Request for Approval with Assurances
Montana Big Sky Pathways (Programs of Study)

The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) calls for states to offer career and technical programs of study, known as Big Sky Pathways in Montana, as an option to students and their parents when planning for and completing future coursework. These programs, at a minimum, must:

- Incorporate and align secondary and postsecondary education elements,
- Include academic and CTE content in a coordinated, non-duplicative progression of courses,
- Offer the opportunity, where appropriate, for secondary students to acquire postsecondary credits, and
- Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.

Assurances:
By my signature on this form, I assure that to the best of my ability the proposed Big Sky Pathway submitted for approval by this high school/college satisfies the 10 stated requirements. For approval, all 10 requirements must be checked. NOTE: only the OPI Specialist has the authority to approve.

<table>
<thead>
<tr>
<th>Name of Big Sky Pathway (cluster level):</th>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of High School:</td>
<td>Plentywood</td>
</tr>
<tr>
<td>Names of Secondary Lead Teacher and Counselor:</td>
<td>Casey Oskaa Lisa Tryan</td>
</tr>
<tr>
<td>The Lead Secondary Teacher will be contacted if OPI has questions about this request</td>
<td></td>
</tr>
<tr>
<td>Lead Teacher's email address:</td>
<td></td>
</tr>
<tr>
<td>Lead Teacher's phone number:</td>
<td></td>
</tr>
<tr>
<td>Name of College:</td>
<td>Dawson Community College</td>
</tr>
<tr>
<td>Name of College Program:</td>
<td>Welding</td>
</tr>
<tr>
<td>Name of College Lead Faculty Member:</td>
<td>Brent Nelson</td>
</tr>
</tbody>
</table>

REQUIREMENTS FOR APPROVAL

1. Includes all state and local graduation requirements
2. Identifies the appropriate secondary CTE, academic, and recommended elective courses offered by this high school which will prepare the student for college-level courses without remediation
3. Outlines a non-duplicative sequence of courses from grades 9-12 and from secondary to postsecondary education
4. Prepares students for entry into a postsecondary program or apprenticeship
5. Leads to an industry-recognized postsecondary credential, degree or employment
6. Includes appropriate state standards and/or industry skills standards. Identify standards used: AWS
7. Aligns with an AAS program offered by a Montana college (college of technology, community college, tribal college, MSU-Northern)
8. Links with a web-based guidance delivery system such as MCIS
   If using something other than MCIS, please indicate:
9. When applicable, dual enrollment opportunities have been identified.
10. When applicable, Advanced Placement, IB courses and CTE START (statewide articulations) have been identified.

<table>
<thead>
<tr>
<th>High School Principal's Signature:</th>
<th>Michael</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: 1-14-11</td>
<td></td>
</tr>
<tr>
<td>H.S. Advisory Committee Member's Signature:</td>
<td></td>
</tr>
<tr>
<td>Date: 1-14-11</td>
<td></td>
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<tr>
<td>College Chief Academic Officer's Signature:</td>
<td></td>
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<tr>
<td>Date: 1-14-11</td>
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<tr>
<td>College Lead Faculty Member's Signature:</td>
<td></td>
</tr>
<tr>
<td>Date: 1-14-11</td>
<td></td>
</tr>
</tbody>
</table>

Please submit this Request for Approval form and a copy of the Big Sky Pathway proposal to:
OPI, Career and Technical Education, P.O. Box 130011, Helena, Montana 59604-0009

OPI Specialist Approval: Date of Approval: 9-1-2011
OCHE Approval: Date of Approval: 10-12-11

Both the college and the high school will receive a signed copy when the BSP is approved
### HIGH SCHOOL: Plentywood

