

FERRIS STATE UNIVERSTIY

HEAVY EQUIPMENT PROGRAM

**ACADEMIC PROGRAM
REVIEW**

FY 18



Program Information

College of Engineering Technology
Heavy Equipment Technology Program

Program Name: Heavy Equipment Technology Program

Name of Accrediting Agency: NATEF

Date Accreditation Expires: May, 2020

Program Name: Heavy Equipment Service Technology

Name of Accrediting Agency: AED (Association of Equipment Distributors)
Foundation

Date Accreditation Expires: September, 2021

Evidence of
Accreditation
in Good
Standing

NATEF Accreditation



NATIONAL AUTOMOTIVE TECHNICIANS EDUCATION FOUNDATION, INC.

To: NATEF Accredited Program

From: Erin Palmer
NATEF Administrative Services Coordinator

Date: April 28, 2015

Subject: Program Renewal of Accreditation Recognition

Congratulations on your program's renewal of NATEF accreditation! Enclosed, you will find the following items:

- A wall plaque recognizing your program for its recent achievement
- A copy of the official letter from NATEF awarding program accreditation (original forwarded to program administrator)
- Personalized certificates of appreciation for team members that participated in your on-site evaluation

We encourage you to be proud of your program's accreditation and hang your wall plaque in an area that will call attention to your program's achievement.

In an effort to show our gratitude to the team members that participated in the on-site evaluation process of your program, we have included personalized certificates and letters of appreciation that we ask you to present to them on our behalf.

Should you have any questions, please do not hesitate to contact our office. Thank you for your support of NATEF and its mission to improve automotive training programs through the accreditation process.



NATIONAL AUTOMOTIVE TECHNICIANS EDUCATION FOUNDATION, INC.

April 23, 2015

Program ID: 104890

Mr. Benjamin Upham
School Director
Ferris State University
220 Sports Dr.
Big Rapids, MI 49307

Dear Mr. Upham:

We have received the on-site evaluation results for your Medium/Heavy Truck technician-training program. The results indicate that the criteria have been met for renewal of program accreditation in Brakes, Diesel Engines, Drive Train, Electrical/Electronic Systems, Heating and Air Conditioning, Preventive Maintenance Inspection, Suspension & Steering.

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 recognize your school and the specialty areas your program has been granted renewal of accreditation in. You should receive this plaque within 6-8 weeks.

Congratulations!

Sincerely,

A handwritten signature in black ink that reads 'Patricia Serratore'.

Patricia Serratore
President, NATEF

cc: Mr. Gary Maike, Assistant Professor
Mr. Gary Sievert, ETL
Dr. Pat Lundquist, Educational Consultant

SUMMARY OF DEBRIEFING MEETING FORM

The Summary of Debriefing Meeting Form must be completed and signed at the conclusion of the on-site evaluation. A signed copy must be left with the institution and provided to NATEF.

Institution Name:

Ferris State University

Date and time of meeting:

April 9, 2015

Please outline the key points of the meeting. Include information on program strengths and standards that need improvement.

Program strengths:

This facility is exceptional. New lighting on service floor is much improved. Large amount of equipment, (live) to practice on. Running engine lab is a strength. Well qualified instructional staff.

3,000 character limit


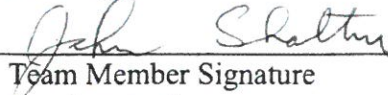
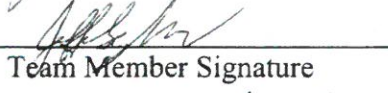
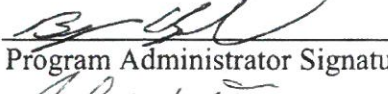
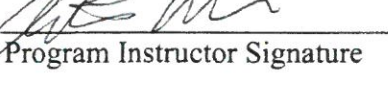
SUMMARY OF DEBRIEFING MEETING FORM (cont.)

Standards that need improvement (provide standard number - example 7.1A):

Customer work. Training on use of repair orders,
need better information on how OSHA standards
are covered and if the students receive any certificate.
7.9 Customer relations and responsibility emphasis
7.5C1 OSHA.
Also legal responsibilities of the students and
Techs 7.5C2
add an automotive Transmission presentation in
the course binder. (Project)
Add an air dryer to your shop/building air.
Storage in the fuels Lab. maybe an OSHA Deal.

3,000 character limit

Signatures below verify that the program's strengths and weaknesses were verbally shared with the program administrator and program instructor at the conclusion of the on-site visit, and that a copy of this form has been provided to the institution for their records.

1.		Gary Sievert	4-9-2015
	ETL Signature	Typed or Printed Name	Date (m/d/yyyy)
2.		John Shaltry	4-9-2015
	Team Member Signature	Typed or Printed Name	Date (m/d/yyyy)
3.		Jefferson Sykes	4-9-2015
	Team Member Signature	Typed or Printed Name	Date m/d/yyyy)
4.		Benjamin Upham	4-9-2015
	Program Administrator Signature	Typed or Printed Name	Date (m/d/yyyy)
5.		Austin Williams	4-9-2015
	Program Instructor Signature	Typed or Printed Name	Date (m/d/yyyy)

Response and Plan for Accreditation Opportunities for Improvement - NATEF

Both of the site evaluations for our accreditations during this cycle were very positive. We will address both of the reviews, NATEF first.

The NATEF Debriefing meeting took place on April 9, 2015. It was facilitated by NATEF ETL Gary Sievert with team members John Shaltry and Jeff Sykes assisting.

After thorough review of the standards there were a few suggestions. The strengths included an excellent facility, large amount of live equipment for student practice and well qualified instructors.

Standards that need improvement were few as follows:

- Standard 7.9 – Customer Relations and Responsibility. The primary suggestion was concerning customer work. The team leaders suggested more training on the use of repair orders.
 - PLAN – Repair orders are covered extensively in HEQT 200 – Planned Maintenance Systems. Student assignments in preparing work orders will be incorporated to support the lecture material concerning repair order preparation. The ETL's have a propensity to favor in house "Service Floor" labs that mimic a shop. We opt for the internship experience in HEQT 193. This is where students encounter actual repair order preparation in the curriculum. Samples of repair orders will be solicited from internship students to document their exposure.
- Standard 7.5.C1 – OSHA. The team suggested documentation of OSHA training for students.
 - PLAN – we have commenced using a service called SP2. This is a series of on line courses that students complete as homework and submit in HEQT 101. These course are referenced directly to OSHA codes and documents the progress of each student. The license fee is purchased annually by the School of AUTO and HE as both departments now use this method of safety training.
- Standard 7.5.C2 – Legal Responsibilities of Students and Technicians - The team suggested documentation of legal training for students.
 - PLAN – The legal requirements of technicians is covered in HEQT 200, including DOT annual inspections, ASE technician certification and State of Michigan Technician license requirements. The corrective action is to make sure evidence of these topics are included for the next review.

The ETL's had several casual suggestions as well. They suggested sample copies of student presentations from their HEQT 271 projects because it is a comprehensive endeavor and worthy of display. We will include those in the next review.

They also suggested adding an air dryer to our shop compressed air supply. This is a Physical Plant issue that has since been resolved with the air compressors receiving maintenance and the air dryer replaced.

They had concerns with storage in the fuels lab, HEC 110. This has since been resolved. We worked with Anne Hawkins to get storage up to code and hazardous waste removed.



CERTIFICATE OF ACCREDITATION

This is to signify that:

Ferris State University

Post Secondary

Expires 05/2020

Has been evaluated by the

National Automotive Technicians Education Foundation

in the areas of instruction, course of study, facilities and equipment, and meet the standards of quality for the training of automobile technicians in the following areas:

**Brakes
Diesel Engines
Drive Train
Electrical/Electronic Systems
Heating and Air Conditioning
Preventive Maintenance Inspection
Suspension & Steering**

Timothy A. Zilke
President, ASE

Patricia Serratore
President, NATEF

AED Accreditation



September 26, 2016

Mr. Gary Maike
Associate Professor/Program Coordinator
Ferris State University
Heavy Equipment Department
220 Sports Drive, HEC-203
Big Rapids, MI 49307-2741

Dear Gary:

Congratulations on achieving AED Re-Accreditation of the **Heavy Equipment Service Engineering Technology Program at Ferris State University**. We are pleased that you have chosen to demonstrate your commitment to academic excellence and continuous improvement through the process of AED Re-Accreditation.

