Montana University System

PROGRAM REVIEW

Institution: **Montana Tech**

Program Years: **2012-17**

List of the programs reviewed:

- B.S. in Biological Sciences
- B.S. in General Science
- Pre-Licensure B.S. in Nursing and the B.S. Completion Program in Nursing
- Associate of Science
- Drafting Technology (AAS, CAS) – Highlands College
- Machining Technology (CAS) – Highlands College
- Pre-Apprenticeship Lineman Program (CAS) – Highlands College
- AAS Radiologic Technology – Highlands College
- Welding Technology (CAS) – Highlands College

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

See attached detailed individual Program Review summaries.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

See attached detailed individual Program Review summaries.

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech**

Program Years: **2012-2017**

List of the programs reviewed:

B.S. in Biological Sciences

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

The B.S. in Biological Sciences should be continued

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The B.S. in Biological Sciences is a robust program with a reasonable number of majors and graduates. The program successfully prepares majors for work in the field in, e.g. Wildlife Biology, or for careers in professional medical fields or graduate school.

Year	Biological Sciences Majors	Biological Sciences Graduates
2017-18	59	
2016-17	55	8
2015-16	51	9
2014-15	62	8
2013-14	66	6
2012-13	57	13

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech**

Program Years: **2012-2017**

List of the programs reviewed:

B.S. in General Science

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

The B.S. in General Science should be dis-continued

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The B.S. in General Science has very few majors at any one-time and has had no graduates for the last five years. The program was designed to prepare students for secondary education careers in biology, mathematics, or broad-field science, but in recent years seems to have served students who were unsure of their career plans.

Year	General Science Majors	General Science Graduates
2017-18	3	0
2016-17	3	0
2015-16	1	0
2014-15	0	0
2013-14	4	0
2012-13	1	1

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech**

Program Years: **2012-2017**

List of the programs reviewed:

Pre-Licensure B.S. in Nursing and the B.S. Completion Program in Nursing

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Both the Pre-Licensure B.S. in Nursing and the B.S. Completion Program in Nursing should be continued.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The B.S. in Nursing includes both Montana Tech's B.S. completion program and its recently established B.S. pre-licensure (120 credit) program. Both of these programs are continuing. The B.S. Pre-Licensure in Nursing program accounts for the jump in enrollment in 2016-17 and 2017-18. Further enrollment increases are expected as the B.S. Pre-Licensure in Nursing program reaches capacity. Both of these programs are robust and are either accredited (B.S. Completion Program in Nursing) or scheduled to undergo accreditation this spring (Pre-Licensure B.S. in Nursing). Nursing students in the Pre-Licensure B.S. in Nursing take three semesters of general education and pre-nursing courses as Pre-Nursing Students prior to being accepted into the Pre-Licensure B.S. in Nursing program.

Year	Pre-Licensure B.S. in Nursing and the B.S. Completion Programs in Nursing Enrollment	Pre-Licensure B.S. in Nursing and the B.S. Completion Programs in Nursing Graduates	Pre-Nursing Students in their first 3 semesters prior to acceptance into the Pre-Licensure B.S. in Nursing Program
2017-18	109	NA	84
2016-17	72	21	95
2015-16	33	18	81
2014-15	32	16	NA
2013-14	41	25	NA
2012-13	24	7	NA

Montana University System

PROGRAM REVIEW

Institution: **Highlands College of Montana Tech**

Program Years: **2011-2017**

List of the programs reviewed:

Associate of Science

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the Associate of Science Program

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Associate of Science program was developed with four educational goals:

1. Facilitate transfer from Highlands College to related degree programs at Montana Tech or other Baccalaureate granting institutions across Montana.

2. Preparing students for entry into STEM (Science, Technology, Engineering and Mathematics), Healthcare, other non-STEM related fields or appropriate Applied Science degrees through completion of all developmental, and prerequisite coursework leading to early transfer.

3. Provide 60 credits of rigorous 100 & 200 level coursework combining general education and a discipline specific pathways to allow seamless transition from the Associate of Science to Baccalaureate degree STEM (Science, Technology, Engineering and Mathematics), Healthcare and other Non-STEM related programs while maximizing credits awarded.

