Montana Big Sky Pathways (Programs of Study)
Agreement Valid for 2012-2013 Academic Year

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.

By my signature on this form, I verify each of the eight (8) requirements listed below are demonstrated within the Big Sky Pathways Proposal and Gap Analysis. For approval, all eight (8) requirements must be checked.

<table>
<thead>
<tr>
<th>Name of Big Sky Pathway (Cluster Level):</th>
<th>AGRICULTURE, FOOD &amp; NATURAL RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of High School:</td>
<td>Sidney High School</td>
</tr>
<tr>
<td>Names of High School Lead Teacher &amp; Counselor:</td>
<td>Gary Schaff  Thom Barnhart</td>
</tr>
<tr>
<td>The Lead High School Teacher will be contacted if OPI has questions about this request:</td>
<td><a href="mailto:qschaff@sidney.k12.mt.us">qschaff@sidney.k12.mt.us</a></td>
</tr>
<tr>
<td>Lead Teacher’s email address:</td>
<td><a href="mailto:qschaff@sidney.k12.mt.us">qschaff@sidney.k12.mt.us</a></td>
</tr>
<tr>
<td>Lead Teacher’s phone number:</td>
<td>(406) 433-2330</td>
</tr>
<tr>
<td>Name of College:</td>
<td>Miles Community College</td>
</tr>
<tr>
<td>Name of College Program:</td>
<td>Agriculture CAS</td>
</tr>
<tr>
<td>Name of College Lead Faculty Member:</td>
<td>Kim Gibbs &amp; Kristin Buck</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REQUIREMENTS FOR APPROVAL (IP = In Progress)</th>
<th>YES</th>
<th>IP</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Includes all state and local graduation requirements preparing students for entry into a postsecondary program or apprenticeship.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Outlines a non-duplicative sequence of courses from grades 9-12 and from secondary to postsecondary education.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Leads to an industry-recognized postsecondary credential, degree or employment.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Completed &quot;Gap Analysis&quot; with a program offered by a Montana postsecondary institution.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. When applicable, dual enrollment, Advanced Placement, International Baccalaureate courses and CTE START (Statewide Articulations) opportunities have been identified.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Pathway curriculum includes appropriate state/national standards and/or industry skills standards. Identify standards used: Montana Agriculture Career Clusters</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Links with a web-based guidance delivery system such as Montana Career Information System (MCIS). If using something other than MCIS, please indicate:</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

High School Principal’s Signature: [Signature] Date: 4-26-13
High School CTE Teacher’s Signature: [Signature] Date: 4-26-13
High School Counselor’s Signature: [Signature] Date: 4-26-13

Please submit this Approval Form with the Big Sky Pathway Proposal to the Big Sky Pathway Coordinator at the College identified above.

College Chief Academic Officer’s Signature: [Signature] Date: 6/16/13
College Lead Faculty Member’s Signature: [Signature] Date: 6/16/13

Please submit this Approval Form with the Big Sky Pathway Proposal to OPI, Career and Technical Education, P. O. Box 202501, Helena, MT 59620-2501.

OPI Approval: [Signature] Date of Approval: 8/13/13
OCHE Approval: [Signature] Date of Approval: 8/13/13

October 2011
## Cluster Overview:
Careers in the Agriculture, Food and Natural Resources cluster involve the planning, implementation, production, management, processing, and/or marketing of agricultural commodities and services.

## Pathway Options:
- Food Products and Processing Systems
- Plant Systems
- Animal Systems
- Power, Structural & Technical Systems
- Natural Resources Systems
- Environmental Service Systems
- Agribusiness Systems

## Occupation Examples:
Agricultural Chemical Dealer, Aquaculturalist, Environmental Compliance-Assurance Manager, Farm Manager, Health and Safety Sanitarian, Meat Cutter-Meat Grader, Park Manager, Produce Buyer, Recycling Technician, Wildlife Manager, Botanist, Agricultural Educator, Ecologist, Environmental Engineer, Fish and Game Officer, Bank Loan Officer, Plant Pathologist, Veterinarian

For a complete listing, go to: [http://online.onetcenter.org/find/career?c=1&q=Go](http://online.onetcenter.org/find/career?c=1&q=Go)

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### SUGGESTED HIGH SCHOOL COURSES