Your accreditation signifies to equipment industry stakeholders that your college has met rigorous industry-specific national construction equipment technical standards. It further signifies to current and prospective students that your program provides the best in diesel-equipment technical education as defined by the industry it serves.

The term of AED Accreditation is five years starting from the date shown on the Certificate of Accreditation. We are relying on you to maintain the standards upon which AED Accreditation was granted, and continue serving students with excellence. One year prior to the expiration of your accreditation, we will contact you to begin the accreditation renewal process.

The AED Foundation is dedicated to developing and improving construction equipment industry partnerships that meet the mutual needs of local dealers, manufacturers and technical colleges. Please let us know if we can be of assistance. We are proud to be affiliated with Ferris State University through AED Accreditation, and wish ongoing success for your fine program.

Sincerely,

A handwritten signature in blue ink that reads 'Steven A. Johnson'.

Steven A. Johnson
Vice President Foundation Operations
Associated Equipment Distributors



Steven A. Johnson
Vice President Foundation Operations

9/26/16

Ray,

Congratulations on the re-accreditation. Ferris State was the first AED accreditation — and that's rather special. We're proud of our affiliation with Ferris.

Best,
Steve

The AED Foundation
650 E. Algonquin Rd., Suite 305, Schaumburg, IL 60173
630-468-5134 sjohnson@aednet.org



Heavy Equipment Technology AED Re-Accreditation Meeting Agenda

Wednesday, September 21, 2016

9:00 – 9:30 a.m.	Welcome & Refreshments - HEC 206 Conference Room
9:30 – 10:00 a.m.	Tour of Trouble Shooting Strategies Class – Maike/Williams - Room 103
10:00 – 10:30 a.m.	Tour of Electronics Class – Maike/Meyers - Room 112
10:30 – 11:00 a.m.	Tour of Refrigeration Class – Maike/Cripe - Room 106
11:00 – 11:30 a.m.	Tour of Maintenance Fundamentals Lecture – Maike/Williams - Room 202
11:30 – 12:00 p.m.	Tour of Engines Class – Maike - Room 111
12:00 - 1:00 p.m.	Lunch
1:00 - 1:30 p.m.	Meet with Ben Upham/ Director– Johnson 200
1:30 - 2:00 p.m.	Meet with Ron McKean/ Associate Dean of CPD - Johnson 200
2:00 - 2:30 p.m.	Meet with Larry Schult/Dean – Johnson 200
2:30 – 4:00 p.m.	Meet with individual instructors – if needed (Meyers, Williams, Maike)
4:00 - 6:00 p.m.	Break
6:00 p.m. – 8:30 p.m.	Dinner/Meeting with School Reps & Advisory Board Members – West Campus Community Center – Room 100

Thursday, September 22, 2016

9:30 – 10:00 a.m.	Tour of Fleet Management Class – Williams/Maike – Room 102
10:00-10:30 a.m.	Tour of Testing Systems & Analysis Class – Williams/Meyers – Room 112
10:30-10:50 a.m.	Tour of Power Transfer Technology – Williams – Room 101
11:00 a.m. – 12:00 p.m.	Student Forum (Advisory Board and students only) – Room 202
12:00 – 1:00 p.m.	Lunch
1:00 – 2:00 p.m.	Student Forum Feedback
2:00-3:00 p.m.	Closing Meeting – Gary Maike, Ben Upham, Larry Schult, Paul Blake and AED Team – HEC 206 Conference Room
3:00 p.m.	Adjourn



An affiliate of Associated Equipment Distributors

SEPTEMBER 22, 2016

**RE: FINAL AED ACCREDITATION REPORT, ON-SITE VISIT SEPTEMBER 21-22, 2016
FERRIS STATE UNIVERSITY, BIG RAPIDS, MI
HEAVY EQUIPMENT SERVICE ENGINEERING TECHNOLOGY PROGRAM**

AED EVALUATION TEAM LEADERS (ETLS):

Wayne Longbrake, Terry Marohl, Keith Dodds, and Tony Tice

COLLEGE REPRESENTATIVES PRESENT:

Robbie Teahen, Associate Provost, Academic Affairs, Ferris State University
Ron McKean, Associate Dean of Corporate Professional Development, Ferris State University
Ben Upham, Director of Automotive Management & Heavy Equipment, Ferris State University
Anne Hawkins, Director of Lab Safety, Academic Affairs, Ferris State University
Gary Maike, Program Coordinator/Associate Professor, Heavy Equipment, Ferris State University
Dan Meyers, Assistant Professor, Heavy Equipment, Ferris State University
Austin Williams, Assistant Professor, Heavy Equipment, Ferris State University
Joyce Mudel, Program Secretary, Heavy Equipment, Ferris State University

ADVISORY BOARD MEMBERS PRESENT

Steve Higgins, Training Director/Operations Manager, AIS Construction Equipment
Jason Rafalski, HR Manager, Alta Equipment Company
Daniel Sealy, Operations Manager, Alta Equipment Company
Tom Healy, Corporate Sales Manager, Burnips Equipment
Adam O'Brien, Territory Business Manager, Burnips Equipment
Shawn Schlicker, Fleet Field Leader, Consumers Energy
Mark Nelson, General Manager, Cross Roads Mobile Maintenance

AED ACCREDITATION RECOMMENDATION:

We recommend the Heavy Equipment Program at Ferris State University for AED Re-accreditation with the comments and observations noted in this report. This program will continue to improve and it is our belief that faculty, staff, administration and business partners/advisory partners will continue with progressive change.

SUPPORTING PROGRAM INFORMATION AND SUMMARY

The Heavy Equipment Program at Ferris State has a solid relationship with the community and those business partners who serve on their Advisory Board and hire program graduates. Our interviews with faculty, staff, Advisory Board members, and students were very cordial and professional.

A number of program areas deserve commendation:

1. Faculty members are to be commended for the extra time spent with students involved in extra-curricular activities, i.e. student organizations and clubs. The opportunity for students to work in the shop on live projects and the program's involvement with SKILLS USA show a true commitment to the program's students.
2. The program has a good relationship with business and industry partners and advisory board members which is evident by the number of internships, donations and curriculum input opportunities.
3. The Heavy Equipment Program facility is well designed to meet student needs in classroom learning, coupled with lab and shop activities.
4. Added faculty members from the previous AED visit make faculty to student ratio align to meet AED standards.
5. Additional, updated training components exceed minimal AED standards.
6. Outdated computers have been replaced with new and additional computers. This allows students the ability to perform diagnostics on equipment in the lab.
7. Additional power shift transmissions have been added to better align with AED standards.
8. Based on interviews from Advisory Board members, the Heavy Equipment Program curriculum has been modified to better align with industry needs.
9. Additional construction equipment has either been purchased, leased or on loan for student learning.
10. Advisory Board members attend at least three major functions per year, including career fairs and two Advisory Board Meetings. The Advisory Board membership better reflects all segments of the industry.

AED Committee member observations:

1. Lab and classroom space could be better utilized by reorganization, systematic purging of non-applicable training aids, removal of outdated equipment and clutter which also is a safety concern. This may require additional storage.
 - a. The program could obtain dry van storage containers for off-cycle equipment and training aids.
 - b. Additional storage racks could be installed in many areas.
 - c. An outside cold storage facility could be an option.
2. Labs could better utilize students learning opportunities to include a higher level of tool organization and tool storage, i.e. "a place for everything and everything in its place." Lab work stations should reflect best practices used in industry.
3. ETLs observed, on Wednesday, September 21st a student dressed in shorts and athletic shoes was allowed to attend lab which does not align with the program policy.
4. In reviewing the total number of hours in the A.A.S. program, with input from the Advisory Board, it was noted that Hydraulics has the least amount of instructional hours. It was agreed in discussion with the Board that students would benefit with additional hours in the hydraulic curriculum.
5. In discussions with the Advisory Board there were comments pertaining to adequate funding from the college in relationship to Industry support.

Respectfully submitted,

Wayne Longbrake, Terry Marohl, Keith Dodds and Tony Tice

Response and Plan for Accreditation Opportunities for Improvement – AED

The AED Accreditation meeting took place on September 22, 2016. Representing AED was Wayne Longbrake, Terry Marohl. The Heavy Equipment program met or exceeded all of the AED standards including corrections suggested in the previous cycle.

There were several observations by the team that were helpful suggestions rather than deficiencies of standards. This input is greatly appreciated. Outside review helps to focus on details we may overlook.

