Montana University System

PROGRAM REVIEW

Institution: **Montana State University-Northern**

Program Years: **2016-2023**

List of the programs reviewed:

BA in Liberal Studies

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

Retain.

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.

MSU-Northern's Bachelor of Arts degree in Liberal Studies is designed to provide students with a flexible liberal education emphasizing the humanities and social sciences. This coursework provides a foundation for understanding the ideas shaping our society. In addition, the program is founded on a general education core, with an emphasis on advanced work in two areas of liberal study with options in the humanities and social sciences.

	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
B.A. Liberal Studies graduates	0	4	6	7	7	25	23	21
B.A. Liberal Studies majors	15	16	10	12	15	19	48	42

The Bachelor of Arts in Liberal Studies supports students in their career path exploration. This degree allows students and their advisors to craft a plan of study that meets students' requirements. For example, some students choose to double major with the BA in Liberal Studies, rather than degrees requiring a minor, which the streamlining of coursework now fit a wider variety of students' interests. Specifically, some students from the BS in Criminal Justice have taken advantage of this option to include experience in psychology and

community leadership classes if they have an interest in social work as well as students preparing for law school that take additional courses that are writing-heavy such as literature and history courses. Another option students have pursued is the BA in Graphic Design and Liberal Studies to achieve a balance of liberal arts and social science beyond the studio and art history courses.

Since the last review cycle a new course, LSH 494: Senior Capstone, was added as a degree requirement, and gives students an opportunity to combine their interests into a final project.

With the current strength and trajectory of the BA in Liberal Studies, there are no immediate plans for changes. Based on anecdotal student feedback there may be interest in an option, either by expanding the course work, or creating a separate degree, that would allow for a transferable general science and liberal studies.

Montana University System

PROGRAM REVIEW

Institution: **Montana State University-Northern**

Program Years: **2016-2023**

List of the programs reviewed:

AA General Education

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

Retain.

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 general education core allows students to reaffirm their common experiences, to redefine their common goals, and to provide a foundation for confronting common problems. The courses selected for inclusion in the general education core emphasize communication and techniques of creative inquiry that are used in all disciplines.

	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
General Education graduates	4	5	5	6	16	18	20	10
General Education majors	44	17	19	20	41	49	53	48

The Associate of Arts in General Education allows students to complete an associate degree while fulfilling the general education requirement that can be used for a baccalaureate degree at any university. In addition, they can start taking additional classes, and use selectives strategically, to investigate potential majors they may be interested in. This degree program is offered in face-to-face and online modes of delivery.

Since the last review cycle, Valerie Guyant, the previous Chair of CASE, made a concerted effort to move students from undecided status to either the AA in General Studies or the BA in Liberal Studies. This was done together with advising and the support of the Registrar's Office.

With the current strength and trajectory of the AA in General Education there are no immediate plans for changes except to continue advising students out of the undecided option.

Montana University System

PROGRAM REVIEW

Institution: **Montana State University-Northern**

Program Years: **2017-2023**

List of the programs reviewed:

C.A.S. Diesel Technology; A.A.S. Diesel Technology; B.S. Diesel Technology; B.S. Diesel Technology – Field Maintenance option; B.S. Diesel Technology – Equipment Management option; minor Diesel Technology

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

Recommendation is to retain and sustain student enrollment in all degree areas, and the minor in Diesel Technology

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.

Brief History:

The diesel technology program has grown from small beginnings to one of the major programs on the MSU Northern campus. Two major additions to the degree offerings have occurred since the last review – the Equipment Management option within the B.S. degree, and most recently the Certificate of Applied Science. MSU Northern is one of a limited number of university colleges offering a 4-year degree in Diesel Technology. The Diesel Technology programs offer a unique, hands-on technology education recognized by industry leaders as one of the nation's leading Diesel Technology programs. The academic programs are designed as a pathway to allow students to advance from one to another without losing credits or repeating courses.

Background:

Specialized technicians (employees) bringing a formal education, excellent work ethic, life-long learning skills, and the ability to adapt to change are in short supply. Industry leaders continue to report that these are the necessary skills for the 21st century. The Diesel Technology Program's goal is to develop a source of professionally educated, highly skilled, and motivated employees for industry. At MSU-Northern, these are the qualities that we strive to instill in our graduates in the Diesel Program. Administration and faculty look forward to working with industry leaders, discussing ideas and implementing initiatives for meeting this standard and how together we can create programs that ensures Northern graduates and North American industries will be in demand well into the future.

The Diesel Program utilizes a formal Cooperative Education program which collaborates with industry partners to prepare students and strengthen graduates, to excel in the fields of Diesel technology. As a result, the Diesel Program receives industry support and critical feedback.

While this has helped to improve our program, the need for long term stable budgets is necessary to keep our program current with industry needs. We have worked with industry to receive several donations, which reduce the demand on our

operating budgets. However, these donations are not necessarily on a regular basis, and in some cases, they add to the budget demands by requiring the purchase of specialized tooling and equipment to support donated equipment.

