Montana University System

PROGRAM REVIEW

Institution: **Montana Technological University**

Program Years: **2021-2028**

List of the programs reviewed:

- Business (BAS)
- Business and Information Tech (BS)
- Environmental Engineering (MS)
- Environmental Engineering (BS)
- Metallurgical/Materials Eng. (BS)
- Metallurgical/Mineral Process Eng. (MS)
- Materials Science & Engineering (MS)
- Carpentry (CAS)
- Office Assistant (CAS)
- Construction Technology/Carpentry (AAS)
- Materials Science (PhD)

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

- Office Assistant (CAS) was placed in moratorium Spring 2021
- Continue all other 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.

See rational in individual program review documents attached.

Montana University System

PROGRAM REVIEW

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Business (BAS)

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

The program should continue.

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 BAS in Business offers students the opportunity to continue their education past a two-year Associate of Applied Science (AAS) degree by joining the Department of Business and Information Technology. Continuing their studies for two additional years beyond the AAS earns students a BAS degree with a trades emphasis. This pathway for continuing education is available for students with AAS degrees from the Highlands campus including Automotive, Construction, and Precision Machinery programs. Current efforts are focusing on expanding this pathway to include the Welding program and the Metals Fabrication program. We hope to have these complete and ready to go for the fall of 2022. We expect that offering avenues to stackable credentials for multiple disciplines will result in an increasing enrollment trajectory.

	520101 BAS Business	
	Fall Enrollment	Number of Degrees
2014-2015	38	18
2015-2016	36	6
2016-2017	45	14
2017-2018	38	8
2018-2019	37	22
2019-2020	29	15
2020-2021	22	9

Montana University System

PROGRAM REVIEW

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Business and Information Tech (BS)

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

The BS in Business and Information Technology program 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 BIT degree at MT Tech has seen steady or increasing enrollment, and significantly in 2020-2021, and has one of the highest enrollments in the College of Letters, Sciences and Professional Studies. BIT offers several focus options including accounting, management of information and management of natural resources. These options prepare students to excel in the global business environment, affording them the expertise needed for a society increasingly dependent on information technology in multiple areas. The program includes training in SAP® Enterprise Software, the largest enterprise system software manufacturer in the world. MT Tech is a full member of the SAP® University Alliance and the only full member in the state of MT. The program is accredited by the International Assembly for Collegiate Business Education (IACBE).

	521299 BS Business & Information Tech	
	Fall Enrollment	Number of Degrees
2014-2015	128	19
2015-2016	131	18
2016-2017	130	32
2017-2018	123	30
2018-2019	111	25
2019-2020	117	14
2020-2021	138	19

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Environmental Engineering (MS)

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

The MS Environmental Engineering program should continue

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 MSEnvE is an excellent program at Tech and fits Tech's special focus designation. It is a research-based degree and has excellent enrollment with many of the students conducting externally funded research. The program is strongly connected to industry. Job placement is excellent with most graduates taking employment with high-quality engineering companies. The department historically has held five faculty; today it has 4 faculty with an expectation to hire a fifth in the near future. The department has recently experienced some faculty turn over. Current faculty includes 2 veteran faculty and 2 new faculty. All have excellent credentials. The experienced faculty also have excellent research programs and the new faculty are expected to grow their research programs which will support the MSEnvE degree.

	141401 MS Environmental Engineering	
	Fall Enrollment	Number of Degrees
2014-2015	10	6
2015-2016	7	8
2016-2017	8	1
2017-2018	15	7
2018-2019	11	7
2019-2020	8	5
2020-2021	11	4

Montana University System

PROGRAM REVIEW

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Environmental Engineering (BS)

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

The BS Environmental Engineering program should continue.

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 BSEnvE is an excellent program at Tech and fits Tech's special focus designation. It has sustained enrollment. The program is accredited by the Accreditation Board for Engineering and Technology (ABET) which is the highest accreditation standard available. The program is strongly connected to industry. Job placement is excellent with most graduates taking employment with high-quality engineering companies. The department historically has held five faculty; today it has 4 faculty with an expectation to hire a fifth in the near future. The department has recently experienced some faculty turn over. Current faculty includes 2 veteran faculty and 2 new faculty. All have excellent credentials. The experienced faculty also have excellent research programs.

	141401 BS Environmental Engineering	
	Fall Enrollment	Number of Degrees
2014-2015	49	13
2015-2016	45	8
2016-2017	60	15
2017-2018	46	14
2018-2019	53	8
2019-2020	56	16
2020-2021	57	7

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Metallurgical/Materials Eng. (BS)

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

The BS Metallurgical/Materials program should continue

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.

BS/M&ME is an excellent heritage program at Montana Tech that fits the university's special focus designation. The program is accredited by the Accreditation Board for Engineering and Technology (ABET), which is the highest accreditation standard available. Although M&ME generally has sustained enrollment, it is rebounding from two substandard recruiting years in 2017-18 and 2018-19. The program fosters exceptionally strong relationships with the industry sectors that it serves. Job placement is excellent with most graduates taking employment with mining or manufacturing companies. A relatively high percentage of graduates opt to continue their education by pursuing graduate degrees in Metallurgical/Mineral Processing or Materials Science and Engineering. The department historically held six faculty; however, one position was eliminated following Program Prioritization and a second is open due to a retirement. Current faculty includes four veteran faculty, each with excellent credentials. A newly hired member will join the M&ME faculty in Spring 2022. The experienced faculty have established productive research programs and support the Materials Science and Engineering M.S. and Materials Science Ph.D. programs.

