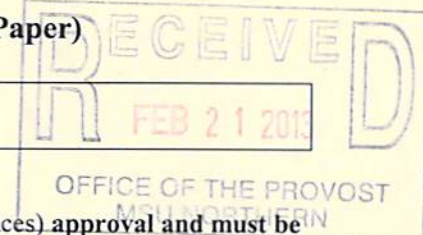


ACADEMIC SENATE PROPOSAL TRACKING SHEET
(Document To Be Originated By the Academic Senate Secretary On Canary Color Paper)

Proposal # 12-21	Title: ATDI/AUTO/DIESEL/AG MECH Program Revisions (Proposal explanation, submitter and college dean signatures on attached program/degree or course revision form.)
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All proposals MUST have their originating college faculty body (Ex. Arts & Sciences, Education and Nursing; Technical Sciences) approval and must be signed by the submitter and the college dean before being submitted to the Academic Senate Secretary.

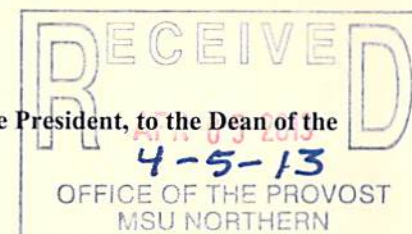
1. Submit all proposals (using the appropriate Academic Senate program/degree and/or course revision forms or General Education Inclusion form) to the Academic Senate Secretary. **NOTE: Level 1 or Level 2 forms must be submitted concurrent with this proposal where applicable. For Education proposals, PEU approval must be received prior to forwarding the proposal to the Senate.**
2. The Academic Senate Secretary logs and numbers items and forwards them to the appropriate Academic Senate subcommittee(s): General Education (if applicable), or Curriculum. A transmittal e-mail will be sent to the Recording Secretary of the receiving committee, cc Provost's Administrative Assistant, by the Academic Senate Secretary. A digital copy of the proposal will be linked on the Academic Senate Proposal page by the Academic Senate Secretary.
3. The Academic Senate subcommittee(s) consider(s) the proposal. If approved, the proposal is returned to the Academic Senate Secretary for forwarding to the next committee. If a committee disapproves the proposal, the originator may request that the item be forwarded to the next body for consideration. The committee will provide written rationale to the originator, via the Academic Senate, when a proposal is disapproved and the proposal is returned to the originator. Upon completion of committee action, the proposal will be returned to the Academic Senate Secretary, and a transmittal e-mail sent by the Committee Recorder to the Senate Secretary, cc Provost's Administrative Assistant.
4. The Academic Senate considers the proposal and recommends approval or disapproval. If approved, the proposal is forwarded to the Provost for consideration. If the Academic Senate disapproves the proposal, the originator may request that the item be forwarded to the Full Faculty for consideration, utilizing the procedures set forth in the Senate Bylaws. The Academic Senate will provide written rationale to the originator when proposals are disapproved and the proposal is returned to the originator.
5. Approved proposals will be forwarded to the Provost. The Provost approves or disapproves the proposal. If approved, the proposal is then forwarded to the Chancellor. From this point forward, the Provost's Administrative Assistant will update the Proposal page on the website by contacting the webmaster.
7. The Chancellor approves or disapproves the proposal.
8. The proposal will then either be implemented or referred to MSU for further action. The tracking page on the Provost site will be updated as required.

Subcommittee and Academic Senate college representatives will notify their respective colleges' of the progress of submitted proposals or the proposal may be tracked via the web page -- <http://www.msun.edu/admin/provost/senate/proposals.htm>

Documentation and forms for the curriculum process is also available on the web page:
<http://www.msun.edu/admin/provost/forms.htm>

******* (If a proposal is disapproved at any level, it is returned through the Academic Senate secretary and the Senate President, to the Dean of the submitting college who then notifies the originator.**

See back for tracking form



	Date	Action Taken	Signature	Date	Comments/Reason for Disapproval	Sent to	Date	Transmittal E-mail sent
*Abstract received by Senate Secretary		Copy to Senate President. Forward to Provost.						
*Provost		<input type="checkbox"/> Abstract Approved <input type="checkbox"/> Disapproved						
Received by Senate Secretary	12/06/12	Tracking form initiated	<i>Jouides Conner</i>	12-6-12		Curriculum	12-6-12	12-6-12
General Education Committee (if applicable)		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
Curriculum Committee (if applicable)	12-6-12	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<i>K. Williams</i>	1-16-13		Senate Sect'y	1-16-13	
Academic Senate	01-17-13	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<i>[Signature]</i>	2/14/13		Provost	2-21-13 2-15-13	2-15-13
Full Faculty (if necessary)		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<i>[Signature]</i>	4/9/13				
Provost	4-18-13	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<i>Matthew Jempletton</i>					
Chancellor	4-19-13	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	<i>JM Lundy</i>					
MSU		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
BOR		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
NWCCU		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
Provost		Advise originating college and Academic Senate of status. Update Web page.						
Registrar		Catalog/Policy Manual Update						

NOTE: The secretary of the Academic Senate will update the Academic Senate Proposal web page from initial receipt until the proposal reaches the Provost. The Provost's Administrative Assistant will ensure that the current status of each proposal is maintained on the Academic Senate Proposal web page from that point forward. *Abstract and pre-approval required for new programs ONLY.

MAY 23-24, 2013

ITEM #159-2801-0513

Item Name

Bachelor of Science in Diesel Technology

THAT

MSU-Northern requests permission to make course modifications to an existing bachelor's degree program in Diesel Technology.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the decrease of 1 credit in the Diesel Technology BS degree. MSUN requests that these modifications to the BS degree be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2801-R0513 Meeting Date: May 23 – 24, 2013
Institution: MSU-Northern CIP Code: _____
Program Title: Bachelor of Science in Diesel Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

- 1. Re-titling existing majors, minors, options and certificates
- 2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
- 3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
- 4. Departmental mergers and name changes
- 5. Program revisions (Submit with completed Curriculum Proposals Form)
- 6. Distance or online delivery of previously authorized degree or certificate programs
- 7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
- 8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
- 9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
LEVEL I REQUEST FORM

 B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

- 1. Options within an existing major or degree (Submit with completed Curriculum Proposals Form);
- 2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools *with the exception of the Colleges of Technology where changes require Board action* (Submit with completed Curriculum Proposals Form)
- 3. Consolidating existing programs and/or degrees (Submit with completed Curriculum Proposals Form)

 C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

 D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the

Montana Board of Regents
LEVEL I REQUEST FORM

decrease of 1 credit in the Diesel Technology BS degree. Northern requests that these modifications to the BS degree be approved.

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

1. BS degree in Diesel Technology – decreased from 121 to 120 semester credits
2. BS degree in Diesel Technology-Field Maintenance Option– decreased from 121 to 120 semester credits
3. BS degree in Diesel Technology-Equipment Management Option– decreased from 122 to 120 semester credits
4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents

CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
BS Automotive Technology (B03)	29	29	26	27	19	21
AAS Automotive Technology (B10) & AAS Automotive Technology-Fast Track (A55)	19	15	19	19	19	13
CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

- A. What is the connection between the proposed program and existing programs at the institution?**

These programs are a mainstay of technical training at MSU-Northern.

- B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.**

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

- C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).**

N/A

- D. How does the proposed program serve to advance the strategic goals of the institution?**

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

- E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.**

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

- A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.**

See attached program revision forms.

- B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.**

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013**ITEM #159-2802-0513****Item Name**

Bachelor of Science in Diesel Technology – Field Maintenance Option

THAT

MSU-Northern requests permission to make course modifications to an existing bachelor's degree program in Diesel Technology – Field Maintenance Option.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the decrease of 1 credit in the Diesel Technology – Field Maintenance, BS degree. MSUN requests that these modifications to the BS in Diesel Technology – Field Maintenance be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2802-R0513 Meeting Date: May 23 – 24, 2013

Institution: MSU-Northern CIP Code: _____

Program Title: Bachelor of Science in Diesel Technology – Field Maintenance Option

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

- 1. Re-titling existing majors, minors, options and certificates
- 2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
- 3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
- 4. Departmental mergers and name changes
- X 5. Program revisions (Submit with completed Curriculum Proposals Form)
- 6. Distance or online delivery of previously authorized degree or certificate programs
- 7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
- 8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
- 9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

PROGRAM/DEGREE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Diesel Technology Date 11/29/2012

Submitter Steven Don Dean Stephano Karl Date 4.2.2013

Signature

Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s).

A review by industry revealed that hours on task did not meet industry standards. Credit hour increases reflect industry standards per this recommendation.

Please provide in the space below a "before and after" picture of the program with the changes in the program noted. Attach appropriate Course Revision Forms. Please indicate changes by shading the appropriate cells.

PROPOSAL TITLE B.S. Diesel Technology – Field Maintenance Option

Current Program listed in 12-13 Catalog

Course Prefix	#	Course Title	Credits
ATDI	134	Auto/Diesel Electrical/Electronic Sys I	4
ATDI	264	Auto/Diesel Electrical/Electronic II	4
ATDI	265	Heating & Air Conditioning	4
ATDI	384	Auto/Diesel Electrical/Electronic III	4
ATDI	400	Shop Procedures	3
DIES	104	Intro to Diesel Engines	3
DIES	114	Intro to Diesel Engines Lab	3
DIES	115	Intro to Diesel Fuel Systems	4
DIES	204	Intro to Hydraulics & Pneumatics	2
DIES	214	Intro to Hydraulics & Pneumatics Lab	2
DIES	216	Heavy Duty Power Trains	4
DIES	262	Diesel Engine Diagnosis & Repair	2
DIES	272	Diagnosis of Diesel Engines Lab	4
DIES	314	Hydraulics & Pneumatics II	4
DIES	440	Advanced Fuel Systems	4
DIES	434	Current Model Year Technology	3
DIES	450	Diagnosis of Power Shifts & HD Auto	4
II	111	Industrial Safety & Waste Management	2
METL	155	Machining	3
WLDG	110	Welding Theory I	2
WLDG	111	Welding Theory I Practical	2
WLDG	114	Mig/Tig Welding	3
WLDG	180	Shielded Metal Arc Welding	3
WLDG	260	Repair & Maintenance Welding	3
WLDG	186	Welding Qual. Test Preparation w/Lab	3
WLDG	356	Weld Certification Procedures I	3
WLDG	357	Weld Certification Procedures II	3
		Advisor Approved elective	3
		General Education	33
M	145	4	
TSCI	304	3	
WRIT	101	3	
WRIT	350	3	
		Courses removed from program requirements	
		Total	121