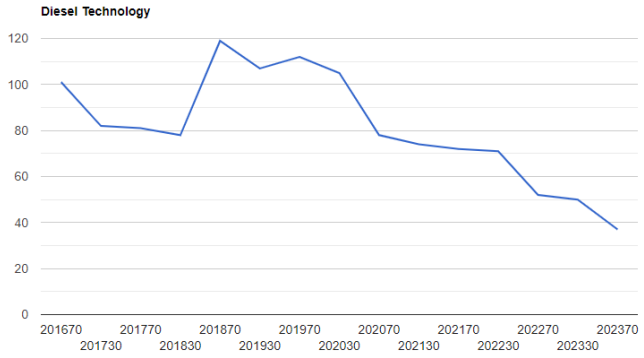
As technology advances so does the need for additional resources in both the classroom and the labs. Over the past seven years, MSU-Northern has received some badly needed equipment that will help enhance the learning of the students. Some of the new equipment includes manufacturer specific diagnostic laptops and communication adapters, powertrain simulators, vehicle chassis, generator sets, diesel engines and emission aftertreatment systems. Program faculty work with multiple industry partners to secure loaned equipment to utilize throughout the curriculum. The equipment is typically utilized for either one or two semesters at which point it is replaced with new equipment. This arrangement allows students to work on current model year technology. The addition of the DTC (Diesel Technology Center) building has provided updated lab space with dedicated rooms for engines, powertrains, fuel systems, engine diagnostics, equipment, and chassis systems. Break out rooms enhance teaching effectiveness by allowing faculty and students a space to utilize for informal lectures. The rate of technological advances are not expected to slow down anytime soon therefore we must continue to move our programs forward through instructor education and new equipment. One-time donations are well appreciated but are not the complete solution for continuous and consistent growth. Long range planning and steady resources with thoughtful implementation will be key.

Enrollment and Graduation Numbers:

Data provided by the MSU-Northern Institutional Research offices show the graduation and enrollment numbers since the 2016-17 academic year. Tables 1 and 2 provide AAS Diesel technology enrollment and graduation, Tables 3 and 4 provide BS Diesel technology enrollment and graduation, Tables 5 and 6 provide BS Diesel technology: Field Maintenance option enrollment and graduation, Table 7 and 8 provide BS Diesel technology: Equipment Management option enrollment and graduation, Table 9 and 10 provide CAS Diesel technology enrollment and graduation and Table 11 and 12 provide Diesel technology Minor enrollment and graduation.

PLEASE NOTE: the data for the graphs and tables below was obtained from MSU-Northern's IRVM site and includes 2024. As we are currently in the 2023-2024 academic year, all the results for this year show 0. This number will change when the data for the academic year is entered.

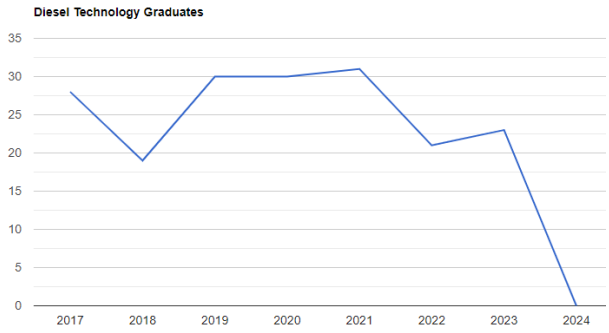
Table 1: A10 – A.A.S. Diesel Technology ENROLLMENT



Diesel Technology

Term	A10
201670	101
201730	82
201770	81
201830	78
201870	119
201930	107
201970	112
202030	105
202070	78
202130	74
202170	72
202230	71
202270	52
202330	50
202370	37

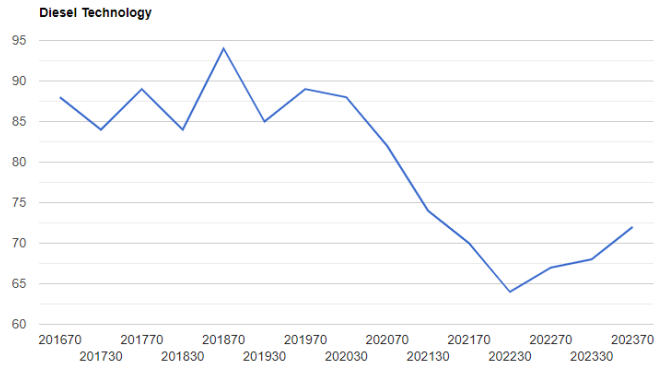
Table 2: A10 – A.A.S. Diesel Technology GRADUATES



Diesel Technology Graduates

AY	A10
2017	28
2018	19
2019	30
2020	30
2021	31
2022	21
2023	23
2024	0

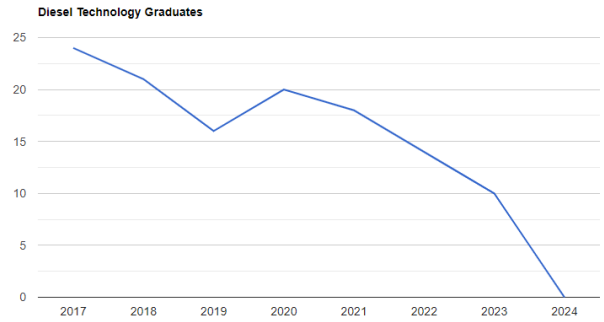
Table 3: B05 – B.S. Diesel Technology ENROLLMENT