	142001 BS Metallurgical & Materials Engr	
	Fall Enrollment	Number of Degrees
2014-2015	45	7
2015-2016	53	9
2016-2017	45	13
2017-2018	40	16
2018-2019	33	12
2019-2020	35	11
2020-2021	35	4

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Metallurgical/Mineral Process Eng. (MS)

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

The MS Metallurgical/Mineral Process Engineering program should continue

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 MS/M&MPE is an excellent program at Montana Tech that fits the university's special focus designation. It is a research-based degree and has modest but generally consistent enrollment. The predominant majority of students conduct externally funded research on behalf of both public and private sector entities. The program fosters exceptionally strong relationships with the industry sectors that it serves. Job placement is excellent with most graduates securing employment with mining or manufacturing companies. Current faculty includes four veteran faculty, each with excellent credentials. The experienced faculty have established strong and productive research programs. In addition to MS/M&MPE, the faculty also teach, advise graduate students, and perform research in support the Materials Science and Engineering M.S. and Materials Science Ph.D. programs. A newly hired faculty member will join the M&ME faculty in Spring 2022 and measures are in place to ensure he will immediately become research-active and advise graduate students.

	142001 MS Metallurgical/Min Process Engr	
	Fall Enrollment	Number of Degrees
2014-2015	12	8
2015-2016	8	4
2016-2017	8	5
2017-2018	8	4
2018-2019	8	4
2019-2020	7	6
2020-2021	2	1

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Materials Science & Engineering (MS)

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

The MS Material Science & Engineering program should continue

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 MS/MSE is a new degree program at Montana Tech specifically designed to fit the university's special focus designation. OCHE approved the MS/MSE program in Spring 2018 and the program began accepting students in Fall 2018. Enrollment figures are low but steadily increasing; the growth trend is expected to continue until the program reaches maturity. The ten degrees conferred through Spring 2021 exceed the total projection of six outlined in the Curriculum Request Form submitted to the Montana Board of Regents in 2017-18. Students enrolled in the research-oriented program follow either a thesis or a practicum track. Students performing research on the thesis track are funded by industrial or government sponsors.

	141801 MS Materials Science Engineering	
	Fall Enrollment	Number of Degrees
2014-2015		
2015-2016		
2016-2017		
2017-2018		
2018-2019	3	
2019-2020	5	6
2020-2021	8	4

Montana University System

PROGRAM REVIEW

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Carpentry (CAS)

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

The future of the certificate of applied science in carpentry looks very bright with a high demand for qualified carpenters in Butte and Southwest Montana. It is also desirable as it is part of the two-year construction technology AAS program as it is the first stackable credential within the two-year program. Students who find employment or who have to exit the program after two semesters due to family matters, a move, etc., have a certifiable skill set when they complete two semesters of coursework.

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.

As the demand grows for employment within the construction trades area, we will see our numbers continue to grow in the certificate program. Our first year students complete volunteer work for a number of non-profit entities in the Butte community wherein they get "hands-on" experience in addition to what they are learning in the classroom setting. We believe that having a certificate program is beneficial to the two-year degree and to the students who are not able to continue for one reason or another.

	460201 CERTAS Construction Tech-Carpentry	
	Fall Enrollment	Number of Degrees
2014-2015		
2015-2016		3
2016-2017		
2017-2018		1
2018-2019		
2019-2020		
2020-2021		

Montana University System

PROGRAM REVIEW

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Construction Technology/Carpentry (AAS)

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

Our construction technology AAS degree continues to flourish, and we now have two full-time instructors dedicated to the program. The number of students enrolled in the program consistently grows with each new year with a slight downturn between 2019 and 2020; however, we anticipate an increase in the coming years due to the employment shortages for qualified construction personnel and the need for more credentialing at the workplace.

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.

We re-evaluated the construction curriculum in the fall of 2020 and set it up so that students had multiple exit points within the program, which we refer to as "stackable" credentials. This credentialing allows a student to leave the program after two years with a certificate of applied science in carpentry, to complete another two semesters with an AAS in construction technology, or to move to our North campus and complete coursework for a Bachelor of Applied Science degree in business with an emphasis in construction management. The latter option is becoming more and more popular—especially for our athletes who have four or five years of eligibility as they now have an additional option for a four-year degree. We will also be working with the Montana Department of Labor and Industry in regard to formulating apprenticeships in the construction program, which will be of benefit to our students and to the construction companies in and around our area. The "hands-on" experiences within the apprenticeships and the work that our students complete for non-profit organizations in our community is of utmost importance. We believe that our construction program will continue to grow in the coming years.

	460201 AAS Construction Tech-Carpentry	
	Fall Enrollment	Number of Degrees
2014-2015	10	1
2015-2016	15	5
2016-2017	14	4
2017-2018	21	6
2018-2019	25	4
2019-2020	28	9
2020-2021	27	4

Institution: **Montana Technological University**

Program Years: **2020-2021**

List of the programs reviewed:

Materials Science (PhD)

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

The PHD Material Science program should continue

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.

PhD/MatSci is an exceptional program at Montana Tech that fits the university's special focus designation. Since its inception in 2014-2015, enrollment has risen from 4 to 17 students, and nine students have earned Ph.D. degrees, including one in July, 2021. Program graduates have found employment in academia (5) and industry (3). Faculty from the Departments of Chemistry and Geochemistry, Mechanical Engineering, and Metallurgical and Materials Engineering are the prime campus participants engaged in providing Ph.D. course instruction, conducting research, and advising graduate students. All of the Ph.D. students conduct research sponsored by federal government entities. The research is important to national defense, natural resource management, and the mining and manufacturing industries.

	401001 PHD Materials Science	
	Fall Enrollment	Number of Degrees
2014-2015	4	
2015-2016	9	
2016-2017	13	
2017-2018	17	2
2018-2019	17	3
2019-2020	17	1
2020-2021	16	3