<table>
<thead>
<tr>
<th>Grade</th>
<th>Graduation Requirements</th>
<th>Pathway Options</th>
<th>CTE and/or Electives</th>
<th>Recommended CTE Cluster Foundation Course(s)</th>
<th>Recommended CTE Pathway Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>Workforce/2-Year College Prep</td>
<td>Comm. Arts10, Biology Science, Fitness 10, Geometry, World History, Fine Arts. Electives</td>
<td>Intro to Ag, Ag Portable Engine Systems, Ag Welding Fabrications Horticulture Systems Intro to Animal Science Appl. Welding Fabrication in Agriculture Agriculture Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12th</td>
<td>Workforce/2-Year College Prep</td>
<td>Comm. Arts 12, Government, Electives</td>
<td></td>
<td>Career &amp; Technical Student Organization(s): FFA</td>
<td></td>
</tr>
</tbody>
</table>

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**Agriculture, Food & Natural Resources, page 1 of 3**

October 2012
### ADVANCED LEARNING OPPORTUNITIES

**High School to College/Career Linkages**

**CTE START courses:**

- Advanced Placement or IB courses: Advanced English, Advanced US History, Advanced Government

- Dual Enrollment courses: Computer Applications I, & Computer Applications II, = CAPP120 Intro to COMPUTERS
- Accounting I, & Accounting II, = ACTG 101 ACCOUNTING PROCEDURES I

**Online courses:**
- M108 Business Math

**Other:** Supervised Agricultural Experience (SAE) and participation in appropriate FFA activities support and reinforce classroom and laboratory learning and should be a requirement for all students.

### POSTSECONDARY PROGRAM OF STUDY

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Math</th>
<th>English</th>
<th>Major</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>13—Semester 1</td>
<td>13—Semester 2</td>
<td>M108 Business Math</td>
<td>WRIT 108 Elementary Technical Writing</td>
<td>AGSC 101 Intro to Ag &amp; Environ Resources, ANSC 100 Animal Science, NRSM 101 Natural Resource Conservation, NRSM 102 Natural Resource Conservation Lab</td>
<td>CAPP 120 Intro to Computers</td>
</tr>
<tr>
<td>14—Semester 1</td>
<td>14—Semester 2</td>
<td>COMX 115 Interpersonal Communications</td>
<td>AGSC 103 Applied Agricultural Science, AGSC 104 Applied Agricultural Lab, AGSC 110 Agricultural Issues Forum</td>
<td>ACTG 101 Accounting Procedures I</td>
<td></td>
</tr>
</tbody>
</table>

### MONTANA POSTSECONDARY OPPORTUNITIES

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

**MSU Two Year Colleges and Programs:**
- City College MSUB—Billings (CC); Great Falls College MSUB—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 (FFCC)
- Miles Community College (MCC)

**Tribal Colleges:**
- Aanilch Nakoda College (ANC)
- Blackfeet Community College (BCC)
- Chieft Dull Knife College (CDKC)
- Fort Peck Community College (FFCC)
- 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](http://todaysmilitary.com)

**PROFESSIONAL CERTIFICATE**
- Requires diploma or GED
- Less than 30 credits; little/no general ed credits
- Complete in one year or less
- Agri-Mechanics Machinery/Technology — MSUN

**APPRENTICESHIP**
- Requires diploma or GED
- Must be at least 18
- Minimum 2,000 hours of supervised experience
- Farm Equipment Mechanics
- See the MT Dept of Labor website for more information: [http://wrd.dli.mt.gov/apprenticeship/default.asp](http://wrd.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 |  
| 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) |  
|                                           | Agri-Business Technology — MCC  
|                                           | Agri-Mechanics Machinery/Technology — DCC  
|                                           | Livestock Technology — DCC  
|                                           | Natural Resource Management — FVCC  
| BACCALAUREATE DEGREE | Requires 4-year college prep for admission  
|                        | 126 credits (approximately)  
|                        | Complete in four years |  
|                                           | Agriculture Business — MSU  
|                                           | Agriculture Education — MSU  
|                                           | Animal Science — MSU  
|                                           | Biotechnology — MSU  
|                                           | Environmental Horticulture — MSU  
|                                           | Environmental Sciences — MSU  
|                                           | Land Rehabilitation — MSU  
|                                           | Land Resource Sciences — MSU  
|                                           | Natural Resources & Rangeland Technology — MLU  
|                                           | Plant Science — MSU  
|                                           | Sustainable Food & Bio-energy Systems — MSU  
|                                           | Earth Sciences — MSU  
|                                           | Biological Sciences — MSU  
|                                           | Biology — UM  
|                                           | Environmental Studies — UM  
|                                           | Forestry — UM  
|                                           | Resource Conservation — UM  
|                                           | Wildland Restoration — UM  
|                                           | Wildlife Biology — UM  
|                                           | Environmental Engineering — TECH  
|                                           | Mining Engineering — TECH  
|                                           | Geological Engineering — TECH  
|                                           | Environmental Science — UM, SKC  
|                                           | Earth Science — UM  
|                                           | Environmental Science & Forestry — SKC  

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