Diesel Technology

Term	B05
201670	88
201730	84
201770	89
201830	84
201870	94
201930	85
201970	89
202030	88
202070	82
202130	74
202170	70
202230	64
202270	67
202330	68
202370	72

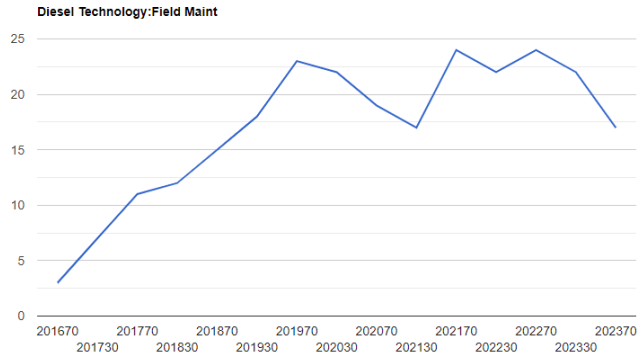
Table 4: B05 – B.S. Diesel Technology GRADUATES



Diesel Technology Graduates

AY	B05
2017	24
2018	21
2019	16
2020	20
2021	18
2022	14
2023	10
2024	0

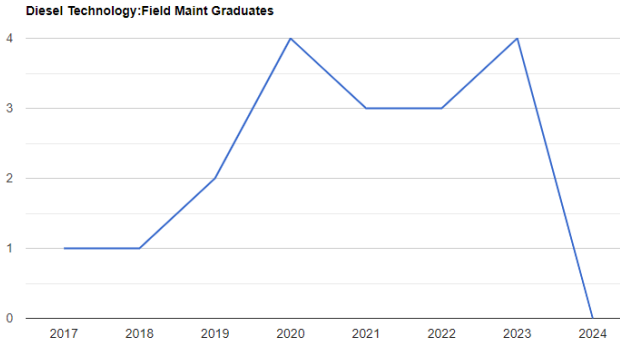
Table 5: B06 – B.S. Diesel Technology: Field Maintenance option ENROLLMENT



Diesel Technology:Field Maint

Term	B06
201670	3
201730	7
201770	11
201830	12
201870	15
201930	18
201970	23
202030	22
202070	19
202130	17
202170	24
202230	22
202270	24
202330	22
202370	17

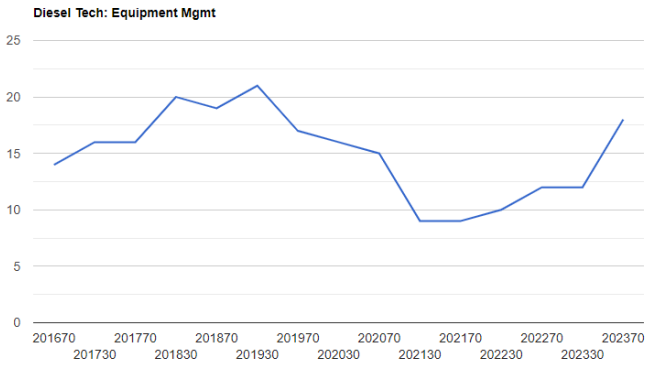
Table 6: B06 – B.S. Diesel Technology: Field Maintenance option GRADUATES



Diesel Technology:Field Maint Graduates

AY	B06
2017	1
2018	1
2019	2
2020	4
2021	3
2022	3
2023	4
2024	0

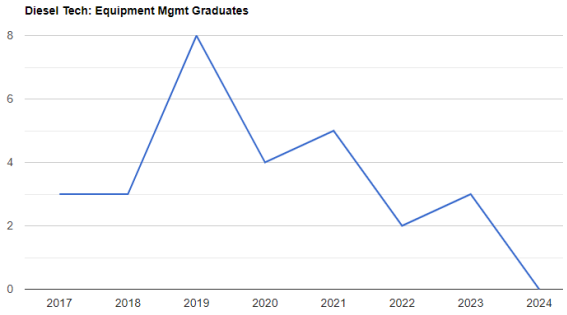
Table 7: B92 – B.S. Diesel Technology: Equipment Management option ENROLLMENT



Diesel Tech: Equipment Mgmt

Term	B92
201670	14
201730	16
201770	16
201830	20
201870	19
201930	21
201970	17
202030	16
202070	15
202130	9
202170	9
202230	10
202270	12
202330	12
202370	18

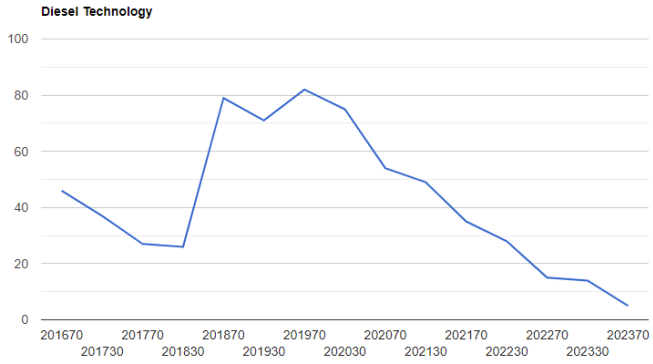
Table 8: B92 – B.S. Diesel Technology: Equipment Management option GRADUATES



