Tool and Diemaker  
► Traffic Manager  
► Welder |

*Dual Credit courses can often be substituted for high school credit. Check with your Counselor.*  
*Dual Enrollment courses can be taken online or on a MAC campus.*

**Assessments/Certifications:** College Placement Assessments, Compass, ACT, SAT  
**Clubs/Extracurricular Activities:** Ask your Counselor what is available at your school.  
**CTSO(s):** □ FBLA □ FFA □ TSA □ Skills USA  
**Work-Based Learning:** □ After School Employment □ Internship/Mentorship □ Job Shadowing □ Service Learning □ Supervised Business Experience
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.

<table>
<thead>
<tr>
<th>Sample Career Specialties / Occupations</th>
<th>Pathways</th>
<th>Cluster Knowledge and Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Engineer, Electrical and Electronics Technician and Technologist, Electronics Engineer, Engineering and Related Technician and Technologist, Engineering Technician, Industrial Engineer, Labor Relations Manager, Manufacturing Engineer, Manufacturing Technician, Power Generating and Reactor Plant Operator, Precision Inspector, Tester, and Grader, Process Improvement Technician, Production Manager, Purchasing Agent Supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration Technician Inspector, Lab Technician, Process Control Technician, Quality Control Technician, Quality Engineer, SPC Coordinator</td>
<td>Logistics &amp; Inventory Control</td>
<td></td>
</tr>
<tr>
<td>Communications, Transportation and Utilities Manager, Dispatcher, Freight, Stock, and Material Mover, Industrial Truck and Tractor Operator, Logistical Engineer, Logistician, Material Associate, Material Handler, Material Mover, Process Improvement Technician, Quality Control Technician, Traffic Manager, Traffic, Shipping, and Receiving Clerk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Engineer, Environmental Specialist, Health and Safety Representative, Safety Coordinator, Safety Engineer, Safety Team Leader, Safety Technician</td>
<td>Health, Safety and Environmental Assurance</td>
<td></td>
</tr>
</tbody>
</table>