AED Committee member observations:

- Lab and classroom space could be better utilized by reorganization, systematic purging of non-applicable training aids, removal of outdated equipment and clutter which also is a safety concern. This may require additional storage.
 - We have begun to purge outdated equipment. We have had several significant donations of new equipment which will help us “let go” of current items. Student workers have been hired to assist in organizing and inventory of equipment. This will continue.
- Labs could better utilize students learning opportunities to include a higher level of tool organization and tool storage, i.e. “a place for everything and everything in its place.” Lab work stations should reflect best practices used in industry.
 - HEC 110 has been completely reorganized. Jib cranes and tables are complete in HEC 101 along with rack shelving and tool organization. HEC 109 has been purged and newer engines installed in the engine line. HEC 111 is reorganized with an enclosed truck van being used to rack store engines. HEC 112 has more racks with components stored accordingly. HEC 106 (“Service Floor”) is always crowded. Student projects have been assigned to specific bays. We are working with Anne Hawkins to get the non-complaint paint booth removed which will allow more space and less clutter.
 - We have a major initiative to clean and organize in 2017-18 as the program is hosting the AED National Educators Conference in June of 2018.
- ETLs observed, on Wednesday, September 21st a student dressed in shorts and athletic shoes was allowed to attend lab which does not align with the program policy.
 - This was an isolated incident. Continued vigilance for breaches in safety protocol will be expected.
- In reviewing the total number of hours in the A.A.S. program, with input from the Advisory Board, it was noted that Hydraulics has the least amount of instructional hours. It was agreed in discussion with the Board that students would benefit with additional hours in the hydraulic curriculum.
 - We are the only B.S. Degree that is accredited by AED. The amount of total class time for Hydraulics upon completion of the B.S. Degree is probably more than any other AED accredited school. We will review the curriculum but would be hard

pressed to reallocate class time from other courses to HEQT 160 which is 4 credit hours, 6 contact hours. We will pursue a curriculum revision that allows students to take HSET 410 Advanced Hydraulics as an option concurrent with their A.A.S. degree.

- In discussions with the Advisory Board there were comments pertaining to adequate funding from the college in relationship to Industry support.
 - Budget stagnation and increased program enrollment brings about these concerns. The program is aggressive in seeking assistance from many different donors. The advisory board members as donors would like to see some parity in funding from the University.

Certificate of AED Accreditation

Presented To

Ferris State University
Heavy Equipment Service Engineering Technology Program

Affirming that the institution above offers to and conducts for its students a program in construction diesel/equipment technology that meets the standards stipulated by The AED Foundation's Technical Training Committee, and is therefore entitled to recognition of AED Accreditation by the construction equipment industry.

Awarded January 2016



A handwritten signature in black ink, appearing to read "Dennis Vander Molen".

Dennis Vander Molen, Chairman
The AED Foundation

A handwritten signature in black ink, appearing to read "Robert K. Henderson".

Robert K. Henderson, President
The AED Foundation

Strengthening the equipment industry through Workforce Development and Professional Education

Enrollment Trends

**College of Engineering Technology
Fall 2012-Fall 2016 Enrollment Comparisons**

<i>School of Automotive & Heavy Equipment</i>						<i>projected</i>
<i>Degree</i>	<i>201208</i>	<i>201308</i>	<i>201408</i>	<i>201508</i>	<i>201608</i>	<i>201708</i>
HEQT	76	67	74	75	64	64
HEET	36	38	34	28	35	44
Totals	112	105	108	103	99	108

<i>School of Built Environment</i>					
<i>Degree</i>	<i>201208</i>	<i>201308</i>	<i>201408</i>	<i>201508</i>	<i>201608</i>
ARCH	73	64	59	62	63
ARST	25	31	32	26	20
FMAN	44	31	35	33	24
BCTM	19	16	21	82	126
CETM	10	10	14	22	24
CONM	192	195	176	145	108
HVAR	72	64	60	65	73
HVEM	148	160	133	101	124
Totals	583	571	530	536	562

<i>School of Engineering & Computing Technology</i>					
<i>Degree</i>	<i>201208</i>	<i>201308</i>	<i>201408</i>	<i>201508</i>	<i>201608</i>
EEIT	40	55	65	62	55
CNS	50	47	37	30	26
EEET	29	44	59	52	41
MECH	111	*183	139	152	143
MECE	48	*	55	68	77
PDET	52	51	55	59	62
ESEN	21	24	18	14	7
SURT	14	11	14	35	33
SURE	39	48	47	39	50
Totals	404	280	489	511	494

<i>School of Design & Manufacturing</i>					
<i>Degree</i>	<i>201208</i>	<i>201308</i>	<i>201408</i>	<i>201508</i>	<i>201608</i>
ITM	53	53	69	79	83
CDTD	45	36	44	33	36
MFT	35	41	51	58	52
MFGE	73	80	102	116	128
PPET	74	106	149	159	129
PLTE	38	46	48	67	97
RUBE	6	7	7	1	5
WELT	122	117	115	124	121
WELE	91	101	80	84	91
Totals	537	587	665	721	742

CET Yearly Totals	1636	1543	1792	1871	1897
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* MECH/MECE #'s merged for 201308. I do not have separate totals.

Program Response and Plan for Enrollment Trends

The program response to enrollment trends is to continue on the path that we are on. Full enrollment would be 45 new freshmen per year. If we are to look deeper into the enrollment data we would see some very good trends.

The first would be that for Fall 2017 we have 40 students enrolled in our Freshman courses. This can be compared to 22 sophomores expected for Fall 2017. This is a significant increase attributable to persistent recruiting conducted by our faculty at secondary programs. Also, we strive to do one on one tours after daily campus visits. IF we can get students with their parents on campus and at HEC, their enrollment potential is much greater. We will continue to do so.

The other significant trend is we have more Juniors in HSET. We have 24 enrolled for Fall 2017 compared to 20 Seniors. This is important because the just graduated Sophomore class was down in numbers. A greater percentage moved on to the B.S. degree.

As stated before, we will continue to recruit and host visits as well as maximize current student positive experience. This leads to positive word of mouth and referral for increased enrollment.

2016-17 Spring/Summer Graduates

TERM	AT STATUS	TE	BANNER	ULL_NAME	STU_EMAIL	ODE	PROG_DESC	ADVISOR	R	MAJOR_NAME	O	GPA
201701	AP Audit Processed	Y	12166616	Analtis, Dionysios S	analitd@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Heavy Equip Service Eng Tech		3.0907 40741
201701	AP Audit Processed	Y	12192564	Andre, Thomas Sheldon	andret@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Service Eng Tech		3.4522 52252
201701	AP Audit Processed	Y	12186093	Boston, Matthew Henry	bostonm1@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Wilson, Darren	HEET	Service Eng Tech		3.6234 78261
201701	AP Audit Processed	Y	12230196	Dabreo, Kyle Anthony	dabreak@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Maik, Gary	HEET	Service Eng Tech		3.1638 88889
201701	AP Audit Processed	Y	12181154	Gallagher, Hayden Joseph	gallagh@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Service Eng Tech		3.6409 09091
201701	AP Audit Processed	Y	12203136	Gizynski, Oscar A	gizynso@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Service Eng Tech		2.1834 78261
201701	AP Audit Processed	Y	12158868	Keeler, Joseph Andrew	keelerj4@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Service Eng Tech		3.1362 06897
201701	AP Audit Processed	Y	12226988	McEachern, Lance M	mceachl@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Maik, Gary	HEET	Service Eng Tech		2.7111 11111
201701	AP Audit Processed	Y	12184178	Mlot, Nicholas Michael	mlotn@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Wilson, Darren	HEET	Service Eng Tech		2.5878 50467
201701	AP Audit Processed	N	12145507	Poulias, Nichloas John	poulia@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Service Eng Tech		2.3106 87023
201701	AP Audit Processed	N	12161700	Vasicek, Mitchell Martin	vasicem1@ferris.edu	HEET-BS-TE	Heavy Equip Serv Engineer Tech	Williams, Austin	HEET	Service Eng Tech		3.5396 55172
201701	AP Audit Processed	Y	12192564	Andre, Thomas Sheldon	andret@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Williams, Austin	HEQT	Equipment Technology		3.4522 52252
201701	AC e Audit Pending	N	12234060	Cramer, Megan Lynn	cramerm4@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Wilson, Darren	HEQT	Equipment Technology		3.8470 58824
201701	AC e Audit Pending	N	12231853	Culver, Anthony Paul	culvera2@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Meyers, Daniel	HEQT	Equipment Technology		3.0229 50820
201701	AC e Audit Pending	Y	12185746	Elliott, Bruce Peters	elliottb3@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Maik, Gary	HEQT	Equipment Technology		3.7948 45361
201701	AP Audit Processed	N	12232665	Gigowski, Megan Marie	gigowms1@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Maik, Gary	HEQT	Equipment Technology		2.6972 22222
201701	AP Audit Processed	Y	12203136	Gizynski, Oscar A	gizynso@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Williams, Austin	HEQT	Equipment Technology		2.1834 78261
201701	AC e Audit Pending	N	12235447	Halverson, Damien Storm	halverd@ferris.edu	HEQT-AAS-TE	Heavy Equipment Technology	Wilson, Darren	HEQT	Equipment Technology		3.1160 00000