Diesel Tech: Equipment Mgmt Graduates

AY	B92
2017	3
2018	3
2019	8
2020	4
2021	5
2022	2
2023	3
2024	0

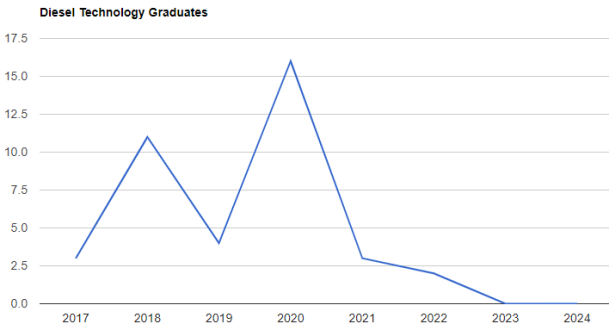
Table 9: C18 – C.A.S. Diesel Technology ENROLLMENT



Diesel Technology

Term	C18
201670	46
201730	37
201770	27
201830	26
201870	79
201930	71
201970	82
202030	75
202070	54
202130	49
202170	35
202230	28
202270	15
202330	14
202370	5

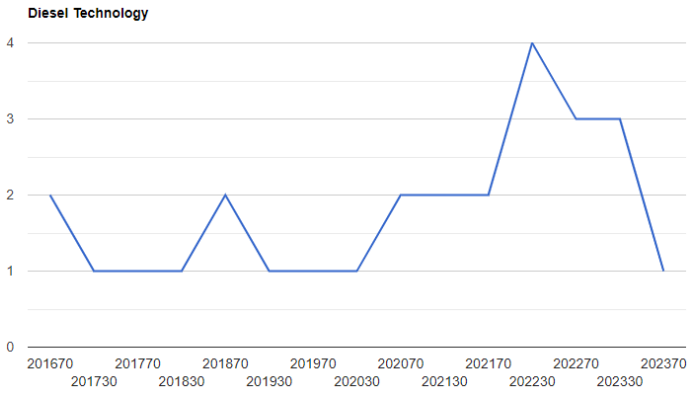
Table 10: C18 – C.A.S. Diesel Technology GRADUATES



Diesel Technology Graduates

AY	C18
2017	3
2018	11
2019	4
2020	16
2021	3
2022	2
2023	0
2024	0

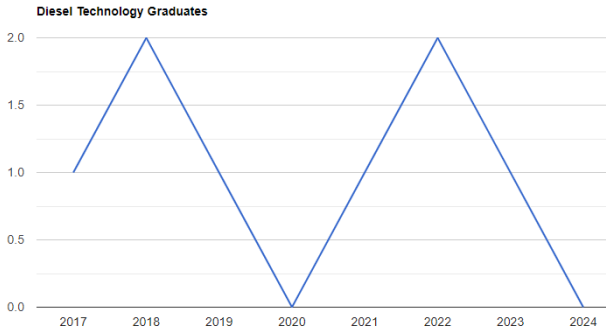
Table 11: M05 – minor Diesel Technology ENROLLMENT



Diesel Technology

Term	M05
201670	2
201730	1
201770	1
201830	1
201870	2
201930	1
201970	1
202030	1
202070	2
202130	2
202170	2
202230	4
202270	3
202330	3
202370	1

Table 12: M05 – minor Diesel Technology GRADUATES



Diesel Technology Graduates

AY	M05
2017	1
2018	2
2019	1
2020	0
2021	1
2022	2
2023	1
2024	0

Graduation – Departmental Distinction and Latin Honors

The tables below show the number of students who have graduated with Departmental Distinction and with Latin Honors. The numbers in these categories have remained relatively consistent over the time period under review.

Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2017				
B.S. Diesel Tech	12	5	3	1
B.S. Diesel Tech - Fld Maint. Option	1			
B.S. Diesel Tech - Equip. Management	1			
A.A.S. Diesel Tech	8	5	2	1
C.A.S. Diesel Tech				
A.A.S. Agricultural Mechanics	10	5	3	1

Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2018				
B.S. Diesel Tech	9	5	4	
B.S. Diesel Tech - Fld Maint. Option	1	1		
B.S. Diesel Tech - Equip. Management	3	2	1	
A.A.S. Diesel Tech	3	3	2	
C.A.S. Diesel Tech				
A.A.S. Agricultural Mechanics	4	2	2	1

Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2019				
B.S. Diesel Tech	6	3	3	
B.S. Diesel Tech - Fld Maint. Option	2	1		
B.S. Diesel Tech - Equip. Management	4	1	2	
A.A.S. Diesel Tech	11	8	3	
C.A.S. Diesel Tech	1			
A.A.S. Agricultural Mechanics	8	5	4	
Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2020 - COVID year				
B.S. Diesel Tech	3	3		
B.S. Diesel Tech - Fld Maint. Option				
B.S. Diesel Tech - Equip. Management				
A.A.S. Diesel Tech	4	2	2	
C.A.S. Diesel Tech				
A.A.S. Agricultural Mechanics	6	4	2	
Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2021				
B.S. Diesel Tech	12	10	4	
B.S. Diesel Tech - Fld Maint. Option	2	1	2	
B.S. Diesel Tech - Equip. Management				
A.A.S. Diesel Tech	19	15	10	
C.A.S. Diesel Tech	3	4	1	
A.A.S. Agricultural Mechanics	9	10	8	

Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2022				
B.S. Diesel Tech	13	9	5	
B.S. Diesel Tech - Fld Maint. Option	1			
B.S. Diesel Tech - Equip. Management	1	1		
A.A.S. Diesel Tech	7	8		
C.A.S. Diesel Tech	2			
A.A.S. Agricultural Mechanics	2	2		

Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2023				
B.S. Diesel Tech	5	2	4	
B.S. Diesel Tech - Fld Maint. Option	3		2	
B.S. Diesel Tech - Equip. Management	3		2	
A.A.S. Diesel Tech	12	5	8	
C.A.S. Diesel Tech				
A.A.S. Agricultural Mechanics	4	1	3	

Industry Partnerships:

The program has numerous industry partners, from local, state, regional, and national companies. These include partners in construction equipment, agricultural equipment, mining, marine, on highway transportation, and others. Program faculty and MSU Northern administration has worked with the industry partners to secure donations (financial, equipment, training aids, etc.) and also to develop placement of cooperative education placements and placements of graduates.

The dynamic partnerships that MSU Northern has cultivated with the private sector have driven the Diesel Technology program to craft a set of truly unique educational opportunities for students and prospective employees for our business partners.

Advisory Board:

The MSU Northern Diesel program has a very engaged advisory board that meets biennially during the school year (one fall and one spring meeting). The board consists of industry dealers, corporate CEOs, and leaders representing manufacturers, both domestic and foreign. The board has made numerous suggestions and initiatives that have been implemented which have benefited the Diesel program. The board has also been instrumental in recruiting efforts by implementing interactive online videos and hosting on campus events for future students. The board is very active in articulation/transfer of community college graduates and recruiting efforts throughout the Pacific Northwest and beyond for the Diesel Technology Programs. Members of the board and other employers are very active in our Diesel Cooperative Education program. Traditionally employers make an on campus recruiting visit early fall for CO-OP and fall or spring graduates. Employers continue their recruiting effort through late spring semester. The advisory board works with faculty regarding curriculum changes and course changes that will ensure that the diesel curriculum will be current and utilize state of the art equipment.

Ties to University Mission Statement and Core Themes:

MSU Northern Mission Statement: "MSU Northern provides higher education to students for professional and technical careers through an institution dedicated to teaching and the pursuit of knowledge". The Diesel Mechanics technology programs are directly tied to the Mission statement as both the degree and the minor are technical in nature, leading to technical careers for the graduates. Ties to the Mission statement are further evidenced by the approved industry technical and professional training that the faculty has. This training is brought directly into the lecture room and the hands-on labs, benefiting the students. Life long learning skills are utilized throughout the curriculum which allows students to enter into industry prepared for current and future technologies.

Articulation Agreements and Recruiting:

The diesel program has formalized 13 articulation agreements for graduates of 2-year diesel technology programs. These articulation agreements are spread out with other campuses in state, out of state and in Canada. The purpose of the agreements is to allow seamless transfer for these graduates to gain the advantage of enrolling into our various Bachelor of Science degrees.

Industry partners are available to assist MSU Northern recruiters at high schools and colleges in their regions. This leads to focused target recruiting for the diesel program area. The diesel program has worked with multiple industry partners to host "Industry Night" recruiting events in which local area high schools are invited into the facilities of our industry partners. Northern faculty and recruiting specialists team with our industry partners to showcase career opportunities launched with Northern degrees. Faculty routinely meet with prospective students and parents who are visiting to campus to look at the diesel program as a choice for their higher education degree. This action leads to a personal one-on-one meeting that significantly influences the decision of the student to attend MSU Northern. Faculty also participate in TekNoXpo, a yearly on-campus recruiting event drawing hundreds of local high school students, to showcase skills and opportunities within the diesel industry.

Faculty:

The program currently has 3 ½ faculty dedicated to diesel courses only, with four other faculty teaching diesel/automotive support courses. All faculty members have related industry experience and training relating to their teaching fields. All faculty hold undergraduate degrees in the diesel field or related fields, six also hold their Masters degrees, and others are pursuing their Masters degrees. One faculty member also holds professional membership in SAE (Society of Automotive Engineers), and several are ASE certified.

Cooperative Education:

The Diesel Program utilizes a formal Cooperative Education program which collaborates with industry partners to prepare students and strengthen graduates, to excel in the fields of Diesel technology. As a result, the Diesel Program receives industry support and critical feedback. The cooperative education requirement provides real world, hands on experience to strengthen the fundamentals learned while enrolled in their course work at MSU Northern.

Data from the MSU-Northern Career Center: Fall 2016 through summer 2023 – 235 Diesel/Ag Mechanics students completed their cooperative education credits for a total of 1134 credits. This number includes fall, spring and summer co-ops.