Proposed Program for 13-14 Catalog

Course Prefix	#	Course Title	Gen-Ed Credits	Degree Credits
ATDI	134	Auto/Diesel Electrical/Electronic Sys I		6
ATDI	264	Auto/Diesel Electrical/Electronic II		6
ATDI	265	Heating & Air Conditioning		4
ATDI	384	Auto/Diesel Electrical/Electronic III		4
ATDI	400	Shop Procedures		3
DIES	104	Intro to Diesel Engines		3
DIES	114	Intro to Diesel Engines Lab		3
DIES	115	Intro to Diesel Fuel Systems		5
DIES	204	Intro to Hydraulics & Pneumatics		2
DIES	214	Intro to Hydraulics & Pneumatics Lab		2
DIES	216	Heavy Duty Power Trains		4
DIES	262	Diesel Engine Diagnosis & Repair		3
DIES	272	Diagnosis of Diesel Engines Lab		3
DIES	314	Hydraulics & Pneumatics II		4
DIES	440	Advanced Fuel Systems		4
DIES	434	Current Model Year Technology		3
DIES	450	Diagnosis of Power Shifts & HD Auto		4
DIES	498	Cooperative Education		2
METL	155	Machining		3
WLDG	110	Welding Theory I		2
WLDG	111	Welding Theory I Practical		2
WLDG	114	Mig/Tig Welding		3
WLDG	260	Repair & Maintenance Welding		3
WLDG	186	Welding Qual Test Prep. w/Lab		3
WLDG	356	Weld Cert. Procedures I		3
WLDG	357	Weld Cert Procedures II		3
		General Education	33	
		Program		87
		Credit changes highlighted in yellow		
		Total		120

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

NONE

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

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4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
BS Automotive Technology (B03)	29	29	26	27	19	21
AAS Automotive Technology (B10) & AAS Automotive Technology-Fast Track (A55)	19	15	19	19	19	13
CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

- A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

- B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

- C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

- D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

- E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

- A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

- B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

PROGRAM/DEGREE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____College COTS Program Area Diesel Technology Date 11/29/2012

Submitter _____ Dean _____ Date _____

Signature

Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s).*A review by industry revealed that hours on task did not meet industry standards. Credit hour increases reflect industry standards per this recommendation.***Please provide in the space below a "before and after" picture of the program with the changes in the program noted. Attach appropriate Course Revision Forms. Please indicate changes by shading the appropriate cells.**PROPOSAL TITLE B.S. Diesel Technology – Field Maintenance Option**Current Program listed
in 12-13 Catalog****Proposed Program
for 13-14 Catalog**

Course Prefix	#	Course Title	Credits
ATDI	134	Auto/Diesel Electrical/Electronic Sys I	4
ATDI	264	Auto/Diesel Electrical/Electronic II	4
ATDI	265	Heating & Air Conditioning	4
ATDI	384	Auto/Diesel Electrical/Electronic III	4
ATDI	400	Shop Procedures	2
DIES	104	Intro to Diesel Engines	3
DIES	114	Intro to Diesel Engines Lab	3
DIES	115	Intro to Diesel Fuel Systems	4
DIES	204	Intro to Hydraulics & Pneumatics	2
DIES	214	Intro to Hydraulics & Pneumatics Lab	2
DIES	216	Heavy Duty Power Trains	4
DIES	262	Diesel Engine Diagnosis & Repair	4
DIES	272	Diagnosis of Diesel Engines Lab	4
DIES	314	Hydraulics & Pneumatics II	4
DIES	440	Advanced Fuel Systems	4
DIES	434	Current Model Year Technology	3
DIES	450	Diagnosis of Power Shifts & HD Auto	4
DIES	498	Cooperative Education	6
IND	111	Industrial Safety & Waste Management	1
METL	155	Machining	3
WLDG	110	Welding Theory I	2
WLDG	111	Welding Theory I Practical	2
WLDG	114	Mig/Tig Welding	3
WLDG	180	Shielded Metal Arc Welding	3
WLDG	260	Repair & Maintenance Welding	3
WLDG	186	Welding Qual. Test Preparation w/Lab	3
WLDG	356	Weld Certification Procedures I	3
WLDG	357	Weld Certification Procedures II	3
		Advisor Approved elective	1
		General Education	33
M	145	Math	3
TSC	301	Technical Writing	3
WRIT	101	Writing	3
WRIT	350	Writing	3
		Courses removed from program requirements	
		Total	121

Course Prefix	#	Course Title	Gen-Ed Credits	Degree Credits
ATDI	134	Auto/Diesel Electrical/Electronic Sys I		6
ATDI	264	Auto/Diesel Electrical/Electronic II		6
ATDI	265	Heating & Air Conditioning		4
ATDI	384	Auto/Diesel Electrical/Electronic III		4
ATDI	400	Shop Procedures		3
DIES	104	Intro to Diesel Engines		3
DIES	114	Intro to Diesel Engines Lab		3
DIES	115	Intro to Diesel Fuel Systems		5
DIES	204	Intro to Hydraulics & Pneumatics		2
DIES	214	Intro to Hydraulics & Pneumatics Lab		2
DIES	216	Heavy Duty Power Trains		4
DIES	262	Diesel Engine Diagnosis & Repair		3
DIES	272	Diagnosis of Diesel Engines Lab		3
DIES	314	Hydraulics & Pneumatics II		4
DIES	440	Advanced Fuel Systems		4
DIES	434	Current Model Year Technology		3
DIES	450	Diagnosis of Power Shifts & HD Auto		4
DIES	498	Cooperative Education		2
METL	155	Machining		3
WLDG	110	Welding Theory I		2
WLDG	111	Welding Theory I Practical		2
WLDG	114	Mig/Tig Welding		3
WLDG	260	Repair & Maintenance Welding		3
WLDG	186	Welding Qual Test Prep. w/Lab		3
WLDG	356	Weld Cert. Procedures I		3
WLDG	357	Weld Cert Procedures II		3
		General Education	33	
		Program		87
		Credit changes highlighted in yellow		
		Total		120

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

none

MAY 23-24, 2013

ITEM #159-2803-0513

Item Name

Bachelor of Science in Diesel Technology – Equipment Management Option

THAT

MSU-Northern requests permission to make course modifications to an existing bachelor's degree program in Diesel Technology – Equipment Management Option.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the decrease of 2 credits in the Diesel Technology – Equipment Management, BS degree. MSUN requests that these modifications to the BS in Diesel Technology – Equipment Management Option be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2803-R0513 Meeting Date: May 23 – 24, 2013

Institution: MSU-Northern CIP Code: _____

Program Title: Bachelor of Science in Diesel Technology – Equipment Management option

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

- 1. Re-titling existing majors, minors, options and certificates**
- 2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)**
- 3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)**
- 4. Departmental mergers and name changes**
- 5. Program revisions (Submit with completed Curriculum Proposals Form)**
- 6. Distance or online delivery of previously authorized degree or certificate programs**
- 7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)**
- 8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)**
- 9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)**

Montana Board of Regents
LEVEL I REQUEST FORM

B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

1. Options within an existing major or degree (Submit with completed Curriculum Proposals Form);
2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools *with the exception of the Colleges of Technology where changes require Board action* (Submit with completed Curriculum Proposals Form)
3. Consolidating existing programs and/or degrees (Submit with completed Curriculum Proposals Form)

C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for several courses, and specifically for diesel, the electrical and introductory fuel systems. MSU-Northern also wishes to align the Equipment Management option with the 120 credit limit for a B.S. degree. These changes were accomplished by several course credit changes and realignment of courses. Northern requests that these modifications to the B.S. Diesel Technology – Equipment Management option degree be approved.

Montana Board of Regents
LEVEL I REQUEST FORM

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

1. BS degree in Diesel Technology – decreased from 121 to 120 semester credits
2. BS degree in Diesel Technology-Field Maintenance Option– decreased from 121 to 120 semester credits
3. BS degree in Diesel Technology-Equipment Management Option– decreased from 122 to 120 semester credits
4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
BS Automotive Technology (B03)	29	29	26	27	19	21
AAS Automotive Technology (B10) & AAS Automotive Technology-Fast Track (A55)	19	15	19	19	19	13
CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents

CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

- A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

- B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

- C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

- D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

- E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

- A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

- B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013**ITEM #159-2804-0513****Item Name**

Associate of Applied Science in Diesel Technology

THAT

MSU-Northern requests permission to make course modifications to an existing associate of applied science's degree program in Diesel Technology.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the increase of 2 credits in the AAS Diesel Technology degree. MSUN requests that these modifications to the AAS in Diesel Technology be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2804-R0513 Meeting Date: May 23 – 24, 2013
Institution: MSU-Northern CIP Code: _____
Program Title: Associate of Applied Science in Diesel Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

- 1. Re-titling existing majors, minors, options and certificates
- 2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
- 3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
- 4. Departmental mergers and name changes
- 5. Program revisions (Submit with completed Curriculum Proposals Form)
- 6. Distance or online delivery of previously authorized degree or certificate programs
- 7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
- 8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
- 9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

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Montana Board of Regents

CURRICULUM PROPOSALS

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Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
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Montana Board of Regents
CURRICULUM PROPOSALS

- B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.**

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N/A

- D. How does the proposed program serve to advance the strategic goals of the institution?**

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5. Program Details

- A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.**

See attached program revision forms.

- B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.**

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

Montana Board of Regents
CURRICULUM PROPOSALS

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2805-0513

Item Name

Minor in Diesel Technology

THAT

MSU-Northern requests permission to make course modifications to an existing minor in Diesel Technology.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the increase of 1 credit in the Diesel Technology minor. MSUN requests that these modifications to the minor in Diesel Technology be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2805-R0513 Meeting Date: May 23 – 24, 2013

Institution: MSU-Northern CIP Code: _____

Program Title: Minor in Diesel Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

1. Re-titling existing majors, minors, options and certificates
2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
4. Departmental mergers and name changes
5. Program revisions (Submit with completed Curriculum Proposals Form)
6. Distance or online delivery of previously authorized degree or certificate programs
7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
LEVEL I REQUEST FORM

B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

1. Options within an existing major or degree (Submit with completed Curriculum Proposals Form);

2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools with the exception of the Colleges of Technology where changes require Board action (Submit with completed Curriculum Proposals Form)

3. Consolidating existing programs and/or degrees (Submit with completed Curriculum Proposals Form)

C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in the

THE UNIVERSITY OF CHICAGO

PHILOSOPHY DEPARTMENT

PHILOSOPHY 101: INTRODUCTION TO PHILOSOPHY
Lecture 1: The Philosophy of Language

1.1 The Philosophy of Language
1.2 The Philosophy of Mind

1.3 The Philosophy of Action
1.4 The Philosophy of Law

1.5 The Philosophy of Science
1.6 The Philosophy of Mathematics

1.7 The Philosophy of History
1.8 The Philosophy of Art

1.9 The Philosophy of Religion
1.10 The Philosophy of Politics

1.11 The Philosophy of Education
1.12 The Philosophy of Health Care

1.13 The Philosophy of Environment
1.14 The Philosophy of Technology

Montana Board of Regents
LEVEL I REQUEST FORM

increase of the Minor in Diesel Technology increasing by 1 credit. Northern requests that these modifications to the minor be approved.