2016-17 Spring/Summer Graduates

20170 1	AC	e Audit Pending	N	12216268	Haskell, Nicholas Clemens	haskein1@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Meyers, Daniel	HEQT	Equipment Technology	2.7647 88732
20170 1	AP	Audit Processed	N	12243411	Hensel, Jarod O	henselj3@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Williams, Austin	HEQT	Equipment Technology	3.2428 57143
20170 1	AP	Audit Processed	N	12226988	McEachern, Lance M	mceachi@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Maiké, Gary	HEQT	Equipment Technology	2.7111 11111
20170 1	AP	Audit Processed	N	12167232	Nelson, Allison Grace	nelsoa26@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Williams, Brent	HEQT	Equipment Technology	3.8272 72727
20170 1	AC	e Audit Pending	Y	12213127	Patterson, Weston James	patterw3@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Meyers, Daniel	HEQT	Equipment Technology	2.5701 29870
20170 1	AC	e Audit Pending	Y	12134731	Robert, Kevin Gerald	roberk21@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Williams, Austin	HEQT	Equipment Technology	1.6380 00000
20170 1	AP	Audit Processed	Y	12236412	Rocheleau, Michael Joseph	rochelm@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Wilson, Darren	HEQT	Equipment Technology	3.3953 48837
20170 1	AC	e Audit Pending	Y	12212349	Roggenbuck, Ashton David	roggena2@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Wilson, Darren	HEQT	Equipment Technology	2.5253 96825
20170 1	AC	e Audit Pending	N	12241407	Waitkevich, Samuel R	waitkes@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Williams, Austin	HEQT	Equipment Technology	2.6186 04651
20170 1	AP	Audit Processed	Y	12173780	Warchuck, Curtis Douglas	warchuc@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Maiké, Gary	HEQT	Equipment Technology	2.4538 46154
20170 1	AC	e Audit Pending	N	12166311	Witkowski, Cody Richard	witkowc@ferris.edu	HEQT- AAS-TE	Heavy Equipment Technology	Williams, Austin	HEQT	Equipment Technology	2.9625 00000

DEGREES CONFERRED BY PROGRAM
ACADEMIC YEAR (SUMMER, FALL, SPRING SEMESTERS)

ENGINEERING TECHNOLOGY	2013-14				2014-15				2015-16			
	CERT	AS	BS	MS	CERT	AS	BS	MS	CERT	AS	BS	MS
HEAVY EQUIPMENT												
Electrical Power Generation	1				3				4			
Heavy Equipment Service Engineering Tech			10				23				13	
Heavy Equipment Technology		35				25				29		
TOTAL	1	35	10	0	3	25	23	0	4	29	13	0

ENGINEERING TECHNOLOGY	2010-11				2011-12				2012-13			
	CERT	AS	BS	MS	CERT	AS	BS	MS	CERT	AS	BS	MS
HEAVY EQUIPMENT												
Electrical Power Generation	2				4				2			
Heavy Equipment Service Engineering Tech			11				16				19	
Heavy Equipment Technology		10				19				41		
TOTAL	2	10	11	0	4	19	16	0	2	41	19	0

Program Response to Graduation Rates

Numbers of degrees conferred will increase with the corresponding enrollment trends. As the 2017 students move toward graduation we should experience higher A.A.S. completion followed by higher B.S. degree. The drop that occurred 2014 – 2016 corresponds to the time that we had 1 faculty member. Student perception was of a failing program and the number students going into the B.S. degree faltered significantly. Now that we have 4 active full time faculty, the recruiting and student retention is improving. We expect higher numbers in both degrees.

Certification Exam Pass Rates

There is no Certification or Exam for entry into the workplace for Heavy Equipment students.
No data or plan is available.

Strategic Plan

Program Strategic Plan

In the course of preparing this document, the Program had a meeting with Ben Upham, the Director for the School of Auto and Heavy Equipment. We reviewed and revised the strategic plans in line with the School plans. The results are as follows:

Short Term Strategic Plans

- Implement and utilize the Associated Equipment Distributors Foundation Technical Assessment as an end of program assessment. Results will show areas of opportunities and the data will allow us to drill down to specific tasks and concepts that afford these opportunities for improvement.
- Continue Advisory Board Curriculum Reviews. This program has an active and involved Advisory Board. Recent changes have been implemented in conjunction with advisory board input. For 2017-18 the A.A.S. course sequence was significantly reorganized to put certain courses in front of the HEQT 193 internship experience. Plans are to review the B.S. degree in the same manner.
- Review and revise Program Outcomes to be in line and measurable to the AED Technician Assessment.
- Solicit new and continued industry support in the form of consignment equipment, in kind donations, faculty training support and proprietary software usage.

Long Term Strategic Plans

- Expand performance testing at course level and integrate in TracDat.
- Develop faculty and plan for incorporation of autonomous equipment into curriculum. This will likely be in conjunction with emerging requirements from accrediting organizations.
- Work with School to identify opportunities for efficiencies.
- Work on a structured and formalized advisory board format. Election of officers, handbook, terms and general operational guidelines to enhance advisory board efficiency.
- Develop a plan to identify opportunities in the assessment and implement improvements.
- Increase presence at both internal and external recruiting events.
- Implement a continuous improvement cycle utilizing program outcomes, assessment results and action plans.

Program-Level
Student
Learning
Outcomes

Program Level Student Learning Outcomes

The program level student outcomes are included in the following pages. It should be noted that these outcomes are going to be reviewed and updated concurrent with the implementation of the AED Technical Assessment beginning with sophomores in spring 2018. Funding has been secured and testing will take place. Program level learning outcomes will be established utilizing the subject areas in the AED assessment. Benchmarking data provided by AED will support areas of opportunities to be identified as assessment results are compiled.

AED states:

- Assessment questions were created by a task force of 24 equipment technical experts broadly representing AED dealers, equipment manufacturers and technical colleges with equipment programs.
- The Assessment is aligned with AED National Construction Equipment Technical Standards that are now in their 7th edition. The "Standards" have been developed and updated by task forces with representatives from dealers, equipment manufacturers and technical colleges.
- The 160 questions evaluate current and future technicians' knowledge in the subject areas of diesel engine, power trains, electric/electronics, A/C and heating, hydraulics/hydrostatics, and safety/administration. These are the six key subject areas in AED's national technical standards.
- Assessment questions will be updated each time AED's national technical standards are updated.
- After completing the 120 minute timed assessment, each test-taker receives a "percent-correct" score for each of the above subject areas, as well as an overall score.

There is no pass/fail score for the assessment, however, benchmarking data is conveniently available and will expand as the test is increasingly used.



ANNOUNCEMENT

Mandatory Requirements for AED Accredited Construction Equipment Technology Programs

Effective immediately, The AED Foundation requires the following to better monitor and analyze individual and overall program performance, and provide better AED member program support, especially through the 5-year re-accreditation interval. These requirements are mandatory to retain AED Foundation Accreditation.

a. **AED Technical Assessments are required for all graduating students in AED Accredited programs to ensure that The AED Foundation can:**

- Continually monitor student learning and program performance.
- Obtain benchmark information that better reflects the collective results of all programs.
- Pursue status in the future as a U.S. government recognized accrediting organization.