4. Minimize time to completion through the utilization of blocked scheduling of developmental coursework required before entry into four-year level math, writing and science courses.

	AY 11-12	AY 12-13	AY 13-14	AY 14-15	AY 15-16	AY 16-17
Enrolled	131	194	251	265	254	211
Graduated AS		1	5	12	11	15
Enrolled South Campus(non-AS)	12	13	28	29	27	
Enrolled MT Tech	24	34	19	41	61	
Transferred	9	19	6	29	0	

The Associate of Science Program provides a low-cost entry point into the MUS for the students of Southwest Montana and through a strong advising program, they gain the knowledge and skills they need to successfully progress in their academics at Montana Tech, and other MUS institutions. The Associate of Science program meets each of the four goals previously described and for this reason we recommend retaining the program.

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech – Highlands College**

Program Years: **2016 - 2017**

List of the programs reviewed:

Drafting Technology (AAS, CAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree programs.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Drafting Technology AAS and CAS degree offerings prepares students for entry level jobs in the industry. We endeavor to introduce current industry standard drafting/design software and combine it with standard drafting/design and 3D printing methods, materials, and practices for the AECM (architectural, engineering, construction, and manufacturing) industry.

Fall Enrollment					
	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	
AAS (CAS) Drafting Technology	11	13	7	7	
Degrees and Certificates Awarded					
	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	
AAS (CAS) Drafting Technology	4 (CAS 1)	n/a	5 (CAS 1)	2	

Per the Montana Department of Labor & Industry document "Informational Wage Rates by Occupation" July 2016, the mean salary for the combined SOC's (standard occupational code) 17-3011, 17-3012, 17-3013, 17-3019 is $52,300. Total drafters employed in the state is 560. Note, employment statistics per SOC is not 100% available since employers are not required to report such data, per the Montana Department of Labor & Industry. But, the May 2016 DOL report does project a 10.1% increase in Architectural and Civil Drafters; a 37.2% increase in Electrical Drafters; and a 26. 3% increase in Mechanical Drafters.

In conclusion, the Drafting Technology program at Highlands College serves a continuing need for prepared individuals to work in a unique field in Montana, the nation, and the world.

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech – Highlands College**

Program Years: **2016 - 2017**

List of the programs reviewed:

Machining Technology (CAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The CAS in Machining Technology was proposed by Highlands College as part of its implementation of Montana's Strengthening Workforce Alignment in Montana's Manufacturing and Energy Industries (SWAMMEI) Grant. The grant was only for 3 years (2014 – 2016). The Program has seen a decline in graduates (CAS) during the last two years. (See the table below.)

Fall Enrollment					
	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	
CAS Machining Technology	n/a	11	11	12	
Degrees and Certificates Awarded					
	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	
CAS Machining Technology	n/a	14	4	5	

The reason for the program's numbers fluctuations was the reinstatement of the Metals Fabrication Program. It is notable that many of our students are choosing to take both CAS programs (Welding and Machining) to get their AAS in Metals Fabrication. Both the CAS in Machining and the CAS in Welding *in combination* are required for the AAS in Metals Fabrication. They are not applying for graduation for the CAS in Machining Technology but instead wait to earn the credential at the same time as the AAS in Metals Fabrication, the students do this to save the $80 graduation fee and only pay this fee once for all three credentials. If a student

chooses to stop out after the first year of the two-year program and have met the general education requirements for the CAS the student is eligible for the Machining Technology CAS.

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be 18,168 annual openings for employment between 2016 and 2018. Openings due to growth of 6,108 openings and due to replacement of 12,060 workers leaving the workforce due to retirement, etc. This indicates that the future of metals fabrication, both welding and machining, will continue to grow in the future. The May 2016 DOL report also project a 14.6% increase in Computer Controlled Machine Tool Operators and an increase of 6.7% in Machinists, Lathe and Mill Operators.

In conclusion, the Machining Technology Program at Highlands College will serve a continuing need in Butte and the surrounding region and thus we conclude to retain the program.

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech – Highlands College**

Program Years: **2016 - 2017**

List of the programs reviewed:

Pre-Apprenticeship Lineman Program (CAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Pre-Apprenticeship Lineman CAS is an intensive one semester training program for the energy transmission and distribution industry. This program is the only one of its kind in Montana and the only program offered at a state school in the region.

