Internal Program Review
Self-Study Report

Program Name
Automotive Technology

Credentials Offered
Associate of Applied Science Automotive Technology: 71 semester credits

Self-Study Completed by:
David Jones, Faculty
Joe Zimmerman, Faculty

Date Completed:
September 26, 2014

A. Introduction

The Automotive Technology curriculum consists of eight areas of study as defined by the National Institute for Automotive Service Excellence (ASE) and is certified by the National Automotive Technicians Education Foundation (NATEF). This non-profit corporation is dedicated to improving the quality of automotive service and repair as well as assisting in training and program development throughout the nation. The eight content areas of study, along with the College's general education requirements, are structured into four groups with all eight areas of study being offered during a two-year period. Successful completion of this program prepares students to enter the automotive job market.

B. Alignment with mission, strategic goals and core themes.

Helena College Mission
Helena College University of Montana, a comprehensive two-year college, provides access to and support of lifelong educational opportunities to our diverse community

Automotive Technology Program Mission Statement
The Helena College Automotive Technology Program provides an educational environment for students to acquire entry level skills for success in the automotive repair field and other related industries.

The Automotive Technology Program Mission aligns with the Helena College-UM Mission through the provision of access to educational opportunities throughout the College service area. The Automotive Technology Program prepares entry-level technicians automotive maintenance, diagnosis, and repair.

Helena College 2012-22 Strategic Goals
1. Partner for Student Success Integrate Assessment/Planning
2. Attain Excellence
3. Support the Community
4. Advance the Institution
5. Develop Resources

Automotive Technology Goals

1. Collaborate with business, industry, and the community as partners to provide a quality learning experience that gives graduates the best opportunity to gain employment
2. Solicit input from our constituents including, students, graduates, advisory board members, business, industry, faculty, staff, and administration concerning the operation and improvement of the program and career tracks which align with NATEF Standards
3. Assess student and program performance through the use of outcomes assessment, Program Review and Evaluation Process, job placement rates, employer and graduate surveys
4. Increase enrollment through recruiting efforts including; business, industry, government, professional organizations, and high schools

Automotive Technology Goals are perfectly aligned with Helena College-UM Strategic Goals and Core Themes. This alignment is illustrated in the Goals/Core Themes crosswalk below:

Helena College Strategic Goals	Automotive Technology Goal Alignment
Partner for Student Success	Increase enrollment through recruiting efforts including; business, industry, government, professional organizations, and high schools
Integrate Assessment & Planning	Assess student and program performance through the use of outcomes assessment, Program Review and Evaluation Process, job placement rates, employer and graduate surveys
Attain Excellence	Solicit input from our constituents including, students, graduates, advisory board members, business, industry, faculty, staff, and administration concerning the operation and improvement of the program and career tracks which align with NATEF Standards
Support the Community	Collaborate with business, industry, and the community as partners to provide a quality learning experience that gives graduates the best opportunity to gain employment
Advance the institution	
Develop Resources	Collaborate with business, industry, and the community as partners to provide a quality learning experience that gives graduates the best opportunity to gain employment

Helena College-UM Core Theme Alignment with Automotive Technology

- **Provide Access and Support: High quality educational activities and programs important to achieving student success**
  - Premier Montana 2-year program in Automotive Technology
  - Rigorous Program of Study
  - Curriculum aligns with NATEF standards and prepares students for ASE Exams
  - The Helena College-UM Automotive Technology Program is one of four Associate of Applied Science Degree offerings in Automotive Technology in Montana.

- **Demonstrate Academic Excellence: Integrity, quality and reliability in all academic and non-academic programming**
  - In the academic year 2012/13 the Automotive Faculty administered a nationally recognized annual End of Program Student Assessment test developed by National Automotive Technician Education Foundation (NATEF). The test series consists of eight individual written exams following National Institute for Automotive Service Excellence (ASE) master certification standards. These tests are administered to all graduating automotive students
    - Spring 2013: 40 Tests administered, 100% Pass
    - Spring 2014: 48 Tests administered, 100% Pass

- The automotive program successfully completed a NATEF accreditation review process and was awarded a Master Certification level in the spring 2014. This accreditation is valid through June 20, 2019.

- **Strengthen the Community: Meeting regional workforce needs, strengthening employee knowledge and skills, providing a bridge to additional educational attainment, and serving as a facilitator for cultural enrichment**
  - The Automotive Technology Program strengthens the community by preparing students to meet local, regional, state and national workforce needs.