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

1. BS degree in Diesel Technology – decreased from 121 to 120 semester credits
2. BS degree in Diesel Technology-Field Maintenance Option– decreased from 121 to 120 semester credits
3. BS degree in Diesel Technology-Equipment Management Option– decreased from 122 to 120 semester credits
4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents

CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
BS Automotive Technology (B03)	29	29	26	27	19	21
AAS Automotive Technology (B10) & AAS Automotive Technology-Fast Track (A55)	19	15	19	19	19	13
CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

Montana Board of Regents
CURRICULUM PROPOSALS

- B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.**

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

- C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).**

N/A

- D. How does the proposed program serve to advance the strategic goals of the institution?**

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

- E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.**

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

- A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.**

See attached program revision forms.

- B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.**

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2806-0513

Item Name

Bachelor of Science in Automotive Technology

THAT

MSU-Northern requests permission to make course modifications to an existing Bachelor of Science in Automotive Technology.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in no credit hour changes in the Automotive Technology degree. MSUN requests that these modifications to the BS in Automotive Technology be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2806-R0513 Meeting Date: May 23 – 24, 2013
Institution: MSU-Northern CIP Code: _____
Program Title: Bachelor of Science in Automotive Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

- 1. Re-titling existing majors, minors, options and certificates**
- 2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)**
- 3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)**
- 4. Departmental mergers and name changes**
- 5. Program revisions (Submit with completed Curriculum Proposals Form)**
- 6. Distance or online delivery of previously authorized degree or certificate programs**
- 7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)**
- 8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)**
- 9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)**

Montana Board of Regents
LEVEL I REQUEST FORM

 B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

- 1. Options within an existing major or degree (Submit with completed Curriculum Proposals Form);
- 2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools *with the exception of the Colleges of Technology where changes require Board action* (Submit with completed Curriculum Proposals Form)
- 3. Consolidating existing programs and/or degrees (Submit with completed Curriculum Proposals Form)

 C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

 D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in no

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

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5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
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9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
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CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2807-0513

Item Name

Associate of Applied Science in Automotive Technology

THAT

MSU-Northern requests permission to make course modifications to an existing Associate of Applied Science in Automotive Technology

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in an increase in degree credit from 62 to 68. Credits. MSUN requests that these modifications to the AAS in Automotive Technology be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2807-R0513 Meeting Date: May 23 – 24, 2013
Institution: MSU-Northern CIP Code: _____
Program Title: Associate of Applied Science in Automotive Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

1. Re-titling existing majors, minors, options and certificates
2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
4. Departmental mergers and name changes
- X 5. Program revisions (Submit with completed Curriculum Proposals Form)
6. Distance or online delivery of previously authorized degree or certificate programs
7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
LEVEL I REQUEST FORM

 B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

- 1. Options within an existing major or degree** (*Submit with completed Curriculum Proposals Form*);
- 2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools with the exception of the Colleges of Technology where changes require Board action** (*Submit with completed Curriculum Proposals Form*)
- 3. Consolidating existing programs and/or degrees** (*Submit with completed Curriculum Proposals Form*)

 C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

 D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive Technology program at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several program changes that resulted in an increase in degree credits from 62 to 68. MSU-

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

1. BS degree in Diesel Technology – decreased from 121 to 120 semester credits
2. BS degree in Diesel Technology-Field Maintenance Option– decreased from 121 to 120 semester credits
3. BS degree in Diesel Technology-Equipment Management Option– decreased from 122 to 120 semester credits
4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
BS Automotive Technology (B03)	29	29	26	27	19	21
AAS Automotive Technology (B10) & AAS Automotive Technology-Fast Track (A55)	19	15	19	19	19	13
CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

- A. What is the connection between the proposed program and existing programs at the institution?**

These programs are a mainstay of technical training at MSU-Northern.

- B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.**

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

- C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).**

N/A

- D. How does the proposed program serve to advance the strategic goals of the institution?**

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

- E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.**

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

- A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.**

See attached program revision forms.

- B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.**

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2808-0513

Item Name

Associate of Applied Science in Automotive Technology – Fast Track

THAT

MSU-Northern requests permission to make course modifications to an existing Associate of Applied Science in Automotive Technology – Fast Track

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in no increase in degree credits. MSUN requests that these modifications to the AAS in Automotive Technology – Fast Track be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2808-R0513 Meeting Date: May 23 – 24, 2013

Institution: MSU-Northern CIP Code: _____

Program Title: Associate of Applied Science in Automotive Technology Fast Track

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

1. Re-titling existing majors, minors, options and certificates
2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
4. Departmental mergers and name changes
5. Program revisions (Submit with completed Curriculum Proposals Form)
6. Distance or online delivery of previously authorized degree or certificate programs
7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
LEVEL I REQUEST FORM

B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

___ 1. Options within an existing major or degree (Submit with completed Curriculum Proposals Form);

___ 2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools *with the exception of the Colleges of Technology where changes require Board action* (Submit with completed Curriculum Proposals Form)

___ 3. Consolidating existing programs and/or degrees (Submit with completed Curriculum Proposals Form)

C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive Technology program at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several program changes, which resulted in no credit hour changes in the degree. MSU-Northern requests that these modifications to the program be approved.

Montana Board of Regents
LEVEL I REQUEST FORM

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

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5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
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9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
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BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
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	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2809-0513

Item Name

Certificate of Applied Science in Automotive Technology

THAT

MSU-Northern requests permission to make course modifications to an existing Certificate of Applied Science in Automotive Technology

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in a one credit hour increase in the Certificate of Applied Science in Automotive Technology. MSUN requests that these modifications to the CAS in Automotive Technology be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2809-R0513 Meeting Date: May 23 – 24, 2013

Institution: MSU-Northern CIP Code: _____

Program Title: Certificate of Applied Science in Automotive Technology

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 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

- 1. Re-titling existing majors, minors, options and certificates
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- 7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
- 8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
- 9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
LEVEL I REQUEST FORM

B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

1. Options within an existing major or degree (Submit with completed Curriculum Proposals Form);

2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools with the exception of the Colleges of Technology where changes require Board action (Submit with completed Curriculum Proposals Form)

3. Consolidating existing programs and/or degrees (Submit with completed Curriculum Proposals Form)

C. Temporary Certificate or A.A.S. degree programs

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All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive Technology program at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. These changes were accomplished by several program changes and realignment of courses that resulted in an increase of 1 credit in the Certificate of Applied Science in Automotive Technology. MSU-Northern requests that these modifications to the program be approved.

Montana Board of Regents
LEVEL I REQUEST FORM

Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

1. BS degree in Diesel Technology – decreased from 121 to 120 semester credits
2. BS degree in Diesel Technology-Field Maintenance Option– decreased from 121 to 120 semester credits
3. BS degree in Diesel Technology-Equipment Management Option– decreased from 122 to 120 semester credits
4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
BS Automotive Technology (B03)	29	29	26	27	19	21
AAS Automotive Technology (B10) & AAS Automotive Technology-Fast Track (A55)	19	15	19	19	19	13
CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2810-0513

Item Name

Minor in Automotive Technology

THAT

MSU-Northern requests permission to make course modifications to an existing Minor in Automotive Technology

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in a one credit hour increase in the Minor in Automotive Technology. MSUN requests that these modifications to the Minor in Automotive Technology be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2810-R0513 Meeting Date: May 23 – 24, 2013
Institution: MSU-Northern CIP Code: _____
Program Title: Minor in Automotive Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

 A. Level I (place an X for all that apply):

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

1. Re-titling existing majors, minors, options and certificates
2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
4. Departmental mergers and name changes
- X 5. Program revisions (Submit with completed Curriculum Proposals Form)
6. Distance or online delivery of previously authorized degree or certificate programs
7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

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LEVEL I REQUEST FORM

approved.

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Montana Board of Regents
CURRICULUM PROPOSALS

1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

1. BS degree in Diesel Technology – decreased from 121 to 120 semester credits
2. BS degree in Diesel Technology-Field Maintenance Option– decreased from 121 to 120 semester credits
3. BS degree in Diesel Technology-Equipment Management Option– decreased from 122 to 120 semester credits
4. AAS degree in Diesel Technology– increased from 64 to 66 semester credits
5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
9. CAS in Automotive Technology – increased from 33 to 34 semester credits
10. Minor in Automotive Technology– increased from 28 to 29 semester credits
11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

Enrollment By Majors						
	200770	200870	200970	201070	201170	201270
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CAS Automotive Technology (C03)	0	1	2	0	1	2
BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
AAS Diesel Technology (A10)	26	28	28	41	58	58
BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

Montana Board of Regents
CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
Agriculture	A06/B01	Agriculture Mechanics Tech	1,202,500	16%
	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

MAY 23-24, 2013

ITEM #159-2811-0513

Item Name

Associate of Applied Science in Agriculture Mechanics Technology

THAT

MSU-Northern requests permission to make course modifications to an existing Associate of Applied Science in Agriculture Mechanics Technology.

EXPLANATION

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses which resulted in a five credit hours increase in the Associate of Applied Science in Agriculture Mechanics Technology. MSUN requests that these modifications to the AAS degree be approved.

ATTACHMENTS

Level I Request Form; Curriculum Proposal Form; and Program/Degree Revision Form

Montana Board of Regents
LEVEL I REQUEST FORM

Item Number: 159-2811-R0513 Meeting Date: May 23 – 24, 2013

Institution: MSU-Northern CIP Code: _____

Program Title: Associate of Applied Science in Agriculture Mechanics Technology

Level I proposals are those that may be approved by the Commissioner of Higher Education or the Commissioner's designee. The approval of such proposals will be conveyed to the Board of Regents at the next regular meeting of the Board. The institution must file the request with the Office of the Commissioner of Higher Education by means of a memo to the Deputy Commissioner for Academic and Student Affairs, by no later than five weeks prior to the final posting date for the next scheduled meeting of the Board. The Deputy Commissioner will review the proposal and respond to the proposing campus with any questions or concerns within one week, allowing the proposing campus one week to respond before the Item is posted for the BOR scheduled meeting.

X **A. Level I (place an X for all that apply):**

Level I proposals include campus initiatives typically characterized by (a) minimal costs; (b) clear adherence to approved campus mission; and (c) the absence of significant programmatic impact on other institutions within the Montana University System and Community Colleges. For Level I actions on degree programs or certificates, the process must begin when the proposing campus posts its intent on the MUS academic planning web site.

