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 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.

<table>
<thead>
<tr>
<th>Name of Big Sky Pathway (cluster level):</th>
<th>AGRICULTURAL FOOD AND NATURAL RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of High School:</td>
<td>COLSTRIp HIGH SCHOOL</td>
</tr>
<tr>
<td>Names of Secondary Lead Teacher and Counselor:</td>
<td>JEWEL DAVENPORT DOUG GASKILL</td>
</tr>
<tr>
<td>Lead Teacher's email address:</td>
<td><a href="mailto:jewel.davenport@colstrip.k12.mt.us">jewel.davenport@colstrip.k12.mt.us</a></td>
</tr>
<tr>
<td>Lead Teacher's phone number:</td>
<td>406-748-4599 ext 4525</td>
</tr>
<tr>
<td>Name of College:</td>
<td>MSU Northern</td>
</tr>
<tr>
<td>Name of College Program:</td>
<td>A07 Associate of Applied Science in Agricultural Technology</td>
</tr>
<tr>
<td>Name of College Lead Faculty Member:</td>
<td></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:
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.

High School Principal's Signature: [Signature] Date: 1/27/11
H.S. Advisory Committee Member's Signature: [Signature] Date: 1/27/11
College Chief Academic Officer's Signature: [Signature] Date: 2/8/11
College Lead Faculty Member's Signature: [Signature] Date: 1/27/11

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 202501, Helena, Montana 59620-2501

OPI Specialist Approval: [Signature] Date of Approval: 1/27/11
OCHE Approval: [Signature] Date of Approval: 1/27/11

Both the college and the high school will receive a signed copy when the BSP is approved

January 2011
## HIGH SCHOOL: Colstrip High School

### COLLEGE: MSU Northern

#### COLLEGE DEGREE PROGRAM: ASSOCIATE OF APPLIED SCIENCE IN AGRICULTURAL TECHNOLOGY

<table>
<thead>
<tr>
<th>Cluster Overview:</th>
<th>Pathway Options:</th>
</tr>
</thead>
</table>
| Careers in the Agriculture, Food and Natural Resources cluster involve the planning, implementation, production, management, processing, and/or marketing of agricultural commodities and services. | - Animal Systems  
- Plant Systems  
- Agribusiness Systems |

### Occupation Examples:
Farm/Ranch Worker or Manager, Animal Husbandry, Retail Sales, Purchasing Agent, Animal Breeder, Animal Science, Forester, Nursery Worker, Pesticide Handler, Plant Science, Farm Ranch Contractor

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

#### SUGGESTED HIGH SCHOOL COURSES

<table>
<thead>
<tr>
<th>Grade</th>
<th>Graduation Requirements</th>
<th>Workforce/2-Year College Prep</th>
<th>CTE and/or Electives</th>
<th>Cluster Foundation Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>Graduation Requirements</td>
<td>Workforce/2-Year College Prep</td>
<td>CTE and/or Electives</td>
<td>Cluster Foundation Courses</td>
</tr>
<tr>
<td></td>
<td>Workforce/2-Year College Prep</td>
<td>English 9, PE 9, Intro to Math, Biology 1</td>
<td></td>
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<tr>
<td></td>
<td>4-Year MT College/Univ Prep (Rigorous Core)</td>
<td>Eng 9, Math 1, Biology 1, Health, Spanish 1, PE 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTE and/or Electives</td>
<td>English 10 Health, World History, Math 1</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>4-Year MT College/Univ Prep (Rigorous Core)</td>
<td>English 10, World History, Math 3, Math 5, Chemistry 1, Advanced Biology 1, Spanish 2</td>
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<tr>
<td></td>
<td>CTE and/or Electives</td>
<td>Cluster or Pathway Courses</td>
<td></td>
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<tr>
<td></td>
<td>Graduation Requirements</td>
<td>Workforce/2-Year College Prep</td>
<td>CTE and/or Electives</td>
<td>Pathway Courses</td>
</tr>
<tr>
<td>11th</td>
<td>Graduation Requirements</td>
<td>Workforce/2-Year College Prep</td>
<td>CTE and/or Electives</td>
<td>Pathway Courses</td>
</tr>
<tr>
<td></td>
<td>Workforce/2-Year College Prep</td>
<td>American Literature, Government, Math 3, Math 5, Chemistry 1 &amp;/or Basic Chemistry/Physics</td>
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<tr>
<td></td>
<td>4-Year MT College/Univ Prep (Rigorous Core)</td>
<td>American Literature, Government, Math 6, Statistics, Advanced Chemistry 1 &amp; 2, Spanish 3</td>
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<tr>
<td></td>
<td>CTE and/or Electives</td>
<td>Pathway Courses</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Graduation Requirements</td>
<td>Workforce/2-Year College Prep</td>
<td>CTE and/or Electives</td>
<td>Pathway Courses</td>
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<tr>
<td>12th</td>
<td>Graduation Requirements</td>
<td>Workforce/2-Year College Prep</td>
<td>CTE and/or Electives</td>
<td>Pathway Courses</td>
</tr>
<tr>
<td></td>
<td>Workforce/2-Year College Prep</td>
<td>World Literature, US History, Math 5, Physics</td>
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<td></td>
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<tr>
<td></td>
<td>4-Year MT College/Univ Prep (Rigorous Core)</td>
<td>World Literature, US History, Math 7+, Physics, AP-Physics, AP-English, Earth Science, Advanced Biology 2</td>
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#### ADVANCED LEARNING OPPORTUNITIES