NOTES:


- Colleges not currently using assessments will receive order and access information by separate email.
- OEM sponsored programs that require students to take the OEM's mandatory program-end assessment are exempt from this requirement.

b. **Program faculty are required to facilitate a process for graduating students to take a brief AED student survey that takes only a minute or so per student. We expect that you not just provide students with the URL, but set aside a time for this to be done, and bring them to the computer room to complete the survey.**

- **The access URL is: <https://www.surveymonkey.com/r/AEDStudentSurvey>. No password is required.**
- Survey is to be offered each semester during the last eight weeks of the program prior to students' graduation.
- Students have the right to decline to complete the survey; the survey has provision for them to do so in the first question. Nevertheless, it is understood that you will make a good faith effort to help us obtain as complete a list as possible.
- Questions asked are: School Name, Program Name, Student First Name, Student Last Name, Male-Female, Student Address1, Student Address2, City, State, Zip, Phone Number, Email Address, Employment Status, Company Name-Current or Future Employer, Salary Range.
- The Foundation's staff and Board of Directors need this information to evaluate AED Accreditation results and further develop the program. **The information is for the use of AED and The AED Foundation only, and will not be provided to any other person or organization.**

Please feel free to call if questions. Thank you in advance.

Best Regards,


Steven A. Johnson
Vice President Foundation Operations
Associated Equipment Distributors

▼ Outcome 1. Students will be able to communicate effectively. (Active)






Planned Year(s) of Assessment: Learning

Start Date:

End Date:

▼ Assessment Methods



▼ **Written Product (essay, research paper, journal, newsletter, etc.)** Students will understand and effectively use heavy equipment terminology in written documents. (Active)   

Criterion for Success: HEQT 230 Diesel Fuel Systems Technology and HEQT 240 Heavy Equipment Brakes and Suspension: Students will correctly use heavy equipment terminology in all written essays, quizzes/examinations and/or lab reports.

Assessment Schedule: Academic semester

Date Added: 03/02/2009

Active: Yes

Related Documents 

Assignment 

▼ **Presentation (Oral)** Students will prepare and deliver an oral presentation using correct heavy equipment terminology. (Active)   

Criterion for Success: HEQT 193 Industry Internship and HEQT 271 Heavy Equipment Automatic Transmissions: Students will prepare and present a final oral presentation.




Assessment Schedule: Academic semester

Date Added: 03/02/2009

Active: Yes

Related Documents 

Assignment 

▼ **Test - Internally Developed - Pre/Post or Post** Students will be able to identify heavy equipment terminology definitions. (Active)   

Criterion for Success: HEQT 201 Transport Refrigeration Systems: Students will identify heavy equipment terminology on quizzes and written examinations.




Assessment Schedule: Academic semester

Date Added: 03/02/2009

Active: Yes

Related Documents 

Assignment 

▼ **Outcome 2.** Students will have the ability to diagnose symptoms and malfunctions in primary heavy equipment systems as appropriate for their course of study. (Active)   

Planned Year(s) of Assessment: Learning

Start Date:

End Date:

▼  **Assessment Methods** 

▼  **Data Analysis** Students will diagnose alignment problems. (Active)   

Criterion for Success: HEQT 240 Brakes and Suspension: 80% of students will successfully diagnose and repair heavy duty truck alignment problems using the Hunter Heavy-Duty Alignment System in lab exercises.

Assessment Schedule: Academic semester

Date Added: 03/02/2009

Active: Yes

Related Documents 

Assignment 

▼  **Observations (e.g. Clinical or Field)** Students will diagnose fuel system problems. (Active)   

Criterion for Success: HEQT 230 Diesel Fuel Systems Technology: Students will take diesel fuel samples from various types of heavy equipment and correctly diagnose fuel malfunctions.





Assessment Schedule: Academic semester

Date Added: 03/02/2009

Active: Yes

Related Documents 

Assignment 

▼  **Test - Internally Developed - Pre/Post or Post** Students will diagnose problems and repair malfunctions in transport refrigeration systems. (Active)   

Criterion for Success: HEQT 201 Transport Refrigeration Systems: 80% of students will score 70% or better on the transport refrigeration systems performance test.

Assessment Schedule: Academic semester

Date Added: 03/02/2009

Active: Yes

Related Documents 

Assignment 

▼ **Outcome 3.** Students will have the ability to locate, comprehend and apply OEM service information, diagnostic procedures and service routines.   




 (Active)

Planned Year(s) of Assessment: Learning

Start Date:

End Date:

▼  **Assessment Methods** 

▼ **Service Project/Service Learning** Students will locate manufacturers product information for the Allison Automatic transmissions.   

 (Active)

Criterion for Success: HEQT 271 Heavy Equipment Automatic Transmissions: Students will successfully find manufacturers product information for the Allison Automatic transmission using the Allison World Transmission Service Training software.




Assessment Schedule: Academic semester.

Date Added: 03/03/2009

Active: Yes

Related Documents 

Assignment 

▼ **Service Project/Service Learning** Students will apply OEM service information & diagnostic procedures to align wheels on semi-trucks. (Active)   

 (Active)

Criterion for Success: HEQT 240 Heavy Equipment Brakes & Suspensions: Students will successfully obtain OEM service information & utilize diagnostic procedures to align wheels on a Ford semi-truck.

Assessment Schedule: Academic semester

Date Added: 03/03/2009

Active: Yes

Related Documents 

Assignment 

 **Related Goals** 

Assignment 

▼ **Outcome 4.** Students will know how to use specialized service and diagnostic equipment. (Active)

Planned Year(s) of Assessment: Learning

Start Date:

End Date:

▼ **Assessment Methods**

▼ **Service Project/Service Learning** Students will use specialized service and diagnostic equipment to align trucks. (Active)

Criterion for Success: HEQT 240 Heavy Equipment Brakes and Suspensions: Students will use the Hunter Heavy-Duty Alignment System to correctly diagnose the alignment on a Ford semi-truck.

Assessment Schedule: Academic semester

Date Added: 03/03/2009

Active: Yes

Related Documents

Assignment

▼ **Test - Internally Developed - Pre/Post or Post** Students will know how to use special tools and diagnostic equipment on transport refrigeration systems. (Active)

Criterion for Success: HEQT 201 Transport Refrigeration Systems: During a performance test, students will use the correct tools and diagnostic equipment to troubleshoot problems on a Carrier transport refrigeration unit.

Assessment Schedule: Academic semester

Date Added: 03/03/2009

Active: Yes

Related Documents

Assignment

▼ **Internship Evaluation** Student will use specialized service and diagnostic in a real-life industry setting. (Active)

Criterion for Success: HEQT 193 Industry Internship: Upon completion of industry internship, employer will evaluate the students use of specialized service and diagnostic equipment during their term of employment.

Assessment Schedule: Academic semester

Date Added: 03/03/2009

Active: Yes

Related Documents

Assignment

Related Goals

Assignment

▼ **Outcome 5.** Students will have the ability to function in accordance with established safety practices for the protection of self and others. (Active)

Planned Year(s) of Assessment: Learning

Start Date:

End Date:

▼ **Assessment Methods**

▼ **Test - Internally Developed - Pre/Post or Post** Students will demonstrate knowledge of proper shop safety practices. (Active)

Criterion for Success: HEQT 201 Transport Refrigeration Systems: 80% of students will achieve a grade of 70% or better on the safety questions asked on the HEQT 201 pre/post tests and demonstrate the use of proper shop safety practices during hands-on labs.

Assessment Schedule: Academic semester

Date Added: 03/03/2009

Active: Yes

Related Documents

Assignment

▼ **Observations (e.g. Clinical or Field)** Students will demonstrate the proper safe use of hand tools. (Active)

Criterion for Success: HEQT 101 Heavy Equipment Maintenance Fundamentals: Selecting the right tool to repair the hydraulics on a TD15 Dresser dozer, the student will show the proper and safe use of hand tools used in the heavy equipment industry.

Assessment Schedule: Academic semester

Date Added: 03/03/2009

Active: Yes

Related Documents

Assignment

Related Goals

Assignment

From: [Angie M Hollister](#)
To: [Gary S Maike](#)
Cc: [Roberta C Teahen](#)
Subject: RE: Heavy Equipment AED 1P1 testing
Date: Wednesday, July 19, 2017 1:22:05 PM

Thanks! I've sent a request over to add a FOAP for this fiscal year for third party testing. I will send that on to you once I have it. I will be in a budget line of \$1250 for your group of tests.

From: Gary S Maike
Sent: Wednesday, July 19, 2017 9:39 AM
To: Angie M Hollister <AngieHollister@ferris.edu>
Cc: Roberta C Teahen <RobertaTeahen@ferris.edu>
Subject: Re: Heavy Equipment AED 1P1 testing

approximately 25 students this year.