1. Re-titling existing majors, minors, options and certificates
2. Adding new minors or certificates where there is a major (Submit with completed Curriculum Proposals Form)
3. Adding new minors or certificates where there is an option in a major (Submit with completed Curriculum Proposals Form)
4. Departmental mergers and name changes
5. Program revisions (Submit with completed Curriculum Proposals Form)
6. Distance or online delivery of previously authorized degree or certificate programs
7. Placement of program into moratorium (No Program Termination Checklist at this time – document steps taken to notify students, faculty, and other constituents and include this information on checklist at time of termination if not reinstated)
8. Filing Notice of Intent to Terminate/Withdraw existing majors, minors, options, and certificates (No Program Termination Checklist at this time)
9. Terminate/withdraw existing majors, minors, options, and certificates (Submit with completed Program Termination Checklist)

Montana Board of Regents
LEVEL I REQUEST FORM

 B. Level I with Level II documentation:

With Level II documentation circulated to all campus chief academic officers in advance, the Deputy Commissioner or designee may propose additional items for inclusion in the Level I process. For these items to move forward, the Deputy Commissioner or designee must reach consensus with the chief academic officers. When consensus is not achieved, the Deputy Commissioner or designee will move the item to the Level II review process.

1. Options within an existing major or degree (*Submit with completed Curriculum Proposals Form*);
2. Eliminating organizational units within larger institutions such as departments, divisions and colleges or schools *with the exception of the Colleges of Technology where changes require Board action* (*Submit with completed Curriculum Proposals Form*)
3. Consolidating existing programs and/or degrees (*Submit with completed Curriculum Proposals Form*)

 C. Temporary Certificate or A.A.S. degree programs

Certificate or Associate of Applied Science Degree Programs may be submitted as Level I proposals, with memo and backup documentation, when they are offered in cooperation with and /or at the request of private or public sector partners and the decision point to offer the program is not consistent with the regular Board of Regents program approval process. Level I approval for programs under this provision will be limited to two years. Continuation of a program beyond the two years will require the normal program approval process as Level II Proposals.

All other Level I Certificate or Associate Degree programs may be placed on submission at any Board of Regents meeting. They will be placed on action agendas at subsequent meetings. All campuses agree to insure that all other campuses receive program information well in advance of submission.

 D. Campus Certificates

Although certificate programs of 29 credits or fewer may be implemented by the individual campuses without approval by the board of regents, those certificates do need to be reported to the office of the commissioner of higher education and listed on the Montana University System's official degree and program inventory. These Level I proposals will be listed as information items at the next regular meeting of the board.

Specify Request:

The Automotive and Diesel Technology programs at MSU-Northern recently went through a comprehensive industry review of courses, student learning outcomes and industry expectations and standards. Based on this review, a strong recommendation from industry was to increase the amount of time spent in lab for electrical, manual power trains, braking systems, diesel fuel systems and steering and suspension. In addition it was requested that automotive majors actually perform a remove and repair operation on an automatic transmission. These changes were accomplished by several course credit changes and realignment of courses

Montana Board of Regents
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which resulted in the increase of 5 credits in the AAS in Agriculture Mechanics Technology. Northern requests that these modifications to the degree be approved.

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1. Overview

After a review by Automotive industry partners, some program modifications were deemed necessary to maintain the certification by industry. These modifications include additional lab time in a few critical technical areas. After review by program faculty these time-on-task changes resulted modifying the number of semester credits for a handful of courses leading to a modest increase in AAS, CAS and Minor programs.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Based on feedback from industry partners, the faculty teaching Automotive, Diesel and Ag-Mechanics technology courses determined that additional 'time-on-task' was required for electrical, manual power trains, braking systems, steering and suspension and diesel fuel systems. In addition, an additional hands-on task requiring the removal, repair and reinstallation of an automatic transmission was indicated for automotive degree students. These changes to the courses decreased or increased the number of credits in some courses, requiring some minor adjustments to the degree programs. These changes included dropping and realigning courses to meet the needs of industry and accreditation standards. As a result, the BS degrees either decreased or remained unchanged in credits, but the AAS, CAS, and minors in Diesel, Auto, and Ag Mechanics will have some increases in the total number of credits. However, the AAS degree in Automotive Technology (Fast Track) has remained unchanged. Specifically the following existing degrees, certificates, and minors are requesting to be modified:

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5. Minor in Diesel Technology– increased from 24 to 25 semester credits
6. BS degree in Automotive Technology – No changes—program at 120 semester credits
7. AAS degree in Automotive Technology – increased from 62 to 68 semester credits
8. AAS degree in Automotive Technology (Fast Track) – No change program at 62 semester credits
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11. AAS degree in Agriculture Mechanics – increased from 66 to 71 semester credits

3. Need

A. To what specific need is the institution responding in developing the proposed program?

The institution has close ties with industry through Ford MLR program, as well as NATEF certification. After an accreditation review by industry representatives, it was determined that

Montana Board of Regents
CURRICULUM PROPOSALS

additional time-on-task would be required to maintain the level of training recognized by these industries. The institution is responding to these industry standards.

B. How will students and any other affected constituencies be served by the proposed program?

The program and course modifications are in place and while students are required to spend additional time working on hands-on exercises, they are better served by the ability to complete industry recognized training sequences.

C. What is the anticipated demand for the program? How was this determined?

The Mechanical technology programs at MSU-Northern are strong and the outlook continues to be so. These minor changes to the curriculum serve to strengthen the programs. See below for enrollment by majors of existing programs. The chart below does not include the minors in diesel and automotive areas.

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BS Diesel Technology (B05), Field Maintenance (B06), Equipment Management (B92) (3 degrees)	58	67	88	93	95	115
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BS Agriculture Mechanics Tech. (B01)	0	0	0	0	0	1
AAS Agriculture Mechanics Tech. (A06)	1	0	1	7	9	12

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CURRICULUM PROPOSALS

State and National Demand Current as of 2012				
Area of Education	Major Code	Program Description	Occupational Outlook	Job Growth Rate
			Number of Jobs 2010	Number of Jobs 2010-2020
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	A07	Agriculture Technology		10%
	B04	Agriculture Operations Tech		-8%
Automotive Technology	A08	Automotive Technology	723,400	17%
	A55	Automotive Tech Fast Track		
	B03	Automotive Technology		
	C03	Automotive Technology		
Diesel Technology	A10	Diesel Technology	242,200	15%
	B05	Diesel Technology		
	B06	Diesel Technology Field Maint.		5%

Montana Board of Regents
CURRICULUM PROPOSALS

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

These programs are a mainstay of technical training at MSU-Northern.

B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Since no new program is being proposed, the changes listed above are the only programs affected by these program modifications.

C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

N/A

D. How does the proposed program serve to advance the strategic goals of the institution?

Enrollment in these programs and the strong industry relationships continue to establish MSU-Northern with industry partners and a 100% placement rate from these programs.

E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The proposed changes are industry standards – any other programs that are similar will be required by industry to meet these standards if they have not already done so.

5. Program Details

A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

See attached program revision forms.

B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

These minor changes have already been implemented using temporary changes to the program scheduling. This request seeks to formalize and make permanent the changes.

Montana Board of Regents
CURRICULUM PROPOSALS

6. Resources

- A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.**

N/A

- B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.**

This proposal changes some courses but does not change the curriculum in any substantive way. We continue planning efforts to support the mechanical technology programs at Northern, but these changes do not change the needs for resources.

7. Assessment

How will the success of the program be measured?

The ongoing campus-wide assessment program and external review by industry and NATEF will identify success.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

The ATDI faculty spent two years developing a strategic plan for sustaining growth in the Automotive, Diesel and Ag-Mechanics programs. These plans (including credit decreases and increases are the topic of this request) were presented to administration numerous times before being allowed to proceed with changes. The program package was developed by program faculty, reviewed by the College of Technical Sciences (COTS) faculty, and approved for submission to the campus curriculum process. After approval by the Dean of the COTS, the proposal was reviewed by the Curriculum and General Education sub-committees of the Academic Senate, and finally approved by the Academic Senate. They were submitted to the Provost and Chancellor of MSUN and were granted final approval. This curriculum proposal is a part of that approval process.

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION X FOR INFORMATION ONLY _____

College COTS Program Area Auto/Diesel Date 11/29/2012

Submitter  Dean  Date 12.5.2012
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
Increase credits based on recommendation by Industry Advisors/standards

Please provide the following information:

College: COTS
Program Area: Auto/Diesel
Date: 2/27/2012
Course Prefix & No.: ATDI 134

Course Title: Auto/Diesel Electrical/Electronic Systems I
Credits: 6

Required by: Agricultural Mechanics Technology AAS
Agricultural Mechanics Technology Minor
Agricultural Mechanics Technology Certificate
Agricultural Operations Technology BS
Automotive Technology Minor
Diesel Technology BS
Diesel Technology AAS
Diesel Technology Field Maintenance Option BS
Diesel Technology Equipment Management Option BS
Automotive Technology Certificate
Automotive Technology AAS
Automotive Technology BS

Selective in: Agricultural Technology AAS
Elective in:
General Education:

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab: 6

Current Catalog Description (include all prerequisites):

A beginning course in the study of electrical/electronic fundamentals applied to automotive and commercial vehicle systems. Includes theory, design, diagnosis, and repair of wiring and circuits, batteries, alternators, and starters. The use of test instruments and electrical troubleshooting manuals currently recommended by industry will be emphasized. **Course Fee: \$20.00**

Proposed or New Catalog Description (include all prerequisites):

A beginning course in the study of electrical/electronic fundamentals applied to mobile and transportation technology. The course will create the foundation of electrical systems and will include theory, design, diagnosis, and repair of wiring and circuits, batteries, alternators, starters

and electrical accessory circuits. The use of test instruments and electrical troubleshooting manuals currently recommended by industry will be emphasized. Course fee: \$20.00

Course Outcome Objectives:

General Electrical System Diagnosis

- Complete work order to include customer information, vehicle information, vehicle identifying information, customer concern, related service history, cause, and correction
- Identify and interpret electrical/electronic system concern: determine necessary action
- Research applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions and TSB's
- Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels and calibration labels)
- Diagnose electrical/electronic integrity for series, parallel and series-parallel circuits using principles of electricity (Ohm's law)
- Use wiring diagrams during diagnosis of electrical circuit problems
- Demonstrate the proper use of a digital multi-meter (DMM) during diagnosis of electrical circuit problems, including: source voltage, voltage drop, current flow, and resistance.
- Check electrical circuits with a test light, determine necessary action
- Check electrical/electronic circuit waveforms; interpret readings and determine needed repairs.
- Check electrical circuits using fused jumper wires; determine necessary action
- Locate shorts, opens, and resistance problems in electrical/electronic circuits; determine necessary action
- Measure and diagnose the cause(s) of excessive parasitic draw; determine necessary action
- Inspect and test fusible links, circuit breakers, and fuses; determine necessary action
- Inspect and test switches, connectors, relays, solid state devices and wires of electrical/electronic circuits; perform necessary action
- Remove and replace terminal end from connector; replace connectors and terminal ends.
- Repair wiring harnesses (including CAN/BUS system).
- Perform solder repair of electrical wiring
- Identify location of hybrid vehicle high voltage circuit disconnect (service plug) location and safety procedures

Battery Diagnosis and Service

- Perform battery state-of-charge test; determine necessary action
- Perform battery capacity test; confirm proper battery capacity for vehicle application; determine necessary action
- Maintain or restore electronic memory functions
- Inspect, clean, fill and/or replace battery, battery cables, connectors, clamps, and hold-downs
- Perform battery charge
- Start a vehicle using jumper cables and a battery or auxiliary power
- Identify high voltage circuits of electric or hybrid electric vehicle and related safety precautions.
- Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry following battery disconnect.
- Identify hybrid vehicle auxiliary (12V) battery service, repair and test procedures.