    The need for highly skilled automotive technicians has grown consistently and will continue to do so until through 2022. Based on this trend, it is anticipated that the need will continue to grow beyond 2022. The Montana Department of Labor reports the need for automotive technicians. Graduates are prepared for ASE Certification Examination, used as the industry standard.

C. Alignment with community needs

Due to high demand for highly skilled workers in the automotive industry, Helena College-UM meets the workforce development needs of the community by training technicians for entry-level employment. The Montana Department of Labor and Industry projects continued and steady Montana employment opportunities for graduates of this program from 2012 through 2022. (extracted from http://www.ourfactsyourfuture.org/cgi/dataanalysis/occprjReport.asp?menuchoice=occprj, September 26, 2014)

Area	Code	Occupation	Est Yr-Proj Yr	Estimated Employment	Annual Growth Rate	Annual Openings due to Growth	Annual Openings due to Replacements	Total Annual Openings
MONTANA	493023	Automotive Service Technicians and Mechanics	2012 - 2022	3,053	0.7	23	77	100

Occupations by Industry and Regions in Montana

Area	Ind Code	Industry	Occ Code	Occupation	Est Yr-Proj Yr	Numeric Change	Percent Change
Region 1	102100	Trade, Transportation, and Utilities	493023	Automotive Service Technicians and Mechanics	2012-2022	52	12.6
Region 2	102100	Trade, Transportation, and Utilities	493023	Automotive Service Technicians and Mechanics	2012-2022	43	13.9
Region 3	102100	Trade, Transportation, and Utilities	493023	Automotive Service Technicians and Mechanics	2012-2022	24	10.9
Region 4	102100	Trade, Transportation, and Utilities	493023	Automotive Service Technicians and Mechanics	2012-2022	52	13.2
Region 5	102100	Trade, Transportation, and Utilities	493023	Automotive Service Technicians and Mechanics	2012-2022	31	19.3

D. Student participation and success

Helena College-UM enrolls 1,627 students with a full-time equivalent of 1,066. 789 of our students are full-time; (48%); 277 of our students are part-time (52%). The breakdown of General Education to Technical to Trades and non-degree seeking is:

General Education Students: 623 (38% of headcount)
Technical Students: 453 (28% of headcount)
Trades Students: 181 (11% of headcount)
Non-Degree Seeking Students: 89 (5% of headcount)

Our students enroll from Lewis & Clark County at the rate of 75%; and from adjacent counties 12% (Broadwater, Jefferson, Cascade, Powell, and Meagher). The remainder of student

enrollment comes from the rest of Montana (11%) and out-of-State/Western Undergraduate (2%).

Automotive program student enrollment history 2003-2014

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Fall	14	6	9	10	13	6	18	14	8	10	10
Total Program	34	22	18	21	20	21	29	33	42	28	23

Automotive Technology Program Student Retention

FY 2008/09	FY2009/10	FY2010/11	FY2011-12	FY2012-13	Five Year Average
62%	44%	62%	54%	33%	52%

From 2008 through 2013, the Automotive Technology program capacity has been an average of 88%. Program completion rates average 40%.

E. Student Learning Outcomes

Upon successful completion of the program, students will be able to:

- Demonstrate safe shop practices and hazardous material handling
- Diagnose and repair automotive electrical systems to NATEF Standard
- Diagnose and repair automotive engine performance, fuel, and emission control systems to NATEF Standard
- Diagnose and repair automotive brakes suspension, and steering systems to NATEF Standard
- Diagnose and repair automotive internal combustion engine systems to NATEF Standard.
- Diagnose and repair automotive powertrain systems (manual and automatic transmission/transaxles and drive axles) to NATEF Standard
- Diagnose and repair automotive heating and air conditioning systems as to NATEF Standard

Assessment of student learning outcomes occurs within individual program courses and all student learning outcomes are assessed through an end-of-program assessment using ASE certification examinations.

F. Curriculum

Automotive Technology

Length of Program:	4 Semesters
Type of Program:	Associate of Applied Science
NOTE:	*In order to take the first semester of Automotive Technology courses, students must prove their skills in Mathematics, Reading Comprehension, and Writing with the following:* *Placement into READ070 or higher* *Placement into WRIT121 or higher* *Placement into WRIT121 or higher* *Placement into M111T or higher*

FIRST YEAR

Fall Semester		
AST108	Automotive Manual Drive Trains	7
AST130	Introduction to Automotive Electronics	7
AUTO104	Automotive Mechanics	2
M111T	Technical Mathematics	3
Total Semester Credits		19