Sent from my iPad

On Jul 18, 2017, at 3:21 PM, Angie M Hollister <AngieHollister@ferris.edu> wrote:

Are you still expecting approximately 35 students taking the test at \$50 each? I will send a request over to Accounting to get a FOAP set up for this FY for this.

We sent the request to add this test to the State list last fall and it doesn't appear to be added as of yet, so I did forward this announcement on to them as well.

From: Gary S Maike
Sent: Tuesday, July 18, 2017 11:44 AM
To: Angie M Hollister <AngieHollister@ferris.edu>
Cc: Roberta C Teahen <RobertaTeahen@ferris.edu>
Subject: FW: Heavy Equipment AED 1P1 testing

Hello Angie. Please review the email string below. We are still awaiting the account number so that we can initiate the assessment from our accrediting body to our students. Our plans are to administer it Spring 2018.

Attached is a draft document from the AED Foundation. They will be requiring this assessment. Also, we are in the APR cycle this year so I need to address the status.

From: Gary S Maike
Sent: Thursday, September 29, 2016 4:44 PM
To: Debbie K Fisher <DebbieFisher@ferris.edu>
Subject: FW: Heavy Equipment AED 1P1 testing

1P1 testing status see below for <https://www.aed-technical-assessments.com/>

From: Roberta C Teahen
Sent: Friday, September 23, 2016 2:42 PM
To: Gary S Maike <GaryMaike@ferris.edu>
Cc: Angie M Hollister <AngieHollister@ferris.edu>
Subject: RE: Heavy Equipment AED additional

We will be submitting for state approval by Monday or Tuesday (sorry this got lost again), and YES we will pay for it. Work with Angie for account number.

Roberta C. Teahen, Ph.D.
Associate Provost for Accreditation, Assessment, Compliance, and Evaluation and
Director, Doctorate in Community College Leadership
Telephone 231-591-3805 (direct line)
Academic Affairs Office: 231-591-2300

From: Gary S Maike
Sent: Monday, September 12, 2016 1:54 PM
To: Roberta C Teahen <RobertaTeahen@ferris.edu>
Subject: Heavy Equipment AED additional

This is the reply to the last exchange concerning the AED test. See below from July 14, 2016

From: Gary S Maike
Sent: Thursday, July 14, 2016 3:18 PM
To: Roberta C Teahen <RobertaTeahen@ferris.edu>
Cc: Angie M Hollister <AngieHollister@ferris.edu>; Benjamin Q Upham <BenjaminUpham@ferris.edu>; Larry L Schult <LarrySchult@ferris.edu>
Subject: Re: Heavy Equipment program question

This should be submitted as a state approved test.

We are an AED member so we are at \$50 x approximately 35 students per year

Sent from my iPhone

On Jul 14, 2016, at 1:45 PM, Roberta C Teahen <RobertaTeahen@ferris.edu> wrote:

We apologize. This one slipped off our radar. We have confirmed that there are no tests listed for this field. So I have a couple questions:

1. Would you want us to submit this as a possible state-approved

test, which would then encourage others in the field to need to use this one for this CIP Code, and then you would have some comparative information, and/or

2. Can you estimate the total costs? The website says the test is \$50 for AED members and \$150 for non-members. Are we members, I hope? Estimated number of tests each year?

In general, I am very supportive of our paying for this from Perkins funds if it will provide some valuable input, and we just need to know how much we are committing.

Roberta C. Teahen, Ph.D.
Associate Provost for Accreditation, Assessment, Compliance, and Evaluation and
Director, Doctorate in Community College Leadership
Telephone 231-591-3805 (direct line)
Academic Affairs Office: 231-591-2300

From: Gary S Maike
Sent: Thursday, July 14, 2016 1:23 PM
To: Angie M Hollister <AngieHollister@ferris.edu>
Cc: Benjamin Q Upham <BenjaminUpham@ferris.edu>; Roberta C Teahen <RobertaTeahen@ferris.edu>; Larry L Schult <LarrySchult@ferris.edu>
Subject: FW: Heavy Equipment program question

Hello Angie. I haven't received a reply as of yet. Any progress?

From: Gary S Maike
Sent: Wednesday, June 29, 2016 3:34 PM
To: Angie M Hollister <AngieHollister@ferris.edu>
Cc: Roberta C Teahen <RobertaTeahen@ferris.edu>; Benjamin Q Upham <BenjaminUpham@ferris.edu>; Larry L Schult <LarrySchult@ferris.edu>
Subject: RE: Heavy Equipment program question

Thanks for the information. This is the correct CIP for Heavy Equipment. I looked up the description in nces.ed.gov as follows:

Detail for CIP Code 47.0302
Title: Heavy Equipment Maintenance Technology/Technician.

Definition: A program that prepares individuals to apply technical knowledge and skills in the field maintenance and repair of heavy equipment, and in the general maintenance and overhaul of such equipment. Includes instruction in inspection, maintenance, and repair of tracks, wheels, brakes, operating controls, pneumatic

and hydraulic systems, electrical circuitry, engines and in techniques of welding and brazing.

There is not an assessment for this CIP. After investigating the available assessments, our faculty have decided that the Associated Equipment Distributors Foundation technician assessment is the best choice. We are accredited by AED. Other AED accredited schools have been using this assessment. The advantage we see is that performance metrics are available to assist us in identifying areas that need attention.

Please let me know what the process is for using this assessment for our 1P1 Perkins reporting. Our program does not have the budget to cover the expense for this. Robbie indicated Perkins funds can be used for this purpose. Information about this assessment can be found at <https://www.aed-technical-assessments.com/>

From: Angie M Hollister
Sent: Wednesday, June 29, 2016 3:10 PM
To: Gary S Maike <GaryMaike@ferris.edu>
Subject: RE: Heavy Equipment program question

Hi Gary,
The CIP code for Heavy Equipment is 47.0302.

Please let me know if you have any other questions.

Thanks,
Angie

Angie Hollister | Administrative Assistant to Associate Provost
Ferris State University | Office of the Provost and Vice President for Academic Affairs
<image001.jpg> 1201 S. State Street - CSS 310H | Big Rapids, MI 49307
(231) 591-3537 office · (231) 591-3592 fax · AngieHollister@ferris.edu

From: Gary S Maike
Sent: Wednesday, June 29, 2016 2:49 PM
To: Angie M Hollister <AngieHollister@ferris.edu>
Subject: Heavy Equipment program question

Hello Angie. I am working on a Program Assessment for the Heavy Equipment. Debbie Dawson sent me a link with some of the information. <http://www.michigancc.net/resource/ca.aspx>

Can you tell me what CIP code you have listed for our program?

Gary Maike
Associate Professor/Program Coordinator
Ferris State University Heavy Equipment Program

Perceptions of Overall Quality

Ben Upham

Director

*Perceptions of Overall Quality
of the
Heavy Equipment Program*

I gave the Heavy Equipment program an overall quality score of 93 out of 100. A summary of my rating follows. Each category had a possible 12.5 points.

11.5 points *Mission of the program as it relates to the University & College*

The Heavy Equipment program epitomizes the mission of both the University and the College of Engineering technology. By giving the students the skill set that they will need to be successful in their careers, make wise choices in both their personal and professional lives, and to understand the need for continuing education the program and staff prepare students to be productive and responsible members of society.

12 points *Program visibility and distinctiveness*

The program is highly visible in both industry and academia. With the hundreds of graduates working in various positions within industry, teaching at the secondary and post-secondary levels, it's affiliations with the National Automotive Technician Education Foundation (NATEF) and the Association of Equipment Distributors (AED), and the fact that the program is the only school that offers a Baccalaureate degree in Heavy Equipment Service Engineering Technology (HSET) it has become highly visible.

12 points *Enrollment*

Over the last 5 years enrollment has been very consistent with only slight fluctuations of a few students. This has been accomplished during many changes in faculty and staff at the department level. Faculty continue to recruit at local schools, maintain industry contacts, and host training classes at their facilities as ways of promoting the program.

11 points *Quality and Employability of Students*

The students graduating from the HEQT program are of a high quality and extremely employable. This is evidenced by the number of potential employers that attend the career fair, hold information sessions and interviews, and the strong support of the advisory committee. This is in addition to the many donations and consignment agreements that are facilitated by faculty each year.

11.5 *Curriculum and Assessment*

Faculty have been working on putting outcomes and assessment data into TracDat and have been very successful. The curriculum has also been reviewed by NATEF and AED for compliance with their accreditation standards and has received very high assessments from each.