Starting System Diagnosis and Repair

- Perform starter current draw tests; determine necessary action
- Perform starter circuit voltage drop tests; determine necessary action
- Inspect and test starter relays and solenoids; determine necessary action
- Remove and install starter in vehicle.
- Inspect and test switches, connectors and wires of starter control circuits; perform necessary action
- Determine between electrical and engine mechanical problems that cause a slow-crank or no-crank condition

Charging System Diagnosis and Repair

- Perform charging system output test; determine necessary action
- Diagnose charging system for the cause of undercharge, no-charge, and overcharge conditions
- Inspect, adjust or replace generator (alternator) drive belts, pulleys and tensioners; check pulley alignment and belt alignment
- Remove, inspect and install generator (alternator).

- Perform charging system circuit voltage drop test; determine necessary action

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Updated 11/29/2012

COURSE REVISION FORM

NEW XX DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive/Diesel Date 11/29/2012

Submitter: K Johnson Dean: August O. King Date 12-5-2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry and NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive/Diesel

Date: 3/27/2012

Course Prefix & No.: ATDI 2XX

Course Title: Automatics R & R (remove and replace)

Credits: 1

Required by:

Automotive Technology Associate of Applied Science Degree
Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab:

Gradable Lab: X

Contact hours lecture:

Contact hours lab: 2

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):

A course in Automatic Transmissions designed to Remove and Install selected automatic transmissions or transaxles from a vehicle. Students will learn to adjust, diagnose, and test for proper operation and also correct industry troubleshooting procedures.

Course Outcome Objectives:

Students will Remove and Install a front wheel drive and a rear wheel drive automatic transmission or transaxles from a vehicle. Students will learn to adjust, diagnose, and test for proper operation and also correct industry troubleshooting procedures.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

none

Montana State University - Northern
College of Technical Sciences

ATDI 291 – AUTOMATICS

COURSE SYLLABUS – FALL 2012

INSTRUCTOR: Charles J Siegel
Office: Brockman Center 210Q
Office Hours: M-Th 2:00–3:00pm by appointment, &
F should be available, or by appointment
Office Phone: 265-4162 Email: charles.siegel@msun.edu
Mailing Address: 300 11th St. West, P. O. Box 7751, Havre, MT 59501

COURSE DESCRIPTION:

MSU-Northern 2011 – 2012 Catalog
1 semester credits

A course in Automatic Transmissions designed to Remove and Install selected automatic transmissions or transaxles from a vehicle. Learn to adjust, diagnose, test for proper operation, & troubleshooting procedures.

CLASS MEETING TIMES:

NOTE: This course MUST be taken with ATDI257, Mandatory for Automotive students Lab Hours!

NOTE: This course is an additional NATEF requirement for Automotive Students. Diesel students may take the course but is NOT required by COTS policy & requirements

Lab: Will add (1) extra hour of Lab – time to be arranged with Auto Students for Trans R&R work

Auto ATDI291 students: Lab time will be arranged with student & faculty schedules.

TEXTBOOKS:

Birch, T. and Rockwood, C., (2010), *Automatic Transmissions and Transaxles - Fourth Edition*.
Upper Saddle River, NJ: Pearson Prentice Hall

COURSE OBJECTIVES:

As per NATEF (National Automotive Technicians Education Foundation) guidelines – see pages 3 – 4.

COURSE OUTCOMES:

Students will understand basic theory and operation of automatic transmissions and transaxles. Students will be able to identify hydraulic, mechanical, and electrical components of automatic transmissions, and describe their functions and operation. Students will be able to work through power flow of various transmissions and will learn the required skills to appropriately diagnose and repair automatic transmissions with the correct tool usage, following proper shop safety procedures.

COURSE POLICIES:

Attendance:

Students are required and encouraged to attend all classes and labs. This class will be treated as a “job situation”. Should circumstances arise that prevent you from being present for a class, notify the instructor (email, phone call, etc.) at the earliest possible date and special arrangements *may* be made.

Tests and Quizzes:

All tests and quizzes will be taken on the date and time assigned. Make-up tests or quizzes *may* be allowed if *prior* arrangements have been made with the instructor. This does not apply to daily “pop-quizzes”.

Written Assignments:

All paperwork and assignments submitted will be computer-generated (MS Word, MS Excel, etc), professional, and submitted on time with an appropriate header (an example is provided on the last page of this syllabus). Some paperwork will be required to be hand-written (e.g. lab sheets); such paperwork must be legible. If I cannot read your writing, your grade will be a zero. Some assignments will be completed electronically, via the Internet. These will also be completed in MS Word, Excel, etc.

Please Note: Late assignments will NOT be accepted.

Disability Statement:

All students attending MSU-northern are entitled to equal access to academic programs and services. By federal law, students with documented disabilities are entitled to reasonable accommodations in order to fully participate in the student experience. Students with disabilities are encouraged to advocate for themselves to the extent possible, and Disability services provides support and assistance in determining what accommodations are best suited to each individual. It is recommended and encouraged that students contact their professor within the first two weeks of class.

To be eligible for these special services students with disabilities must provide the required documentation. For more information and to register with Disability Services, please contact the Assistant Dean of Students in Cowan Hall 213.

Academic Misconduct:

Refer to the Student Handbook, which can be found at <http://www.msun.edu/admin/policies/601-2.htm> Descriptions, examples, and sanctions of and for academic misconduct are outlined in this section. Any violation by students of university policies regarding academic misconduct (which includes cheating, plagiarism, fabrication, or misrepresentation), or personal misconduct may result in failure of the course.

Student Behavior:

Profanity will **NOT** be tolerated at any time. Students will act and behave in a professional manner. Students will adhere to strict safety guidelines. Safety glasses and coveralls will be worn at all times in the shop during class. Cell phones, beepers and pagers may **NOT** be used at any time during lecture or lab - turn them off before coming to class.

STUDENT RESPONSIBILITIES:

Students are expected to come to class having completed requisite reading and assigned work. Students are expected to turn in required assignments on or before the due date. Students are expected to participate in class discussions and to work together in any paired or group exercises. What you, as students, gain from the course is proportional to what you put into the course. This is reflected by in-class activities, and assignments, reading, etc completed outside of class.

GRADING:

The final grade will be computed from the following:

Section test 1 -	5% of final grade
Section test 2 -	5% of final grade
Section test 3 -	5% of final grade
Comprehensive final -	10% of final grade
Quizzes -	10% of final grade
Assignments -	10% of final grade
Portfolio -	5% of final grade
Lab work -	50% of final grade
TOTAL -	100%

PLEASE NOTE:

Every 5 tardies will drop final grade by one full letter grade

Every 4 absences will drop final grade by one full letter grade

Only 3 excused absences will be permitted during the semester

Letter grades will be assigned as follows:

A: 92 - 100	A-: 90 - 91	
B+: 88 - 89	B: 82 - 87	B-: 80 - 81
C+: 78 - 79	C: 72 - 77	C-: 70 - 71
D+: 68 - 69	D: 62 - 67	D-: 60 - 61
		F: below 60

Final comprehensive exam will be during Finals Week (Dec 10nd - 14th, 2012), after which grades will be available online.

Portfolios will be due on December 4th 2012 lecture period of the semester. Guidelines are set forth on page of this syllabus.

EXTRA CREDIT:

Extra credit points may be awarded for the following:

- > Job Interviews
- > Reaction papers (from attending employer presentations)
- > SkillsUSA club participation

Note: In order to obtain extra credit points for these items, they must be received prior to November 19th, 2012.

LAB REQUIREMENTS:

Students will follow strict safety rules and guidelines at all times while working in the lab. Lab work will not be credited until your instructor has checked you off on your requirements. Lab grade will include the following areas: neatness, organization of work, pride in workmanship, use of manuals, time management, care & use of tools, general attitude, attendance, use of safety equipment (glasses, cover-alls, and proper foot wear).

NOTE: EYE PROTECTION WILL BE WORN AT ALL TIMES IN THE LAB. – CLASSROOM LAB OR OTHERWISE

>----- NO EXECPTIONS -----<

WE ARE PROFESSIONALS!!

NOTE: REGULAR PRESCRIPTION EYEGLASSES DO NOT CONSTITUTE EYE PROTECTION; SAFETY GLASSES MUST BE WORN OVER PRESCRIPTION EYEWEAR.

Labs will include (but are not limited to):

- Remove and install one automatic transmission or transaxle (either on a school vehicle or a live job).
- Perform automatic transmission pressure tests (minimum of 1 will be required).
- Adjust throttle cable (minimum of 1 will be required).
- Adjust manual lever position sensor (minimum of 1 will be required).
- **NO** personal transmission units worked on w/o instructor permission, & 700R4 completed & proper Dyno Run

Due to vehicle and equipment restrictions, students will be required to rotate through each requirement as space opens up. It will be the students' responsibility to properly manage their time and tasks in order to complete each of the lab objectives as they become available, so stay busy, stay on task, and stay productive. Communication with each other and your instructor will ensure an efficient lab. Other lab tasks may be available and/or required and will be assessed on an individual basis.

In addition to the above reading requirements, the 700R4 transmission and THM 125C (3T40) transaxle will be thoroughly covered, studied, and tested on throughout the course of the semester.

TOOL REQUIREMENTS:

- Eye and ear protection
- Clean coveralls (no shop coats permitted, no bib-type coveralls permitted)
- Leather footwear (preferably leather work boots, no open toed shoes or sandals permitted)
- Basic hand tool set – sockets, wrenches, pliers, screwdrivers, hammers, etc.