Challenges:

As tables 1 to 12 show, enrollment and graduation numbers have fluctuated over the past seven years but program numbers have remained robust. General trends show that enrollment grew prior to 2020, dipped from fall 2020 to fall 2022, and has risen slightly from spring 2023 to current. This is not exact with every degree option, but rather a general trend of enrollment of the past seven years. Graduation rates have lagged enrollment in most degree options. The faculty would

like to note several challenges encountered during the past 7-year review cycle. Program growth was steadily increasing prior to the Covid-19 pandemic. Course enrollment numbers were expanded along with multiple lab sections to deal with the increased student numbers during this period. However, faculty were in deep overload and lab resources struggled to keep pace with student enrollment. Additional full-time faculty were not hired to deal with the increased enrollment nor was there a budget put into place to adequately accommodate the need for additional lab resources. The result of this, along with the restrictions that were put into place during the Covid-19 pandemic, led to an enrollment drop in the past few years. In reviewing the student enrollment numbers, it does appear that the enrollment drop has stabilized and there has been a slight uptick in enrollment this past year. Faculty continue to be concerned about overloaded teaching loads and lack of lab resources to handle existing student loads. In order to grow the program, additional faculty, lab resources, budget and support staff need to be added to the program. It is important to note that the overload issue was brought up in the last program review, and it continues to be an issue in this past seven-year cycle. Another challenge the program faces is faculty turnover. Since 2016, there have been five full time faculty who have either retired or resigned. In addition, there have been three adjunct faculty members to deal with overload conditions, one faculty who was reassigned to help with overload and one part time faculty member who is hired on a letter of appointment. Faculty are the core of the program, and recruiting qualified faculty members from industry has been incredibly challenging due to noncompetitive wage and benefit packages as compared to private industry. Retention of faculty has also proven challenging due to overloaded work conditions along with noncompetitive wage and benefit packages. Simply put, MSU-Northern is not able to compete against the diesel industry, and the specific skillsets of faculty need to come from industry. Another important item to note is that while all the full-time faculty that were hired have undergraduate degrees in diesel or a related field of study, none started employment at MSU-Northern with a master's degree. The university pushes faculty to complete master's degrees, and that adds a significant burden and workload to new hires.

Recommendations:

Because of the increasing career opportunities and aging work force in this highly technical industry (locally, state-wide, regionally, nationally, globally) skilled technicians are in dire need. Graduates of the MSU Northern diesel program are typically offered multiple jobs for career choices. Undergraduate students are also typically offered multiple cooperative education opportunities which lead to increased student retention. Specialized technicians that possess a formal education, excellent work ethic, life-long learning skills, and the ability to adapt to change are in very short supply.

Recommendation is to retain and sustain student enrollment in all degree areas, and the minor in Diesel Technology

With this recommendation, it is evident that there is an immediate need for added qualified faculty and additional program resources are needed. The program faculty have recommended hiring several support positions. Specifically, a Director of the Diesel Technology program, a professional advisor (for the COTS), a Recruiter/Industry Relations Specialist, and a full-time lab technician. These additions will allow a more efficient and effective utilization of current and future resources, as well as the sustainability of the program.

A plan should be developed and implemented with the goal of increasing the number of program faculty as well as addressing the faculty request for administration, advising, industry relations, recruiting and lab management support. It is worth noting that these same requests were made in the last program review and no progress has been made. It is commendable that the diesel program has progressed as well as it has in the past seven years despite the challenges described in this report.

Montana University System

PROGRAM REVIEW

Institution: **Montana State University-Northern**

Program Years: **2017-2023**

List of the programs reviewed:

A.A.S. Agricultural Mechanics Technology; minor Agricultural Mechanics Technology

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

Recommendation is to continue to **grow** both the A.A.S. degree and the minor in Agricultural Mechanics Technology

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.

Brief History

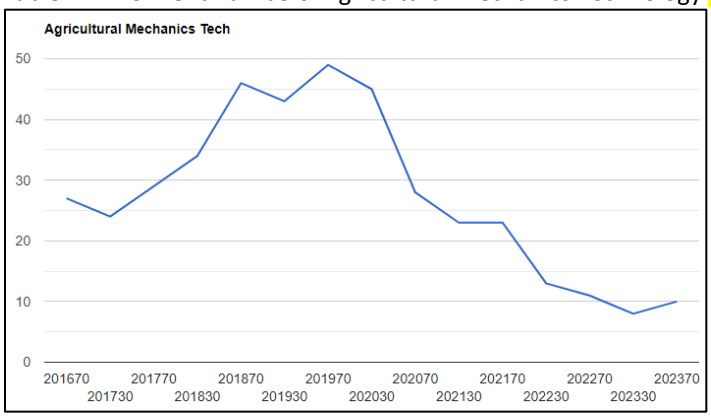
The Agricultural Mechanics Technology Program provides competent technicians to aid the #1 industry in the state. The Ag Mechanics is one of five programs of its kind in the nation, being one of three in the western U.S. The program and students are highly regarded by top industry leaders both nationwide and internationally.
The Program is very close knit with the Diesel Technology program and allows students to attain both an Ag Mech degree and a Diesel Technology degree in the same time frame as one degree (effective and efficient time-to-degree).