**High School to College/Career Linkages**

- **CTE START courses:**
- **Advanced Placement or IB courses:** AP Physics, AP English
- **Dual Enrollment courses:** AG 101 Animal Science, AG 102 Plant Science
- **Online courses:** AP English Language and Composition, AP English Literature and Composition, AP Calculus AB, AP Calculus BC, AP Biology, AP Physics B, AP Environmental Science, AP US History, AP US Government & Politics,

**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>13—Semester 1</th>
<th>Math</th>
<th>English</th>
<th>Major</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M111, M145, or M121</td>
<td>WRIT 108 Elementary Tech Writing</td>
<td>AG 101 Animal Science AG 105 Ag Mar and Econ AG 150 Intro to Ag Comp IT 100 Intro to Technology</td>
<td>Advisor Approved Electives 12</td>
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</table>

<table>
<thead>
<tr>
<th>13—Semester 2</th>
<th></th>
<th>SPCH 141 Fundamentals Of Speech or SPCH 142 Interpersonal Communication</th>
<th>AG 102 Plant Science AG 125 Farm Management AG 204 Soils (CAT III) AG 244 Livestock Feeding &amp; Nutrition</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>13—Semester 3</th>
<th></th>
<th></th>
<th>AG 218 Crop Production AG 230 AG Pest MGT AG 245 Livestock Production AG 254 Forage and Range Management</th>
</tr>
</thead>
</table>

### MONTANA POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: [http://www.homepage.montana.edu/~mus/drgrinw/](http://www.homepage.montana.edu/~mus/drgrinw/)
Your Guide to Montana's Certificate and Associate Degree Programs: [http://mus.edu/twyear/YourGuide.html](http://mus.edu/twyear/YourGuide.html)

**Colleges of Technology:**
- BLCT—Billings; GFCT—Great Falls; HCOT—Helena; TECHCOT—Butte; UMCOT—Missoula; GCP—Bozeman

**Community Colleges:**
- DCC—Glendive; FVCC—Kalispell; MCC—Miles City

**Tribal Colleges:**
- BFCC—Browning; CDKC—Lame Deer; FBCC—Hardin; FPCC—Poplar; LBHC—Crow Agency; SCC—Box Elder; SKC—Pablo

**Four Year Colleges/Universities:**
- MSU—Bozeman; MSUB—Billings; MSUN— Havre; 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://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
- Agri-Business Technology — MCC
- Agri-Mechanics Machinery/Technology — DCC
- Livestock Technology — DCC
- Natural Resource Management — FVCC

#### 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 — DCC
- Agri-Business Technology—Equitation — DCC
- Agricultural Science/Technology — MSUN
- Agri-Mechanics Machinery/Technology — MSUN, DCC
- Equine Studies — UMW, MCC
- Natural Horsemanship — UMW
- Natural Resource Management — FVCC, BFCC

#### BACCALAUREATE DEGREE
- Requires 4-year college prep for admission
- 128 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 — MSU  
| 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 — UMW, SKC  
| Earth Science — UMW  
| Environmental Science & Forestry — SKC |

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