COURSE OBJECTIVES (AS PER NATEF REQUIREMENTS)

(NATEF = National Automotive Technicians Education Foundation)

II. AUTOMATIC TRANSMISSION AND TRANSAXLE**A. Transmission In-Vehicle R&R – Auto Students Only {1 extra lab hour - NATEF req.}**

1. Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.
2. Identify and interpret transmission/transaxle concern; differentiate between engine performance and transmission/transaxle concerns; determine necessary action.
3. Research applicable vehicle and service information, such as transmission/transaxle system operation, fluid type, vehicle service history, service precautions, and technical service bulletins.
4. Locate and interpret vehicle and major component identification numbers.
5. AUTO Students will R&R RWD transmission per ALL-DATA R&R procedures.
6. During R&R of transmission and torque converter; inspect engine core plugs, rear crankshaft seal, dowel pins, dowel pin holes, and mating surfaces.
7. R&R torque converter and properly index torque converter.
8. Carefully check for proper fluid level & ensure unit is LEAK FREE.

9. Inspect, adjust manual valve/shift linkage, transmission range sensor/switch, and park/neutral position switch.
10. Inspect, replace, and align powertrain mounts.
11. Road Test (with Instructor Notification & approval) – In Northern Parking Lots ONLY, **NO DRIVING ON HAVRE Public Streets**, Per COTS policy & State Law. *Students who break this Policy WILL receive academic disciplinary action(s) that could lead to student suspension or termination!*

Student Assignment

NOTE: ALL written assignments, homework, etc.. (except Portfolio) is due via email to your Instructor – sent to charles.siegel@msun.edu – and done in a word processing format Such as MS Word, or other easily readable desktop publishing format!
>--NO HAND WRITTEN WORK WILL BE ACCEPTED--<
>--Use the format below for written assignments & homework--<

List Your Name Here
ATDI 257 – Automatic Transmissions
Charles Siegel
List Date Here
List Assignment Here

1. Answer
2. Answer
3. etc.

COURSE REVISION FORM

NEW ___ DROPPED XX MAJOR REVISION ___ FOR INFORMATION ONLY ___

College COTS Program Area Automotive Date 11/29/2012

Submitter Kevin Johnson Chair/Dean Gregory O. King Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Dropping course to accommodate credit increases in Auto CAS, AAS and BS.

College: College of Technical Sciences

Program Area: Automotive

Date: 06-2002

Course Prefix & No.: ATDI 220

Course Title: Auto/Diesel and Hybrid Vehicles

Credits: 3

Required by: Automotive Technology Bachelor of Science Degree
Automotive Technology Associate of Applied Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

Course Outcome Objectives:

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Review Date: 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION X FOR INFORMATION ONLY _____

College COTS Program Area Auto/Diesel Date 11/29/12

Submitter Wane Bryman Dean Gregory O. King Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
Increase credits based on recommendation by Industry Advisors/standards

Please provide the following information:

College: COTS
Program Area: Auto/Diesel
Date: 2/27/2012
Course Prefix & No.: ATDI 264

Course Title: Auto/Diesel Electrical/Electronic Systems II
Credits: 6

Required by: Agricultural Mechanics Technology AAS
Automotive Technology Minor
Diesel Technology BS
Diesel Technology AAS
Diesel Technology Field Maintenance Option BS
Diesel Technology Equipment Management Option BS
Automotive Technology AAS
Automotive Technology BS

Selective in:
Elective in:
General Education:

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course is a continuation of the study of electrical/electronic systems in use on current automotive and heavy equipment. The course will study industry recommended diagnostic and repair procedures, charging and cranking systems, ignition systems, power accessories, and an introduction to microprocessor-based engine, powertrains, and brake/suspension control systems. Students will fulfill communication requirements for certificate of applied science and associate of applied science by completing the course. Prerequisite: ATDI 134. Course Fee: \$20.00

Proposed or New Catalog Description (include all prerequisites):

This course is a continuation of the study of electrical/electronic systems in use on current automotive and heavy equipment. The course will study industry recommended diagnostic and repair procedures on systems including charging and cranking systems, ignition systems, power accessories, networking systems and microprocessor-based engine, powertrains, and brake/suspension control systems. Students will fulfill communication requirements for the

Certificate of Applied Science and Associate of Applied Science by completing the course.
Prerequisite: ATDI 134. **Course Fee: \$20.00**

Course Outcome Objectives:

- Use wiring diagrams during diagnosis of electrical circuit problems.
- Check electrical circuits with a test light; determine needed repairs.
- Check voltage and voltage drop in electrical/electronic circuits using a digital multimeter (DMM); determine needed repairs.
- Check current flow in electrical/electronic circuits and components using an ammeter; determine needed repairs.
- Check electrical circuits using jumper wires; determine needed repairs.
- Find shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine needed repairs.
- Measure and diagnose the cause(s) of abnormal key-off battery drain; determine needed repairs.
- Inspect and test fusible links, circuit breakers, and fuses; replace as needed.
- Inspect and test switches, connectors, relays, and wires of electrical/electronic circuits; repair or replace as needed.
- Perform battery state-of-charge test; determine needed service.
- Perform battery capacity (load, high-rate discharge) test; determine needed service.
- Maintain or restore electronic memory functions.
- Inspect, clean, fill, and replace battery.
- Perform slow/fast battery charge.
- Inspect and clean battery cables, connectors, clamps, and hold-downs; repair or replace as needed.
- Start a vehicle using jumper cables and a battery or auxiliary power supply.
- Perform starter current draw and circuit voltage drop test; determine needed repairs.
- Inspect and test starter relays and solenoids; replace as needed.
- Remove and replace/reinstall starter.
- Perform starter bench tests; determine needed repairs.
- Inspect, test, and repair or replace switches, connectors, and wires of starter control circuits.
- Disassemble, clean, inspect, and test starter components; replace as needed.
- Diagnose charging system problems that cause an undercharge, a no-charge or an overcharge condition.
- Inspect and adjust alternator drive belt; replace as needed.
- Inspect and test voltage regulator; replace as needed.
- Remove, inspect, and replace/reinstall alternator.
- Disassemble, clean, inspect, and test alternator components; replace as needed.
- Perform charging circuit voltage drop tests; determine needed repairs.
- Diagnose brighter than normal, intermittent, dim or no light operation.
- Inspect, replace, and aim headlights and bulbs.
- Inspect and diagnose incorrect turn signal or hazard light operation; repair or replace as needed.
- Diagnose intermittent, high, low or no gauge readings.
- Test gauge circuit voltage regulators (limiters); replace as needed.
- Inspect and test connectors, wires, and printed circuit boards of gauge circuits; repair or replace as needed.
- Diagnose incorrect operation of warning devices and other driver information systems.
- Diagnose intermittent, high, low, or no readings on electronic instrument clusters.
- Inspect and test sensors, sending units, connectors, and wires of electronic instrument circuits; repair or replace as needed.
- Diagnose incorrect horn operation; repair as needed.

- Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; repair as needed.
- Diagnose incorrect windshield washer operation; repair as needed.
- Diagnose incorrect operation of motor-driven accessory circuits; repair as needed.
- Diagnose incorrect heated glass operation; repair as needed.
- Diagnose incorrect electric door and hatch/trunk lock operation; repair as needed.
- Diagnose incorrect operation of cruise control systems; repair as needed.
- Diagnose supplemental restraint system (SRS) problems; repair as needed. (Note: Follow manufacturer's safety procedures to prevent accidental deployment.)
- Diagnose and troubleshoot vehicle networking systems; repair as needed.
- Inspect and test sensors for engine management and chassis systems; repair as needed.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Updated 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED XX MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 2/27/2012

Submitter Kevin Johnson Dean Henry D. King Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Redesign of Auto Curriculum per recommendations by industry

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive

Date: 2/27/2012

Course Prefix & No.: AUTO 115

Course Title: Introduction to Automotive Services

Credits: 1

Required by: Automotive Technology Minor
Automotive Technology Certificate
Automotive Technology Associate of Applied Science Degree
Automotive Technology BS

Selective in:

Elective in:

General Education:

Lecture: X

Lecture/Lab:

Gradable Lab:

Contact hours lecture: 1

Contact hours lab:

Current Catalog Description (include all prerequisites):

An introductory course designed to assist the novice automotive technician in adjusting to the demands of an automotive service facility. This course will expose the student to the flat rate method of shop pay as well as focus on many customer concerns. The student will experience the most effective method when dealing with customer service while demonstrating correct dealer etiquette.

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Upon completing this course the student will have the ability to properly communicate automotive technology to customers and present a professional image of their employer.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION X FOR INFORMATION ONLY _____

College COTS Program Area Auto Date 11/29/12

Submitter W. Wayne Boyman Dean Therapy D. King Date 12.5.2012
Signature Signature (indicates college level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
Increase credits based on recommendation by Industry Advisors/standards

Please provide the following information:

College: COTS
Program Area: Auto/Diesel
Date: 2/27/2012
Course Prefix & No.: AUTO 117

Course Title: Automotive Manual Power Trains
Credits: 5

Required by:

Automotive Technology Minor
Automotive Technology Certificate
Automotive Technology AAS
Automotive Technology BS

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 2

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course examines automotive manual power trains. It includes the construction, maintenance, diagnosis, and repair of manual transmissions and transaxles, transfer cases, rear axles, drive shafts, and clutches. Driveline angles and Noise, Vibration and Harshness (NVH) will be discussed. Lab application of service procedures is included. Course Fee: \$20.00

Proposed or New Catalog Description (include all prerequisites):

This course examines automotive manual power trains. It includes the construction, maintenance, diagnosis, and repair of manual transmissions and transaxles, transfer cases, front and rear axles, drive shafts, and clutches. Troubleshooting relating to powertrain noise, vibration and harshness (NVH) will be integrated, as well as electronic powertrain controls. Course Fee: \$20.00

Course Outcome Objectives:

A. Clutch Diagnosis and Repair

- Diagnose clutch noise, binding, slippage, pulsation, and chatter problems; determine needed repairs.
- Inspect, adjust or replace clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, and springs.
- Inspect, adjust, repair or replace hydraulic clutch slave and master cylinders, lines, and hoses.
 - Inspect, adjust or replace release (throw-out) bearing, lever, and pivot.
- Inspect and replace clutch pressure plate assembly and clutch disc.
 - Inspect, remove or replace crankshaft pilot bearing or bushing (as applicable).
- Inspect, repair, and- service or replace flywheel and ring gear.
- Inspect engine block, clutch (bell) housing, and transmission case mating surfaces; determine needed repairs.
- Measure flywheel-to-block runout and crankshaft end play; determine needed repairs.
- Measure clutch (bell) housing bore-to-crankshaft runout and face squareness; determine needed service.