Spring Semester		
AST160	Automotive Engine Repair	6
AST172	Automotive Heating/ Air Conditioning	5
AST230	Electric/Electronics Systems ll	4
HT100T	Human Relations	2
Total Semester Credits		17

SECOND YEAR

Fall Semester		
AST118	Brakes Chassis	7
AST262	Engine Performance l	8
WRIT121T	Introduction to Technical Writing	3
Total Semester Credits		18

Spring Semester		
AST264	Engine Performance ll	5
AST270	Automotive Transmissions/ Transaxles	7

AST280	Applied Laboratory Experience/ Light Repair	5
Total Semester Credits		17
TOTAL CREDITS		71

G. Faculty Profiles

Helena College UM employs two full-time automotive technology instructors in tenured and tenure-track positions.

Jones, Dave

Automotive Technology
Certified Advanced Level Specialist
ASE Master Certified Technician
B.T., Northern Montana College
M.S., Montana State University - Northern
At Helena College since fall 1994

Zimmerman, Joe

Instructor-Automotive
ASE Master Certified Technician
A.A.S., Ferris State University
At Helena College since Fall 2011

H. Fiscal and Physical Resources

Infusions of budgetary support for Automotive Technology occurred when equipment maintenance and repair and purchase of new equipment was required.

FY2010/11	FY2011-12	FY2012-13	FY2013-14
13,163	23,630	21,875	18,909

The automotive program was awarded funding by the state legislature to build a new auto shop in 2007. In addition to the yearly automotive budgets, several major pieces of shop equipment have been purchased including a computerized four wheel alignment system, a computerized wheel balancer, tire machine, chassis dynamometer, and an automatic transmission dynamometer were purchased over the last several years. In the spring of 2014, two Toyota Prius were purchased for hybrid vehicle instruction.

I. Recommendations and Preliminary Implementation Plan

1. Update curriculum and skill development to include development, study and maintenance of alternative fuel vehicles, particularly electric vehicles. Purchase two Toyota Prius Vehicles equipped with electric and solar power, smart stop technology, and stability control.

2. Instructor professional development. Two instructors to attend 2015 Center for Advanced Automotive Technology Conference in Michigan.

3. Contracted services to integrate of Electric Vehicle Technology Certificate Program, using National Stem Consortium Curriculum. 1-year plan to outline equipment and staffing needs.

4. Build career awareness by partnering with industry partners, secondary schools and US Department of Labor Job Service.

5. Initiate Student Professional Organization which will include student participation in statewide skills competition

J. Program Review Data Summary

See Program Review Data Summary in Section K.

K. Appendix (Additional data or exhibits)

NATEF Program Re-Accreditation Letter (June 2014)