Enrollment and Graduation Numbers

Data provided by the MSU Northern Institutional Research office show the graduation and enrollment numbers over the past 9 years for both the A.A.S. and the minor areas. Table 1 & 2 show Enrolment numbers, Tables 3 & 4 show graduation numbers Unfortunately, the numbers show a decrease over the years included in both the students enrolled and the graduation numbers, with a slight up-tick in enrolment numbers for FA2023.
Table 5 shows the number of students graduating students who earned Departmental Distinction and Latin Honors for their efforts during their time in the Ag. Mech program.

PLEASE NOTE: the data for the enrolment and graduation graphs and tables below was obtained from MSU-Northern's IRVM site and includes 2024. As we are currently in the 2023-2024 academic year, all the results for this year show 0. This number will change when the data for the academic year is entered.
(https://irvm.msun.edu/Majors/majorDetail.jsp?majr=A06&term=202370)

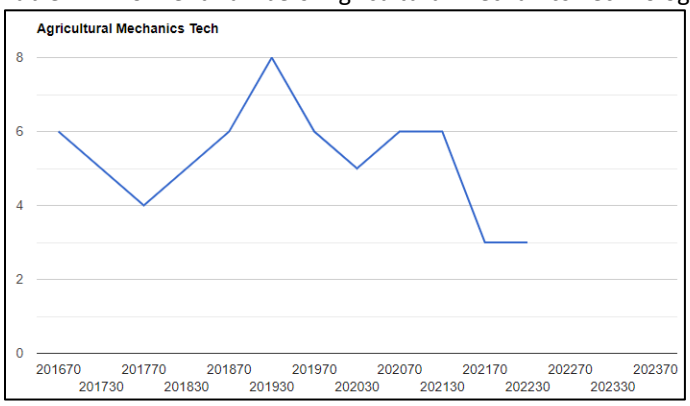
Table 1: Enrolment numbers: Agricultural Mechanics Technology A.A.S.



Agricultural Mechanics Tech

Term	A06
201670	27
201730	24
201770	29
201830	34
201870	46
201930	43
201970	49
202030	45
202070	28
202130	23
202170	23
202230	13
202270	11
202330	8
202370	10

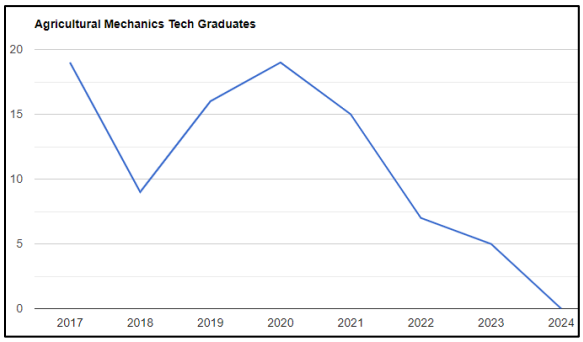
Table 2: Enrolment numbers: Agricultural Mechanics Technology minor:



Agricultural Mechanics Tech

Term	M01
201670	6
201730	5
201770	4
201830	5
201870	6
201930	8
201970	6
202030	5
202070	6
202130	6
202170	3
202230	3
202270	
202330	
202370	

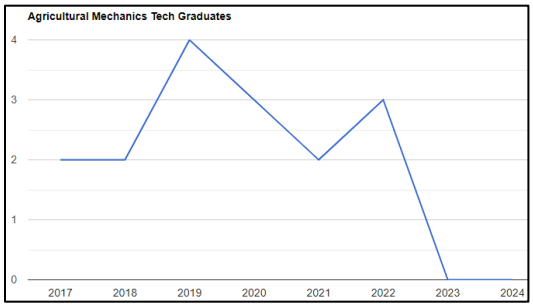
Table 3: Graduate numbers: Ag Mechanics Technology A.A.S.



Agricultural Mechanics Tech Graduates

AY	A06
2017	19
2018	9
2019	16
2020	19
2021	15
2022	7
2023	5
2024	0

Table 4: Graduate numbers: Agricultural Mechanics Technology minor:



Agricultural Mechanics Tech Graduates

AY	M01
2017	2
2018	2
2019	4
2020	3
2021	2
2022	3
2023	0
2024	0

Graduation – Departmental Distinction and Latin Honors

The tables below show the number of students who have graduated with Departmental Distinction and with Latin Honors. The numbers in these categories have remained relatively consistent over the time period under review.

Graduation Yr & Degree	Departmental Distinction	Cum Laude	Magna Cum Laude	Summa Cum Laude
Spring 2017				
A.A.S. Agricultural Mechanics	10	5	3	1
Spring 2018				
A.A.S. Agricultural Mechanics	4	2	2	1
Spring 2019				
A.A.S. Agricultural Mechanics	8	5	4	
Spring 2020				
A.A.S. Agricultural Mechanics	6	4	2	
Spring 2021				
A.A.S. Agricultural Mechanics	9	10	8	
Spring 2022				
A.A.S. Agricultural Mechanics	2	2		
Spring 2023				
A.A.S. Agricultural Mechanics	4	1	3	

Industry Support

The program has multiple industry partners from local companies, as well as across the state-wide, regionally, and nationally. The program faculty and administration have worked very closely with industry partners to secure donations, develop cooperative education opportunities (Co-Op), and full-time placements and career opportunities for graduates. Donations secured include monetary funds for buildings, program equipment. The local dealers loan equipment valued in the millions of dollars of the most technologically advanced agricultural equipment to the program for use during the academic year. Several local industry partners allow instructors to conduct labs onsite at their facilities.