12 points

Quality of Faculty

The number of tenure track faculty has increased over the last few years to its current number of 4. At one point the number was down to 1 with many classes being taught by adjunct faculty. This increase in tenure track faculty has allowed the program to address things like enrollment, curriculum, accreditation, etc. The faculty all have extensive backgrounds in industry and most had some prior experience in teaching as well. They all attend regular industry training, participate on advisory boards, serve on committees at the university, and participate in extracurricular events both on campus and off. They hold the students to high standards and provide additional assistance when necessary.

11 points

Quality of Program Administration

The primary administration of the program is done by the Program Coordinator. He is responsible for the scheduling of classes, program budget, tours and recruiting, curriculum, assessment, program review, industry relations, and the day to day operation of the program. Gary Maike has been doing a great job at completing all of the tasks associated with the above responsibilities. He is typically on time or ahead of schedule with assignments and gets along well with all of the faculty and staff. He is very professional when facilitating the advisory committee meetings and they are always very productive.

12 points

Value to Stakeholders

The Heavy Equipment program is extremely valuable to all of its stakeholders. Students are able to gain skills in 2 – 4 years that could otherwise take them several years in industry to develop not to mention credentials (degrees) that they would, in some cases, not be able to achieve anywhere else. The students have a very high placement rate and a degree that is highly recognized in industry.

Industry is able to select from a pool of potential employees as their needs require. They have the opportunity to help guide the program and provide feedback that is very useful in the continuous improvement of the program. Industry can also take advantage of the expertise of the faculty to keep their employees trained through classes and seminars that are taught through the Heavy Equipment program and Corporate and Professional Development (CPD).

The Heavy Equipment program is of tremendous value to the University. It is the only 4 year degree of its kind in the country, it enjoys widespread industry recognition and support, and it has a very high placement rate. These things all support the University's mission and bring it national recognition.

Suggestions for Improvement

1. Update TracDat assessment results to show percentage of students that meet or exceed the minimum criteria. This will give a more accurate assessment of course effectiveness.
2. Establish schedules for student organizations working in the building.

3. Develop additional curriculum in the area of Telematics and GPS as it applies to the construction, trucking, and agriculture industries.

Summary

I feel the Heavy Equipment program is a solid curriculum that allows students the opportunity to fulfill their educational goals in a way that meets their learning style and supports industry's needs. With the changes that have taken place and the ones that will be occurring in the next 5 to 10 years the Heavy Equipment program is going to continue to be in high demand by our industry partners and is positioned in a way that it can grow with the demand.

Ben Upham
Director, School of Automotive & Heavy Equipment

Gary Maike

Program Coordinator/Associate
Professor

Perceptions of Overall Quality

Ferris State University Heavy Equipment Program

APR 2017/2018

Gary Maike

Heavy Equipment Associate Professor/Program Coordinator

Overall I would Rate the Heavy Equipment Program at Ferris State University as a 92%. This this would give the program a B+ on my grading scale. With slight improvements as planned, the grade would be A- and is very capable of an A. My rationale is as follow:

Mission of the program as it relates to the University & College

The Heavy Equipment program compliments the Mission of Ferris State and the College of Engineering Technology. The careers that the students enter into are in demand and have tremendous upward growth possibilities. The students are held accountable as responsible citizens as expected in the workplace. The commitment to lifelong learning is mandated because of the rapidly changing technologies encountered in this field. The careers are indeed global as information technology continues to be a prime frontier for the management of the equipment and trucks of tomorrow.

Program visibility and distinctiveness

This program is highly visible in industry and in education. Most of the teachers at secondary education programs in Michigan are alumni. Numerous others are instructors at post-secondary education programs around the country. The program was the first to be accredited (and the only Bachelor degree program accredited) by the Association of Equipment Distributor's Foundation (AEDF) and maintains the status to date. The program is also accredited by the National Automotive Technician Education Foundation (NATEF) in all areas of Medium/Heavy Duty Truck. The Bachelor degree attracts students from all over the US and internationally as well.

The program is hosting the AEDF National Educator Conference in June 2018. This was by invitation and will further enhance visibility.

In October we will be doing a press conference on campus with executives from Navistar (International Trucks) and West Michigan international to announce the donation of 6 late model trucks. This will be a highly visible event.

Another high visibility activity the program has been involved with is SkillsUSA. Our students placed as medalists in the SkillsUSA National Diesel Technology Competition in 3 of the last 4 years. This is high visibility because of the numerous secondary and post-secondary schools that participate. The contest itself is sponsored by many major donors and employers.

Enrollment

Enrollment for the Heavy Equipment program has been steady. We experienced a slight drop in some of the years in the middle of this APR cycle. I attribute this to the uncertainty that the program projected when we were down to 1 full time faculty member after retirements and ill-conceived administration actions. The previous director for SAH procrastinated and tried to hire a faculty member that was to go between AUTO and Heavy Equipment. Action was taken by myself to stop this as this faculty member was to be in the AUTO seniority group even though the positions were in Heavy Equipment.

This type of buffoonery causes all types of rumors and speculation for a program both within and outside of Ferris. I am pleased that the current administration has hired two new faculty members in this cycle and the fourth returned from administrative exile. With this stability, the perception is that our program is doing very well and is renewed and updated. Enrollment is up going into Fall 2018.

Characteristics, Quality and Employability of Students

Heavy Equipment students continue to arrive with high levels of interest and a passion for the industry. As with most CET programs, we are blessed with students that want to be here and are typically the best students from their secondary career centers and high schools.

In recent years the students seems to be better prepared for college. I feel that they are more deliberate in the degrees they seek and where they earn them. This bodes well for our program considering the opportunities that students have with our B.S. degree.

Our students enjoy exceptional employment opportunities. Many of these jobs are within Michigan with great positions also available across the country. These include educational, municipal, fleet, government, independent, distributor and OEM careers. Students have no difficulty finding internships. They are 100% employed upon graduation.

Quality of Curriculum and Assessment

The curriculum is in good shape. We will initiate a revision to the sequence of course this year as the result of an approved UCC curriculum proposal. This is in response to and with input from our advisory board. These focus is on aligning the course sequence to facilitate a more robust diagnostics and electrical/ electronic emphasis. The main goal was to move engines in the freshman year so that students are exposed earlier to the control systems that are prevalent on current systems.

We have been working with Institutional Research and Testing in implementing an assessment that serves our needs. We will begin using the AED Technical Assessment in Spring 2018 with our sophomores. This assessment is now approved by the State of Michigan for our CIP code as well as being suitable for Perkins assessment. This will be funded by Institutional Research and Testing.

Composition and Quality of Faculty

The faculty group in Heavy Equipment operates as a cohesive unit. Members work well together and the only conflicts that arise as a result of health competing for available resources in efforts to improve student experiences.

Three of the four faculty members have terminal degrees in Heavy Equipment. All of the faculty have (or will complete this year) Masters Degrees.

Composition and Quality of Program Administration

I feel as if this program has solid administration (up to and including the Provost). The program is not micromanaged and is allowed to run as the faculty group sees fit. Administration supports and assists as needed within normal constraints.

The largest administrative foible I see is the funding for the program. Budgets are fixed if not diminished. All parties want to see growth in the programs. The problem is that resources are not provided to support growth. If we were to add another section of students the lab supplies, equipment and intern travel expense would not be there to support this. The only way is to spread existing resources thinner among a larger student population. Administration needs to support programs to deal with variable expenses.

Overall Value of the Program to Stakeholders

The overall value of the program is very high to stakeholders. This is evidenced by the support the program receives from employers and alumni. Most of the equipment and educational support for the program comes from industry partners that seek our students for employment. This symbiosis benefits all stakeholders, including Ferris State University.

Darren Wilson

Associate Professor

Darren Wilson – Associate Professor
Heavy Equipment Technology

Perceptions of Overall Quality:

- On a scale of 1 -100 (with 100 representing the highest program quality achievable) rate the overall quality of the program.
- Summarize the reason(s) for the rating assigned.
- Outline recommended next steps to improve program quality.

Overall program score of 90.

The heavy equipment program has been a solid program in the college of engineering technology and a constantly growing program for the university. The success of this program is in large part due to the unconditional support that the program receives from its industry partners and alumni. Our program provides its students exceptional access to resources and equipment to gain a full range of experience with different equipment from many different heavy equipment industries.