B. Transmission Diagnosis and Repair

- Diagnose transmission noise, hard shifting, jumping out of gear, and fluid leakage problems; determine needed repairs.
- Inspect, adjust and replace transmission shift linkages, brackets, bushings, cables, pivots, and levers.
- Inspect, replace, and align power train mounts.
- Inspect and replace transmission gaskets, seals, and sealants; inspect sealing surfaces.
- Remove and reinstall transmission.
- Disassemble, clean, and reassemble transmission components.
- Inspect, adjust, and reinstall transmission shift cover, forks, grommets, levers, shafts, sleeves, detent mechanisms, interlocks, and springs.
- Inspect and reinstall input (clutch) shaft and bearings.
- Inspect and reinstall main shaft, gears, thrust washers, bearings, and retainers.
- Inspect and reinstall synchronizer hub, sleeve, keys (inserts), springs, and blocking rings.
- Inspect and reinstall counter (cluster) gear, shaft bearings, thrust washers, and retainers; check end play; adjust as needed.
- Inspect and reinstall reverse idler gear, shaft, bearings, thrust washers, and retainers; check end play; adjust as needed.
- Inspect and replace speedometer drive gear, driven gear, vehicle speed sensor (VSS), and retainers.
- Inspect, repair, and replace extension housing and transmission case mating surfaces, bores, bushings, and vents.
- Inspect lubrication devices (oil pump or stingers).

C. Transaxle Diagnosis and Repair

- Diagnose transaxle noise, hard shifting, jumping out of gear, and fluid leakage problems; determine needed repairs.
- Inspect, adjust, and reinstall transaxle shift linkages, brackets, bushings, cables, pivots, and levers.
- Inspect and reinstall power train mounts.
- Remove and reinstall transaxle.
- Inspect and replace transaxle gaskets, seals, and sealants; inspect sealing surfaces.
- Remove and replace transaxle final drive.
- Disassemble and clean transaxle final drive.
- Inspect, adjust, and reinstall transaxle shift cover, forks, levers, grommets, shafts, sleeves, detent mechanism, interlocks, and springs.

Inspect and reinstall input (clutch) shaft and bearings.
Inspect and reinstall output shaft, gears, thrust washers, bearings, and retainers.
Measure end play or preload (shim or spacer selection procedure) on transaxle shafts; adjust as needed.
Inspect and reinstall synchronizer hub, sleeve, keys (inserts), springs, and blocking rings.
Inspect and reinstall reverse idler gear, shaft, bearings, thrust washers, and retainers.
Inspect transaxle case, mating surfaces, bores, bushings, and vents.
Inspect and reinstall speedometer drive gear, driven gear, vehicle speed sensor (VSS), and retainers.
Diagnose differential assembly noise and vibration problems; determine needed repairs.
Remove, inspect, measure, adjust, and reinstall differential pinion gears (spiders), shaft, side gears, side bearings, thrust washers, and case assembly.
Inspect lubrication devices (oil pump or stingers).

D. Drive and Half Shaft Universal and Constant-Velocity (CV) Joint Diagnosis and Repair

Diagnose constant-velocity (CV) joint noise and vibration problems; determine needed repairs.
Diagnose universal joint noise and vibration problems; determine needed repairs.
Diagnose front wheel drive (FNVD) front wheel bearing noise and vibration problems; determine needed repairs.
Inspect, service, and replace shafts, yokes, boots, and universal/CV joints.
Inspect, service, and replace shaft center support bearings.
Check and correct shaft balance; measure shaft runout; measure and adjust driveline angles.

E. Rear Axle Diagnosis and Repair

Ring and Pinion Gears and Differential Case Assembly

Diagnose noise and vibration problems; determine needed repairs.
Diagnose fluid leakage problems; determine needed repairs.
Inspect and replace companion flange and pinion seal; measure companion flange runout.
Inspect ring gear and measure runout; determine needed repairs.
Remove and inspect drive pinion gear, spacers, sleeves, and bearings.
Measure and adjust drive pinion depth.
Measure and adjust drive pinion bearing preload.
Measure and adjust side bearing preload and ring and pinion gear total backlash and backlash variation on a differential carrier assembly (threaded cup and shim types).
Check ring and pinion tooth contact patterns; adjust as needed.
Disassemble, inspect, measure, and adjust or replace differential pinion gears (spiders), shaft, side gears, side bearings, thrust washers, and case.
Reassemble and reinstall differential case assembly; measure runout; determine needed repairs.

2. Limited Slip Differential

Diagnose noise, slippage, and chatter problems; determine needed repairs.
Inspect and flush differential housing; refill with correct lubricant.
Inspect and reinstall clutch (cone or plate) components.
Measure rotating torque; determine needed repairs.

3. Axle Shaft

Diagnose rear axle shafts, bearings, and seals for noise, vibration, and fluid leakage problems; determine needed repairs.
Inspect and replace rear axle shaft wheel studs.
Remove and replace rear axle shafts.
Inspect and replace rear axle shaft seals, bearings, and retainers.
Measure rear axle flange runout and shaft end play; determine needed repairs.

F. Four-wheel Drive/All-wheel Drive Component Diagnosis and Repair

Diagnose noise, vibration, and unusual steering problems; determine needed repairs.

Inspect, adjust, and repair shifting controls (mechanical, electrical, and vacuum), bushings, mounts, levers, and brackets.

Remove and reinstall transfer case.

Disassemble, service, and reassemble transfer case and components.

Inspect, service, and replace front-wheel bearings and locking hubs.

Check drive assembly seals and vents; check lube level.

Inspect viscous coupling assembly.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources. None

Updated 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 11/29/12

Submitter K. Johnson Dean Sherry O. Kuhl Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences
Program Area: Automotive
Date: 3/27/12
Course Prefix & No.: AUTO 119

Course Title: Automotive Braking Systems
Credits: 5

Required by:

Automotive Technology Certificate
Automotive Technology Associate of Applied Science Degree
Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 2

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course examines automotive braking systems, including hydraulic and friction theory. The construction, maintenance, diagnosis, and repair of disc, drum and antilock braking systems are studied. Use of off-the-car and on-the-car-brake lathes are included in lab. Lab application of service procedures is included. **Course Fee \$20.00**

Proposed or New Catalog Description (include all prerequisites):

No Change.

Course Outcome Objectives:

Students will demonstrate the ability to:

- 1) Identify types of braking systems and components.
- 2) Diagnose disc, drum, hydraulic and antilock braking systems.
- 3) Service and repair disc, drum, hydraulic and antilock braking systems.
- 4) Operate both on and off the car brake lathes.
- 5) Use asbestos dust containment equipment.

Students will perform NATEF objectives related to the above areas.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Updated 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 11/29/2012

Submitter K. Johnson Dean [Signature] Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive

Date: 3/27/12

Course Prefix & No.: AUTO 120

Course Title: Automotive Steering and Suspension

Credits: 5

Required by:

Automotive Technology Certificate
Automotive Technology Associate of Applied Science Degree
Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 2

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course examines automotive suspension and steering systems. The theory of operation, construction, maintenance, diagnosis and repair of steering and suspension systems will be examined. Alignment procedures, wheel balancing, steering, suspension, headlight aiming, and structural damage diagnosis will be discussed. Lab application of service procedures is included. **Course Fee \$20.00**

Proposed or New Catalog Description (include all prerequisites):

No Change.

Course Outcome Objectives:

Students will demonstrate the ability to:

- 1) Identify types of steering and suspension components and parts.
- 2) Diagnose steering, suspension and wheel problems.
- 3) Service, maintain and repair steering and suspension components.
- 4) Diagnose structural damage to the suspension with four wheel alignment equipment.

Students will perform NATEF objectives related to the above areas.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources. none

Updated 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 11/29/12

Submitter: K. Johnson Dean: [Signature] Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

To meet industry/NATEF standards for hours of instruction/lab in this topic area. Change the title to more accurately reflect industry terminology.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive

Date: 3/27/12

Course Prefix & No.: AUTO 151

Course Title: ~~Diagnosis and Tune-Up~~ Introduction to Engine Performance

Credits: 6

Required by:

Automotive Technology Minor

Automotive Technology Certificate

Automotive Technology Associate of Applied Science Degree

Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 3

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course examines the theory and diagnosis of gasoline engines and related systems. These systems include engine mechanical testing, ignition systems, fuel delivery, emission control systems and an introduction to computerized fuel injection systems. Students will use the latest diagnostic equipment available to test and diagnose these systems during the lab.

Course Fee: \$20.00

Proposed or New Catalog Description (include all prerequisites):

No Change.

Course Outcome Objectives:

Students will complete engine performance objectives as required by our current NATEF certification.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED XX MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 3/27/12

Submitter K. Johnson Dean [Signature] Date 12-5-2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive Technology

Date: 3/27/12

Course Prefix & No.: AUTO 210

Course Title: ASE certification I

Credits: 1

Required by: Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 1

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

Students will prepare for ASE tests in Engine repair (A1), Manual Drive Trains and Axles (A3), Steering and Suspension (A4), Brakes (A5). At the conclusion of this class students will take their ASE certification tests. Prerequisites AUTO 117, AUTO 119, Auto 120 (220), Auto 128, Auto 151.

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Students will be exposed to and understand the subject areas for the ASE tests described under the course description.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED XX MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 3/27/12

Submitter K. Johnson Dean Gregory D. Kuyf Date 12. 5. 2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive Technology

Date: 3/27/12

Course Prefix & No.: AUTO 211

Course Title: ASE certification II

Credits: 1

Required by:

Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

Students will prepare for ASE tests in Automatic transmission/Transaxle (A2), Electrical/Electronic Systems (A6), Heating and Air conditioning (A7) and Engine Performance (A8). At the conclusion of this class students will take their ASE certification tests. Prerequisites ATDI 264, AUTO 257, AUTO 251, ATDI 265.

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Students will be exposed to and understand the subject areas for the ASE tests described under the course description.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 11/30/12

Submitter: K. Johnson Dean: [Signature] Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

To meet industry/NATEF standards for hours of instruction/lab in this topic area. The title is being changed to more accurately reflect industry terminology.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive

Date: 11/30/12

Course Prefix & No.: AUTO 251

Course Title: Computerized Engine Control Systems-Engine Performance

Credits: 6

Required by:

Automotive Technology Associate of Applied Science Degree
Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 3

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course examines the theory and diagnosis of computerized gasoline fuel injected engines. Students will work with the latest diagnostic equipment to test and repair computerized engine control systems on Toyota, Ford, General Motors and Chrysler Vehicles. Prerequisite: Auto 128, Auto 151, and ATDI 134. **Course Fee: \$20.00**

Proposed or New Catalog Description (include all prerequisites):

No Change.

