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| **HIGH SCHOOL:** | | | | | | ***BIG SKY PATHWAY PROPOSAL*** | | |
| **COLLEGE: Helena College** | | | | | | AV.jpg | | |
| **COLLEGE DEGREE PROGRAM: Welding Technology AAS** | | | | | |
| **Cluster Overview:**  Jobs in the manufacturing career cluster involve 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. | | | | **Pathway Options:**   * Production * Manufacturing & Production Process Development * Maintenance, Installation and Repair * Quality Assurance * Logistics and Inventory Control * Health, Safety and Environmental Assurance | | **Occupation Examples:**  Assembler, MIG Welder, TIG Welder, Machine Operator, Sheet Metal Worker, Mechanical Engineer, Industrial Engineer, Quality Control Technician, Safety Technician, Safety Engineer, Dispatcher, Production Manager, Purchasing Agent, Logistician  *For a complete listing, go to:*  [*http://online.onetcenter.org/find/career?c=13&g=Go*](http://online.onetcenter.org/find/career?c=13&g=Go) | | |
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| **SUGGESTED HIGH SCHOOL COURSES** | | | | | | | | |
| **9th** | Graduation Requirements  Workforce/2-Year College Prep | |  | | | | | **Recommended CTE Cluster Foundation Course(s):** |
| 4-Year MT College/Univ Prep (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | |  | | | | | **Recommended CTE Pathway Courses:** |
| **10th** | Graduation Requirements  Workforce/2-Year College Prep | |  | | | | |
| 4-Year MT College/Univ Prep  (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | |  | | | | | **Other Recommended CTE Courses:** |
| **11th** | Graduation Requirements  Workforce/2-Year College Prep | |  | | | | |
| 4-Year MT College/Univ Prep  (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | |  | | | | |
| **12th** | Graduation Requirements  Workforce/2-Year College Prep | |  | | | | | **Career & Technical Student Organization(s):** |
| 4-Year MT College/Univ Prep  (Rigorous Core) | |  | | | | |
| ***CTE and/or Electives*** | |  | | | | |
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| **ADVANCED LEARNING OPPORTUNITIES**  **High School to College/Career Linkages** | | | | | | | | |
| **CTE START courses:** | | | | | | | | |
| **Advanced Placement or IB courses:** | | | | | | | | |
| **Dual Enrollment courses:** M111T Technical Mathematics; WRIT121T Technical Writing | | | | | | | | |
| **Online courses:** | | | | | | | | |
| **Other:** | | | | | | | | |
| **POSTSECONDARY PROGRAM OF STUDY** | | | | | | | | |
|  | | **Math** | | **English** | **Major** | | **Other** | |
| **Semester 1** | | M111T Technical Math | |  | WLDG 105 Shop Safety, WLDG 112 Cutting Processes, WLDG 117 Blueprint Reading and Weld Symbols, WLDG 132 Estimating of Job Materials, WLDG 133 GMAW, FCAW, and GMAW-P, WLDG 180 Shielded Metal Arc Welding | |  | |
| **Semester 2** | |  | |  | WLDG 131 Intro to Layout and Pattern Making, WLDG 140 Intro Gas Tungsten ARC Welding (GTAW) - Integrated Lab , WLDG 151 Shop Practices , WLDG155 Design and Fabrication, WLDG 160 Rigging for Welders | |  | |
| **Semester 3** | |  | | WRIT 121T Introduction to Technical Writing | WLDG 217 Advanced Blueprint, WLDG 225 Structural Fabrication, WLDG 230 Field Welding and Processes, WLDG 243 Advanced Metal Fabrication I, WLDG 255 CNC Burn Table Programming and Operation | |  | |
| **Semester 4** | |  | |  | WLDG 213 Pipe Welding Lab I, WLDG 244 Advanced Metal Fabrication II, WLDG 245 Metal Fabrication Design and Construction, WLDG 265 MSHA Safety Training | | HR 110T Career Development and Human Relations | |

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| **MONTANA POSTSECONDARY OPPORTUNITIES**  ***Montana University System Degree and Program Inventory:*** [*http://www.homepage.montana.edu/~mus/drginv/*](http://www.homepage.montana.edu/~mus/drginv/)  [***Your Guide to Montana's Certificate and Associate Degree Programs***](http://mus.edu/twoyear/YourGuide.html)***:*** [*http://mus.edu/twoyear/YourGuide.html*](http://mus.edu/twoyear/YourGuide.html) | | | | | |
| **MSU Two Year Colleges and Programs:**  City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC) | | **Community Colleges:**  Dawson Community College (DCC)  Flathead Valley Community College (FVCC)  Miles Community College (MCC) | **Tribal Colleges:** Aaniiih Nakoda College (ANC);Blackfeet Community College(BCC); Chief Dull Knife College (CDKC);Fort Peck Community College (FPCC);Little Big Horn College (LBHC);Stone Child College (SCC);Salish Kootenai College (SKC) | | **Four Year Colleges/Universities:** MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT Tech—Butte; UM—Missoula; UMW—Dillon |
| **MILITARY** | * Requires diploma or GED * 17 with parental consent; 18 without | | | Air Force, Air Guard, Army, Coast Guard, Marines, and Navy  For more information: *http://todaysmilitary.com* | |
| **PROFESSIONAL CERTIFICATE** | * Requires diploma or GED * Less than 30 credits; little/no general ed credits * Complete in one year or less | | | Welding Technology ― FVCC | |
| **APPRENTICESHIP** | * Requires diploma or GED * Must be at least 18 * Minimum 2,000 hours of supervised experience | | | Electricians  Sheet Metal Workers  See the MT Dept of Labor website for more information:  [*http://wsd.dli.mt.gov/apprenticeship/default.asp*](http://wsd.dli.mt.gov/apprenticeship/default.asp) | |
| **CERTIFICATE OF**  **APPLIED SCIENCE** | * Requires diploma or GED * 30-45 credits; limited general education credits * Complete in one year or less | | | Industrial Machine Technology/CNC ― FVCC  Metals (Fabrication) Technology ― CC  Machine Tool Technology ― HC, UMW  Sustainable Energy Technician ― CC, HC Tech, GFC, MSUN  Water Quality Technology ― HC, MSUN  Welding Technology ― HC, MC, GFC, CC, GC, MSUN, DCC, FVCC, FPCC | |
| **ASSOCIATE’S OF APPLIED SCIENCE DEGREE** | * Requires diploma or GED * 60-72 credits; includes 15-25 general ed credits * Complete in two years *(if prepared academically in math and English)* | | | Biofuel Energy ― MCC  Computer-Aided Manufacturing -- HC  Electronics Technology ― MC  Energy Technology ― MC  Metals (Fabrication)Technology ― HC, HC Tech, CC  Machine Tool Technology ― HC  Power Plant Technology ― CC  Process Plant Technology ― CC  Sustainable Energy Technician ― CC, HC Tech, GFC, MSUN  Water Quality Technology ― FPCC  Welding Technology ― HC, MC, CC, FVCC | |
| **BACCALAUREATE DEGREE** | * Requires 4-year college prep for admission * 128 credits (approximately) * Complete in four years | | | Bioengineering ― MSU  Electrical Engineering ― MT Tech, MSU  Civil Engineering ― MT Tech, MSU  Industrial Engineering ― MSU  Mechanical Engineering ―MT Tech MSU  Mining Engineering ― MT Tech  Occupational Safety & Health ― MT Tech  Welding Engineering ― MT Tech  Metallurgical & Materials Engineering ― MT Tech  Petroleum Engineering ― MT Tech | |

*Degree and Program Inventory above may not be all inclusive*