The Heavy Equipment Center provides a teaching and learning environment for our students and faculty and other programs across the university. The quality of this facility has allowed our program to continue to grow and offer a more diverse line-up of equipment and technology for our students to have access to and build their knowledge and experience on. The level of experienced faculty has allowed for maximum attainment of knowledge skill level for our students.

The reason I rated our program 90 / 100 is due to the need to keep the heavy equipment facility maintained and in working order. Over the 30 years since the building was built many of the facility systems and tools have not been kept up and in working order.

Facility items that need attention:

- a) Compressed air system – needs system cleaned and maintained on an annual basis
- b) In floor hoist – while they are annually inspected, several of them fail to lift to their working capacity.
- c) Engine dynamometer cooling water – system has not been in operation for over 2 years. This system needs to be updated with newer dynamometers along with an overhaul of the cooling system.
- d) Fuel system – The diesel fuel supply to the building has been in repair for over 2 years. This repair needs to be completed so that the current fuel access points in the building can be utilized for classes.
- e) Tools and equipment – Many of the specialty tools are in need of repair or just worn out from normal use. Because of the growth in the program we are also in need of additional tooling to facilitate the number of students. All of the floor jacks and jack stands are over 30 years old and need to be updated with newer safer equipment.

All of these items can be addressed and resolved through collaborate efforts by the university, college, school and program members. Having open dialogue and developing a plan and working the plan can and will resolve many of these items I have outlined. All of these issues occurred over time and will take time to resolve. I am willing to work with the members of the university

to start identifying and developing a plan to make these repairs and to seek out the resources to update and secure additional equipment. Doing so will help maintain the quality of education our students seek when coming to Ferris. Recently increased scholarship funds has helped the program be “more affordable” to students but the facilities must be properly maintained for not only the program’s reputation for quality but for local, State and Federal safety regulations. One of the program’s missions is to provide our students with the job readiness skills needed to meet the needs of the heavy equipment industry. Our associate’s degree allows for more skill attainment and our bachelor’s degree allows for more knowledge attainment. This has been proven by the 100% job placement for both programs. Employers consistently seek out Ferris grads over other institutions because of the uniqueness of our programs and quality and experience of our graduates.

The Heavy Equipment Technology and Heavy Equipment Service Engineering programs at Ferris are committed to providing a quality education for our students and equipping them with the knowledge and resources needed to make a difference in the heavy equipment industry. We have done this through our commitment to accreditation. Our associate’s degree program is accredited with the (NATEF) National Automotive Technician’s Education Foundation and our bachelor’s degree program is accredited with the (AED) Associated Equipment Distributors. The faculty in both programs have many years of experience in the heavy equipment industry. Each member has the experience and educational credentials that has improved dramatically the overall quality of both programs. The current administration of the school of Automotive and Heavy Equipment has had a dramatic improvement by the depth of industry experience and connections to industry.

Since the inception of the heavy equipment program at Ferris in 1959, it has played a major role in educating current and future leaders and working members of the industry. Without this program thousands of technicians, parts personnel, supervising management, sales and owners of businesses and dealerships serving the heavy equipment industry would not have been able to provide the service and support needed to grow this industry to where it is today.

I consider it a great honor to be a part of this program at Ferris and look forward to helping to provide our students a quality education that will help each of them make a difference in the heavy equipment industry.

Austin Williams

Assistant Professor

Austin Williams – Assistant Professor

Ferris State University - Heavy Equipment Program

Perceptions of Overall Quality

- I rate the quality of the Heavy Equipment program at 95
- The following reasons are for the rating assigned:
 - Graduates are leaving with jobs
 - Strong industry support
 - Successful accreditations for the Associates and Bachelor's degrees
 - Up to date technology and equipment
 - Good student enrollment
 - Experienced and certified faculty
- The following are steps to improve program quality:
 - More partnerships with business and industry
 - Continued professional development and training
 - Faculty work together as a team
 - Funding to keep up with changing technology and tools

Dan Meyers

Assistant Professor

Dan Meyers – Assistant Professor

Ferris State University – Heavy Equipment Program

Perception of Overall Quality

Score: 91

Summary of Score

A score of 91 was awarded based upon Heavy Equipment's commitment to excellence and value to the College of Engineering Technology and Ferris State University as a whole. The Heavy Equipment program provides great value to its students by both teaching the necessary fundamentals of the industry and paving a path to employment through industry relationships. Strong relationships between faculty and industry have been built and fostered thus improving students' learning experiences through equipment donations and internships. In addition, the heavy equipment program strives to align its curriculum with industry needs on an ongoing basis through both formal advisory committee meetings and other informal means of communication. All Heavy Equipment faculty regularly participate in industry training in order to keep abreast of new technologies, which may be integrated into the classroom. Finally, all Heavy Equipment classes are taught in a mixed-delivery format with assignments varying between in-class lab activities and on-line assessments. The mixed-delivery format utilized in heavy equipment provides students with real world experience of on-line training that has become an industry standard.

The score provided indicates that room for improvement does exist. For example, technology is changing at a rapid pace. The program needs to continue to develop industry relationships and solicit more donations of newer equipment so that students are exposed to the latest technologies. Program enrollment is also another issue that needs to be carefully monitored and addressed. Finally, program tooling has aged and is in need of constant maintenance or replacement.

Recommended Steps to Improve Program Quality

Solicit on-highway manufacturers and/or distributors to provide a donation(s) of newer truck comparable to the off-highway donations that have been received in recent years.

Build relationships with high school programs throughout Michigan and neighboring states. Faculty should also participate directly in recruiting events at these high schools in order to help drive student enrollment.

A dedicated budget should be developed at the beginning of each school year so that tooling may be repaired or replaced on a continual basis.

Larry Schult

Dean

From: [Gary S Maike](#)
To: [Larry R Schult](#)
Subject: Heavy Equipment APR for Accredited Programs -
Date: Thursday, August 03, 2017 9:02:00 AM

Please provide your Perceptions of Overall Quality for the Heavy Equipment APR. I am doing a final review and am ready to submit this document to the UCC APR committee. I have attached the previous email that has details for the preparation of this document. Thanks

From: Gary S Maike
Sent: Thursday, July 06, 2017 10:15 AM
To: Larry R Schult <LarrySchult@ferris.edu>; Darren L Wilson <DarrenWilson@ferris.edu>
Subject: FW: APR for Accredited Programs

Please provide your Perceptions of Overall Quality for the APR. We need this by August 1st. I have attached the previous email that has details for the preparation of this document. Thanks.

From: Gary S Maike
Sent: Tuesday, March 21, 2017 10:47 AM
To: Darren L Wilson <DarrenWilson@ferris.edu>; Austin E Williams (AustinWilliams@ferris.edu) <AustinWilliams@ferris.edu>; Daniel J Meyers <DanielMeyers@ferris.edu>; Benjamin Q Upham <BenjaminUpham@ferris.edu>; Larry R Schult <LarrySchult@ferris.edu>
Cc: Joyce A Mudel <JoyceMudel@ferris.edu>
Subject: APR for Accredited Programs

We are up for Academic Program Review (APR) this cycle. Since we have accredited programs will not need to complete the full APR process. A brief synopsis of the program activity along with evidence of accreditation needs to be submitted.

One of the items that is required is a reflection by each of you that addresses your **Perceptions of Quality** for the program.

Please provide me with your document as outlined in the APR Guide below:

<http://www.ferris.edu/HTMLS/administration/academicaffairs/vpoffice/senate/progreviewcouncil/pdfs-docs/APRGuideforAccreditedProgramsUpdated20156222016.pdf>

Perceptions of Overall Quality

To be completed by:

- Dean
- Director / Department Head
- Chair / Coordinator
- Faculty teaching within the program

The process of program review is one element in a program's plan for continuous quality improvement. The overall rating assigned should be in consideration of the program as it relates to the following: relationship of the program's mission to its department, college, and the university; program visibility and distinctiveness; enrollment; the characteristics, quality, and employability of students; the quality of the curriculum and assessment; the composition and quality of faculty; the composition and quality of program administration; and the overall value of the program to stakeholders, including Ferris State University.

Perceptions of Overall Quality:

- o On a scale of 1 -100 (with 100 representing the highest program quality achievable) rate the overall quality of the program.
- o Summarize the reason(s) for the rating assigned.
- o Outline recommended next steps to improve program quality.

Gary Maike
Associate Professor/Program Coordinator
Ferris State University Heavy Equipment Program