Course Outcome Objectives:

Students will complete engine performance objectives as required by our current NATEF certification.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 11/29/2012

Submitter  Dean  Date 12.5.2012
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive Technology

Date: 3/27/12

Course Prefix & No.: AUTO 450

Course Title: ~~Dynamometer Testing and Computer Systems Analysis~~ Advanced Engine Performance

Credits: 4

Required by: Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 2

Contact hours lab: 4

Current Catalog Description (include all prerequisites):

Students in this course will use the dynamometer and other diagnostic equipment to dynamically test and analyze computer-controlled emission, fuel delivery and ignition systems. Students will follow manufacturer drive cycles to see what effect that alternative fuels, additives and trouble codes have on drivability, emissions and performance. Prerequisite: Auto 251, ATDI 383, and ATDI 384. **Course Fee \$20.00**

Proposed or New Catalog Description (include all prerequisites):

Students in this course will use advanced diagnostic equipment to dynamically test and analyze computer-controlled emission, fuel delivery and ignition systems. Students will follow manufacturer drive cycles to see what effect that alternative fuels, additives and trouble codes have on drivability, emissions and performance. The ASE L1 – Advanced Engine Performance Specialist will be heavily emphasized during this course. Prerequisite: Auto 251. Course Fee \$20.00

Course Outcome Objectives:

A. Introduction

1. code log and curve sheets
2. engine equipment
3. preliminary engine checking procedure
4. precision engine adjustments and settings

5. engine stability
 6. torque, speed power
 - i. instrumentation
 - ii. computations
 7. spark timing and detonations
 8. fuel consumption
 9. air consumption
 10. temperatures
 11. pressures
 12. humidity
- B. Standard tests
 - C. Engine durability tests
 - D. Air-Fuel metering tests
 - E. Engine cold tests
 - F. Power correction tables and reference materials
 - G. Checking lists and tests codes
 - H. Equipment calibration tests
 - I. Interpretations

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Updated 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION X FOR INFORMATION ONLY _____

College COTS Program Area DIESEL Date 11/29/12

Submitter Steve Don Dean [Signature] Date 12-5-2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Increase credits based on recommendation by Industry Advisors/standard. The increase in lecture credits will allow the students to gain the needed information pertaining to the fuel systems they will be diagnosing and repairing in their chosen career field.

Please provide the following information:

College: COTS
Program Area: Diesel
Date: 11/29/12
Course Prefix & No.: DIES 115

Course Title: Introduction to Diesel Fuel Systems
Credits: 5

Required by: Diesel Technology BS
Diesel Technology AAS
Diesel Technology Field Maintenance Option BS
Diesel Technology Equipment Management Option BS
Diesel Technology minor
Agricultural Mechanics Technology AAS

Selective in:
Elective in:
General Education:

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab: 4

Current Catalog Description (include all prerequisites):

4 semester credits (Lec. 2, Lab. 4; Spring). This is an introductory lab in diesel fuel injection systems. This lab will include the identification, disassembly, assembly, troubleshooting, repair, and adjustment of the following fuel systems components: Inline pumps, distributor pumps, Cummins fuel system, unit injectors, and injectors. Course Fee: \$6.00

Proposed or New Catalog Description (include all prerequisites):

4 semester credits (Lec. 3, Lab. 4: Fall and Spring). This lecture/lab course will introduce students to the diesel fuel injection system. Topics covered will include fuel characteristics & testing, fuel sub-system and components, mechanical diesel fuel systems (inline pumps, rotary distributor pumps, mechanical unit injectors) and electronically controlled diesel fuel systems (EUI, HEUI, High Pressure Common Rail). Lab exercises will relate to lecture material, and will include fuel subsystem components, disassembly/reassembly of fuel pumps, fuel testing, injector testing, removal/installation of fuel pumps and injectors. Safety, correct industry procedures, correct tool usage, and diagnosis of common fuel-related problems will be emphasized. Course Fee: \$6.00

Course Outcome Objectives:

1. Students will be able to correctly disassemble and reassemble diesel fuel injection pumps and injectors
2. Students will be able to correctly remove/reinstall high pressure diesel fuel pumps on engines
3. Students will be able to correctly remove/reinstall hydraulic injectors, unit injectors, HEUI injectors, EUI injectors and HPCR injectors on engines as per industry procedures and safety standards
4. Students will be able to use industry approved test methods to accurately and safely test fuel pumps and injectors
5. Students will be competent in the correct diagnosis of common diesel fuel system problems
6. Students will be competent in the testing of diesel fuel and recommending appropriate fuel additives
7. Students will be competent in interacting with industry and aftermarket software to diagnose fuel system issues, and to attain the correct and safety industry procedures to repair diesel fuel systems
8. Students will have developed efficient time management skills

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Updated 11/29/12

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Diesel Date 11/29/2012

Submitter [Signature] Dean [Signature] Date 12.5.2012
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Diesel Technology

Date: 11/29/2012

Course Prefix & No.: DIES 262

Course Title: Diesel Engine Diagnosis and Repair

Credits: 3

Required by:

Agricultural Mechanics Technology Associates of Applied Science
Degree

Diesel Technology Associate of Applied Science Degree

Diesel Technology Bachelor of Science Degree

Diesel Technology, BS (Field Maintenance)

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 3

Contact hours lab:

Current Catalog Description (include all prerequisites):

This course will include engine assembly and engine start-up after assembly. The course will also coordinate set-up, testing, and diagnosis of engine problems using test instruments and an engine dynamometer. To be taken concurrently with DIES 272. Prerequisites: DIES 104 and DIES 114

Proposed or New Catalog Description (include all prerequisites):

No Change.

Course Outcome Objectives:

General engine overhaul procedures; details documentation, engine subassemblies operation and overhaul; Diesel engine diagnosis procedure, Diesel engine tune-up procedure, Diesel engine performance and rating using the engine dyno.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION XX FOR INFORMATION ONLY _____

College COTS Program Area Diesel Date 11/29/12

Submitter  Dean  Date 12.5.2012
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Diesel Technology

Date: 11/29/2012

Course Prefix & No.: DIES 272

Course Title: Diesel Engine Diagnosis and Repair Lab

Credits: 3

Required by:

Agricultural Mechanics Technology Associates of Applied Science
Degree

Diesel Technology Associate of Applied Science Degree

Diesel Technology Bachelor of Science Degree

Diesel Technology, BS (Field Maintenance)

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab:

Gradable Lab: X

Contact hours lecture:

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

This course will give the student hands-on experience on diagnosing diesel engines using the proper test equipment. Diesel engine repair and assembly will be addressed. To be taken concurrently with DIES 262. **Course Fee: \$20.00**

Proposed or New Catalog Description (include all prerequisites):

No Change.

Course Outcome Objectives:

Course objectives will be monitored by the instructor on the work chart. Each student will keep a lab notebook for documentation and record keeping of each objective. A lab work file will be kept for each student with documentation of each completed objective. Students are encouraged to review their file and grade status with the instructor anytime.

Lab objectives: Will be altered at the instructor's discretion.

Each student will:

- Conduct safety meeting and monitor the tool room (Safety Director)
- Become proficient in the use of measuring tools and engine diagnostic instrumentation
- Use basic tools and engine specialty tools accurately

- Become familiar with the large pressure washer
- Become familiar with the small high pressure washer
- Perform a diesel engine leak-down test/compression test
- use the proper instrumentation and perform and intake and exhaust restriction diagnosis on a diesel engine
- diesel fuel system diagnosis
- shop computer management
- live work/major project
- four diesel engine tune-ups



Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Updated 11/29/2012

COURSE REVISION FORM

NEW ___ DROPPED XX MAJOR REVISION ___ FOR INFORMATION ONLY ___

College COTS Program Area Automotive Date 11/29/2012

Submitter  Chair/Dean  Date 4.2.2013
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Dropping course to accommodate credit increases in Auto CAS, AAS and BS.

College: College of Technical Sciences

Program Area: Automotive

Date: 06-2002

Course Prefix & No.: ATDI 220

Course Title: Auto/Diesel and Hybrid Vehicles

Credits: 3

Required by: Automotive Technology Bachelor of Science Degree
Automotive Technology Associate of Applied Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

Course Outcome Objectives:

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Review Date: 11/29/2012

COURSE REVISION FORM

NEW _____ DROPPED XX MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 2/27/2012

Submitter: [Signature] Dean: [Signature] Date 4.2.2013
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Redesign of Auto Curriculum per recommendations by industry

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive

Date: 2/27/2012

Course Prefix & No.: AUTO 115

Course Title: Introduction to Automotive Services

Credits: 1

Required by: Automotive Technology Minor
Automotive Technology Certificate
Automotive Technology Associate of Applied Science Degree
Automotive Technology BS

Selective in:

Elective in:

General Education:

Lecture: X

Lecture/Lab:

Gradable Lab:

Contact hours lecture: 1

Contact hours lab:

Current Catalog Description (include all prerequisites):

An introductory course designed to assist the novice automotive technician in adjusting to the demands of an automotive service facility. This course will expose the student to the flat rate method of shop pay as well as focus on many customer concerns. The student will experience the most effective method when dealing with customer service while demonstrating correct dealer etiquette.

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Upon completing this course the student will have the ability to properly communicate automotive technology to customers and present a professional image of their employer.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED XX MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 3/27/12

Submitter  Signature Dean  Signature (indicates "college" level approval) Date 4.2.2013

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences

Program Area: Automotive Technology

Date: 3/27/12

Course Prefix & No.: AUTO 210

Course Title: ASE certification I

Credits: 1

Required by:

Automotive Technology Bachelor of Science Degree

Selective in:

Elective in:

General Education:

Lecture:

Lecture/Lab: X

Gradable Lab:

Contact hours lecture: 1

Contact hours lab: 6

Current Catalog Description (include all prerequisites):

Students will prepare for ASE tests in Engine repair (A1), Manual Drive Trains and Axles (A3), Steering and Suspension (A4), Brakes (A5). At the conclusion of this class students will take their ASE certification tests. Prerequisites AUTO 117, AUTO 119, Auto 120 (220), Auto 128, Auto 151.

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Students will be exposed to and understand the subject areas for the ASE tests described under the course description.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW _____ DROPPED XX MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Automotive Date 3/27/12

Submitter [Signature] Dean [Signature] Date 4.2.2013
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
To meet industry/NATEF standards for hours of instruction/lab in this topic area.

Please provide the following information:

College: College of Technical Sciences
Program Area: Automotive Technology
Date: 3/27/12
Course Prefix & No.: AUTO 211

Course Title: ASE certification II
Credits: 1
Required by: Automotive Technology Bachelor of Science Degree

Selective in:
Elective in:
General Education:

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture:
Contact hours lab:

Current Catalog Description (include all prerequisites):

Students will prepare for ASE tests in Automatic transmission/Transaxle (A2), Electrical/Electronic Systems (A6), Heating and Air conditioning (A7) and Engine Performance (A8). At the conclusion of this class students will take their ASE certification tests. Prerequisites ATDI 264, AUTO 257, AUTO 251, ATDI 265.

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Students will be exposed to and understand the subject areas for the ASE tests described under the course description.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.