HELENA COLLEGE
University of Montana

Helena College – Aviation Maintenance Technology 3/18/13

Program Review Data Summary								
Alignment with Community Needs (AAS/CAS Only)								
Data Definition:	Current MT	Projected MT	Current U.S.	Projected U.S.			Program Notes	Source
A. Provide the total number of projected job openings from related occupations for Montana and the U.S.	320 (2008)	350 (2018)	123,800 (2010)	131,600 (2020)			Aircraft mechanics and service technicians	CareerOneStop/US Dept of Labor
B. Provide percent change in job openings for related occupations for Montana and the U.S.		+9%		+6%			See links for specific employ/wage data	CareerOneStop/US Dept of Labor
C. Provide the median hourly wage or annual salary for related occupations	$22.78 hourly		$26.25 hourly				Wage information as of 2011	CareerOneStop/US Dept of Labor
Data Definition:	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012	5 Year Ave	Program Notes	Source
D. Provide 5 years of in-field job placement rates for all program graduates	*67% **N/A	*100% **50%	*70% **33%	*N/A **77%	*N/A **N/A	*44% **74%	*HC Graduate Surveys 08-10 24% Average Response Rate **Perkins 4P1 Reports 09-11	Helena College Graduate Survey and/or OCHE Perkins Data
E. For applied programs with program admission provide five years of student application totals	N/A	N/A	N/A	N/A	N/A	N/A		Program Records
F. For applied programs with program admission provide five years of students accepted totals	N/A	N/A	N/A	N/A	N/A	N/A		Program Records
Student Participation and Success								
Data Definition:	Year 1 07/08	Year 2 08/09	Year 3 09/10	Year 4 10/11	Year 5 11/12	5 Year Ave	Program Notes	Source
A. Provide 5 years of transfer rates to 4-year colleges (AA/AS)								Institutional Research
B. Provide program capacity (headcount)	40	40	40	40	40	40	1st and 2nd Year (confirm)	Institutional Research
C. Provide 5 years of enrollment (unduplicated headcount)	21	33	33	36	36	32		Institutional Research
D. Provide 5 years of enrollment (FTE)	21.6	32.4	32.6	30	32.7	29.9	Total AMT course credits/15	Institutional Research
E. Annual percentage of program capacity	52%	82%	82%	90%	90%	79%		Institutional Research
F. Provide 5 years of retention rates for full-time students	71%	67%	78%	77%	85%	76%	Entering students returning	Institutional Research
G. Provide 5 years of retention rates for part-time students	N/A	N/A	N/A	N/A	N/A	N/A	the following fall semester	Institutional Research
H. Provide 5 years of successful program course completion rates.	90%/90%	82%/96%	93%/99%	92%/92%	88%/100%	89%/95%	Pass or C- or better each term	
I. Provide 5 years of graduation rates for full-time students *rate of students graduating within 150% of completion time*	44% Fall 05	43% Fall 06	57% Fall 07	67% Fall 08	62% Fall 09	55%	% entering students graduating with 3 years	Institutional Research
J. Provide 5 years of graduation rates for part-time students *rate of students graduating within 150% of completion time*	0%	0%	N/A	N/A	N/A	0%	No part-time students entering Fall 05/06 graduated	Institutional Research
K. Provide 5 years of annual degree & certificate completions	6	6	13	7	11	9		Institutional Research
L. Provide 5 years of degree production rates – *proportion of degrees/certificates granted per 100 FTE enrollment*	27	18	40	23	34	28	# of completers per 100 FTE enrollment	Institutional Research
M. Provide 5 years of pass rates on occupation/industry specific licensing or certification exams (as applicable)	--	--	--	--	--	--	Any documentation on pass rates for FAA exam?	Program Records
Fiscal and Physical Resources								
Data Definition: Instructional costs include salaries, operations, grant funding, and gifts/donations from partners	Year 1 07/08	Year 2 08/09	Year 3 09/10	Year 4 10/11	Year 5 11/12	5 Year Ave	Program Notes	Source
A. Provide 5 years of instructional cost/student (FTE)	N/A	$4,544	$4,051	$5,848	$3,487	$4,482		Institutional Research/Finance
B. Provide 5 years institutional expenditure/student (FTE)	$7,591	$7,367	$6,872	$6,024	$6,328	$6,836		MUS-OCHE
C. Provide 5 years of instructional cost/completion	N/A	$24,536	$10,158	$25,064	$10,367	$17,756		Institutional Research
D. Provide 5 years institutional expenditure/completion	$36,511	$34,392	$36,209	$33,220	$29,193	$33,905		MUS-OCHE
E. Provide 5 years of student program fees-fund balance(s)	N/A	$3,975	$5,472	$5,688	$6,048	$5,296	H60390 Program Fee	Finance/Program Records
F. Provide 5 years of student program fees-student costs	N/A	0	$4,944	0	$8,506	$6,725	H60390 Program Fee	Finance/Program Records
G. Provide five years of tuition revenue (Annual FTE x Res Tuition)	N/A	N/A	N/A	$88,410	$92,018	$90,214	Budgeted resident tuition revenue/FTE FY11 = $2,947 FY12 = $2,814	MUS-OCHE

HELENA COLLEGE
University of Montana

NATEF

NATIONAL AUTOMOTIVE TECHNICIANS EDUCATION FOUNDATION, INC.

June 12, 2014 **Program ID: 101224**

Dr. Daniel Bingham
Dean/CEO
Helena College
2300 Airport Rd.
Helena, MT 59601

Dear Dr. Bingham:

We have received the on-site evaluation results for your ***Automobile*** technician-training program at ***Helena College***. The results indicate that your program continues to meet the requirements for NATEF ***Master Automobile Service Technology*** Accreditation – the highest level of achievement recognized by the National Automotive Technician Education Foundation (NATEF).

We commend you and your staff for maintaining your program's standards, and continuing to meet the industry's requirements. The explosion in automotive technology makes your high quality automotive training program more valuable than ever.

To acknowledge your accomplishment, we are creating a plaque for you that will indicate your program successfully completed the renewal process of program accreditation. You should receive this plaque within 6-8 weeks.

Sincerely,

Patricia Serratore
Patricia Serratore
President, NATEF

cc: Daniel Bingham, Dean/CEO
Troy Spratling, ETI
Darrell Parks, NATEF Education Consultant

Accreditation Expiration Date: 06/2019

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