Fall Enrollment					
	2013	2014	2015	2016	
CAS Pre-App. Lineman	19	20	23	22	
Degrees and Certificates Awarded					
	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	
CAS Pre-App. Lineman	28	24	39	31	

This program enjoys strong enrollments and often has waitlist for slots in the program. This program is limited to 25 students per semester. The Department of Labor and Statistics in its May employment outlook reports a 33% increase in employment for Electrical Substation, Powerhouse and Relay workers and a 7.5% increase in Electrical Power-Line Installers and Repairers.

In conclusion, the Pre-Apprentice Lineman Program at Highlands College will serve a continuing need in Montana and the surrounding region and thus conclude to retain the program.

Montana University System

PROGRAM REVIEW

Institution: Highlands College of Montana Tech

Program Years: 2011-2017

List of the programs reviewed:

AAS Radiologic Technology

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the program, expand clinical site affiliations to offer more student spots in program

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Radiologic Technology program has maintained strong enrollment and interest since the inception of the program. Employment opportunities for radiologic technologists are growing, with an expected 9% growth through 2024 according to the U.S. Department of Labor. The healthcare industry is constantly expanding along with advancements in all areas of radiologic technology, leaving graduates of this program with many career advancement opportunities in advanced imaging modalities and in a variety of healthcare settings. The U.S. Department of Labor projects that advanced modalities like MRI technology have a job outlook with 10% growth expected, diagnostic medical sonographers are expected to see a 26% growth, and all health technologist's job opportunities are expected to grow 16% through 2024.

Fall Enrollment:	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017
AAS Pre-Radiologic Technology	42	46	43	42	41	26	46

Degrees Awarded:	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
AAS Radiologic Technology	15	6	12	12	10	8	10

This is a competitive program that is limited in the number of spots available due to the limited number of clinical sites available in our area. There has been interest from Bozeman Health to provide clinical spots again. This program is currently transitioning to new faculty, and is pursuing Bozeman and other possible options to potentially provide more clinical space, allowing for more students to be admitted to the program. Upon completion of the AAS in Radiologic Technology, graduates must sit for the national registry of the American Registry of Radiologic Technologists (ARRT). Up to this point graduates of the program have an average pass rate of 90% on the registry. Passing this registry is required for technologists to work anywhere nationally in radiology, and allows them to obtain a state license in the state they will be working in. Program review and input from adjunct radiology faculty and clinical student coordinators at clinical sites, as well as coursework evaluations provide guidance for the program to continue.

Montana University System

PROGRAM REVIEW

Institution: **Montana Tech – Highlands College**

Program Years: **2016 - 2017**

List of the programs reviewed:

Welding Technology (CAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The CAS in Welding Technology was proposed by Highlands College as part of its implementation of Montana's Strengthening Workforce Alignment in Montana's Manufacturing and Energy Industries (SWAMMEI) Grant. The grant was only for 3 years (2014 – 2016). The Program has seen an increase in graduates (CAS) during the last years. (See the table below.)

Fall Enrollment					
	2013	2014	2015	2016	
CAS Welding Technology	n/a	7	7	16	
Degrees and Certificates Awarded					
	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	
CAS Welding Technology	n/a	7	7	13	

The reason for the program's numbers fluctuations was the reinstatement of the Metals Fabrication Program. It is notable that many of our students are choosing to take both CAS programs (Welding and Machining) to get their AAS in Metals Fabrication. Both the CAS in Machining and the CAS in Welding are required for the AAS in Metals Fabrication. They are not applying for the CAS in Welding Technology to save the $80 cost for graduation application but only for the Metals Fabrication AAS, as they earn three credentials at that time.

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be 18,168 annual openings for employment between 2016 and 2018. Openings due to growth of 6,108 new employees and due to replacement of 12,060 workers leaving the workforce due to retirement, etc. This indicates that the future of metals fabrication, both welding and machining, will continue to grow in the future. The May 2016 DOL report also project a 9.5% increase in Welders, Cutters, Soderers and Braziers.

In conclusion, the Welding Technology Program at Highlands College will serve a continuing need in Butte and the surrounding region and thus conclude to retain the program.