Advisory Board

The MSU-Northern Agricultural Mechanics program has a very engaged advisory board that meets biennially during the school year (one fall and one spring meeting) in conjunction with the Diesel Technology Advisory board. The board consists of industry dealers, corporate CEOs, and leaders representing manufacturers, both domestic and foreign. The board has made numerous suggestions and initiatives that have been implemented which have benefited the Ag. Mechanics program. The board has also been instrumental in recruiting efforts by implementing and hosting on-campus events for future students. Members of the board and other employers are very active in our Ag. Mechanics Cooperative Education program. Traditionally employers make an on-campus recruiting visit early fall for Co-Op and fall or spring graduates. Employers continue their recruiting effort through late spring semester. The advisory board works with faculty regarding curriculum changes and course changes that will ensure that the Ag. Mechanics curriculum will be current and utilize state of the art equipment.

Ties to University Mission Statement and Core Themes

MSU Northern Mission Statement: *"MSU Northern provides higher education to students for professional and technical careers through an institution dedicated to teaching and the pursuit of knowledge"*. The Ag. Mechanics technology programs are tied directly to the Mission statement as both the degree and the minor are technical in nature, leading to technical careers for the graduates. Ties to the Mission statement are further evidenced by the approved industry technical and professional training that the faculty has. This training is brought directly into the lecture room and the hands-on labs, benefiting the students.

Faculty

The program currently has 1 faculty on a LOA that is specializing in the Ag. Mechanics courses, and also teaches an Electrical Systems II lab (diesel/automotive/ag mech students). Several faculty members teach courses that are utilized in other program areas including the Ag. Mechanics (e.g. diesel engines, Heating & A/C, hydraulics, etc.). All faculty members have related industry experience and training relating to their teaching fields. All faculty also hold undergraduate degrees in the Ag. Mechanics field or related fields, several also hold their Masters degrees. One faculty member also holds professional membership in SAE (Society of Automotive Engineers), and several are ASE certified.

Cooperative Education

The Ag. Mechanics program utilizes (but does not require) the formal Cooperative Education program through the MSU-Northern Career Center. This program collaborates with industry partners to prepare students and strengthen graduates, to excel in the fields of Ag. Mechanics technology. As a result, the Ag. Mechanics Program receives industry support and critical feedback. The cooperative education requirement provides real-world, hands-on experience to strengthen the fundamentals learned while enrolled in their course work at MSU-Northern.

Data from the MSU-Northern Career Center: Fall 2016 through summer 2023 – 235 Diesel/Ag Mechanics students completed their cooperative education credits for a total of 1134 credits. This number includes fall, spring and summer co-ops.

Challenges

As Tables 1-4 clearly show, the program numbers have dropped the past two years, especially in the minor. Current faculty note that the main reason is that there has not been a dedicated faculty person for this program since the 2020-21 academic year. There was a slight drop in enrollment due to the onset of the Covid-19 pandemic, but there was a direct correlation to the loss of the full time, dedicated ag-mechanics instructor to the drop in enrollment From the fall of 2021 to the spring of 2023, ag mechanics courses were taught utilizing primarily adjunct faculty. Beginning in the 2023-24 academic year, a new instructor has been bought on as an LOA. This instructor has a background in hands-on agricultural machinery and is willing/wanting to be the voice a for the Ag Mechanics program. He is willing to get actively involved procuring the needed equipment, components, training aids, and other resources to revitalize the program. It has been demonstrated during this past review cycle that having a dedicated faculty member to champion the program makes the difference regarding student enrollment and retention. Additionally, current faculty believe that industry demand for the program is more prevalent going into the future as compared to this past review cycle. With proper resources and a full-time faculty member, there isn't a reason that the program won't grow.

Faculty recognize that the enrolment and graduation numbers are lower the past two years, therefore there is a need for a more concerted effort to recruit students into both the A.A.S. and the minor. Current faculty will need to work with the MSU-Northern recruiting office to develop and disseminate materials that will attract more students into the program. This effort will also involve discussions with faculty of other program areas to encourage current students into the minor (e.g., discussions with business and agricultural technology faculty)

Recommendations

Because of the increasing career opportunities and aging work force in this highly technical industry (locally, state-wide, regionally, nationally, globally) skilled technicians are in dire need. Graduates of the MSU Northern Agricultural Mechanics program are typically offered multiple jobs for career choices. Undergraduate students are also typically offered multiple cooperative education opportunities which lead to increased student retention. Specialized technicians that possess a formal education, excellent work ethic, life-long learning skills, and the ability to adapt to change are in very short supply.

The overall recommendation is to GROW both the Agricultural Mechanics Technology A.A.S. and minor in Agricultural Mechanics Technology.