### COLLEGE: Dawson Community College

### COLLEGE DEGREE PROGRAM: Welding

#### 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/processing 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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Recommended CTE Cluster</th>
<th>Other Recommended CTE Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>Graduation Requirements Workforce/2-Year College Prep</td>
<td>English 9, Algebra 1 or Pre-Algebra, Earth Science (lab), PE 9, World History, 3 1/2 years Fine Arts/Vocational/Practical Arts</td>
<td>AgTech I, AgTech II, AgTech III, AgTech IV</td>
</tr>
<tr>
<td></td>
<td>4-Year M* College/Univ Prep (Rigorous Core)</td>
<td>English 9, Algebra 1 or Pre-Algebra, Earth Science (lab), PE 9, World History, 3 1/2 years Fine Arts/Vocational/Practical Arts</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CTE and/or Electives</strong></td>
<td>Speech/Comp, Biology (lab), Algebra 1 or Geometry, PE 10/Health, 3 1/2 years Fine Arts/Vocational/Practical Arts</td>
<td></td>
</tr>
<tr>
<td>10th</td>
<td>Graduation Requirements Workforce/2-Year College Prep</td>
<td></td>
<td>Advanced Welding, Acct I, Acct II</td>
</tr>
<tr>
<td></td>
<td>4-Year M* College/Univ Prep (Rigorous Core)</td>
<td>Speech/Comp, Biology (lab), Algebra 1 or Geometry, PE 10/Health, 3 1/2 years Fine Arts/Vocational/Practical Arts</td>
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<tr>
<td></td>
<td><strong>CTE and/or Electives</strong></td>
<td></td>
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<tr>
<td>11th</td>
<td>Graduation Requirements Workforce/2-Year College Prep</td>
<td>American Lit, U.S. History, Math or Science (2/3 yr requirement), Electives to complete 1 1/2 requirement</td>
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<tr>
<td></td>
<td>4-Year M* College/Univ Prep (Rigorous Core)</td>
<td>American Lit, U.S. History, Math or Science (2/3 yr requirement), Electives to complete 1 1/2 requirement, 3 1/2 years Fine Arts/Vocational/Practical Arts</td>
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<tr>
<td></td>
<td><strong>CTE and/or Electives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12th</td>
<td>Graduation Requirements Workforce/2-Year College Prep</td>
<td>Senior English, Government, Complete elective, fine art/vocational/practical arts requirement</td>
<td>FFA, BPA</td>
</tr>
<tr>
<td></td>
<td>4-Year M* College/Univ Prep (Rigorous Core)</td>
<td>Senior English, Government, Complete elective, fine art/vocational/practical arts requirement</td>
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</tr>
<tr>
<td></td>
<td><strong>CTE and/or Electives</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ADVANCED LEARNING OPPORTUNITIES

#### High School to College/Career Linkages

- CTE START courses:
- Advanced Placement or IB courses:
- Dual Enrollment courses:
- Online courses:
- Other:

### POSTSECONDARY PROGRAM OF STUDY

<table>
<thead>
<tr>
<th>Semester</th>
<th>Math</th>
<th>English</th>
<th>Major</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>13—Semester 1</td>
<td></td>
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<tr>
<td>13—Semester 2</td>
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</tbody>
</table>
### MONTANA POSTSECONDARY OPPORTUNITIES

**Montana University System Degree and Program Inventory:** [http://www.homepage.montana.edu/~mus/gradinv/YourGuide.html](http://www.homepage.montana.edu/~mus/gradinv/YourGuide.html)

<table>
<thead>
<tr>
<th>Colleges of Technology:</th>
<th>Community Colleges:</th>
<th>Tribal Colleges:</th>
<th>Four Year Colleges/Universities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLCOT—Billings; GFCOT—Great Falls; HCDT—Helena; TECHCOT—Butte; UMCOT—Missoula; GCP—Bozeman</td>
<td>DCC—Glendive; FVCC—Kalispell; MCC—Miss City</td>
<td>BFCC—Browning; CDKC—Lame Deer; FBCC—Harlem; FPCC—Poplar; LBHC—Crow Agency; SCC—Box Elder; SKC—Pablo</td>
<td>MSU—Bozeman; MSUB—Billings; MSUN—Havre; TECH—Butte; UM—Missoula; UMW—Dillon</td>
</tr>
</tbody>
</table>

#### 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](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://wds.dli.mt.gov/apprenticeship/default.aspx](http://wds.dli.mt.gov/apprenticeship/default.aspx)

#### 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 — BLCOT
- Machine Tool Technology — HCDT, UMW
- Sustainable Energy Technician — BLCOT, TECHCOT, GFCOT, MSUN
- Water Quality Technology — HCDT, MSUN
- Welding Technology — HCDT, UMCOT, GFCOT, BLCOT, GCP, 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
- Electronics Technology — UMCOT
- Energy Technology — UMCOT
- Metals (Fabrication) Technology — HCDT, TECHCOT, BLCOT
- Machine Tool Technology — HCDT
- Power Plant Technology — BLCOT
- Process Plant Technology — BLCOT
- Sustainable Energy Technician — BLCOT, TECHCOT, GFCOT, MSUN
- Water Quality Technology — FPCC
- Welding Technology — HCDT, UMCOT, BLCOT, FVCC

#### BACCALAUREATE DEGREE
- Requires 4-year college prep for admission
- 128 credits (approximately)
- Complete in four years
- Bioengineering — MSU
- Electrical Engineering — TECH, MSU
- Civil Engineering — TECH, MSU
- Industrial Engineering — MSU
- Mechanical Engineering — TECH, MSU
- Mining Engineering — TECH
- Occupational Safety & Health — TECH
- Welding Engineering — TECH
- Metallurgical & Materials Engineering — TECH
- Petroleum Engineering — TECH

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