Diesel/Heavy Equipment - Certificate - Full Review & SLOA

Current Compliance Year: 2022-2023
Full review

Recent Recommendations

Feedback will include recommendations from the last Expedited Review or from your most recent review by your school or college. You may not see any feedback or recommendations until you have completed your first full or mid-cycle review.

Response to Previous Recommendations (if any):

No previous recommendations are available to respond to.

Student Learning Outcomes

The previous Student Learning Outcomes Assessment has been submitted as its own report. Going forward you will use the following prompts to discuss the success of your most recent SLOA plan and address your assessment activities since your last SLOA report (typically the past two years or since your last program review).

Learning outcomes feedback from last review:

Feedback will be provided once you have completed a full or mid-cycle review.

Discuss your SLOA findings, changes you are making and what you hope to see as a result:

The Diesel/Heavy Equipment program has had a complete turnover in faculty. No collected data is available to analyze.

Discuss the curricular changes made based on assessing your SLO. If you haven't made any curricular changes, please explain why not and address what you did notice in the review, including strengths of your curriculum through the assessment of your outcomes:

The following curricular changes were made and went into effect starting fall of 2022.
- The course name of DSLT F107 was changed from Basic Electrical Systems and Electronic Fuel Injection to Basic Electrical Systems.
- DSLT F154 Diesel Fuel Injection was removed.
- The course name of MECN F103 was changed from Starting and Charging Systems to Advanced Electrical Systems.
- DSLT F254 was changed from 5 to 6 credits.

The purpose of these changes was to modernize program requirements to reflect the technological advancements and the increased utilization of electrical components in diesel technology and the decrease in the reliance on mechanical systems.
Prior to the change, DSLT F107 covered basic electrical systems and electronic fuel injection systems, and DSLT F154 covered mechanical fuel injection. As the fleet of heavy-duty trucks and equipment

that rely on mechanical systems has aged out and been retired, the need for a comprehensive mechanical fuel injection class (DSLT F154) has declined.
In response to these changes, the program determined that moving relevant mechanical fuel injection systems content to DSLT F254 and removing the DSLT F154 Diesel Fuel Injection course requirement would enable the program to better meet industry needs. To account for the additional time needed to teach the content moved to DSLT F254, the program increased DSLT F254 from 5 credits to 6 credits. In addition, to better reflect these changes in the industry, the program renamed DSLT F107 to Basic Electrical Systems and MECN F103 to Advanced Electrical Systems.

Are communication outcomes embedded in the SLOA Plan?
As of 2017 all Baccalaureate programs were required to embed the communication outcomes within their SLOA Plans, this is optional for non-Baccalaureate programs.

Embedded

Student Success

To access the Student Success Dashboard please sign into a UA computer with VPN connection (if not on campus). You will need your UA credentials and it is best accessed with the most updated version of Chrome, Edge, Firefox or Safari browsers; Internet Explorer is not supported. You will need to filter the data to see your programs. If you need assistance in finding the data for your programs, please contact your data liaison or Julia Manfredini in the PAIR office.

Data Liaisons
Each school or college has a team of Data Liaisons to help you analyze the data provided in the portal and may be able to help you see your data in multiple contexts. You can find a list of data liaisons on the resources page for Program Review.

The college or school level committee will also have access to this data with the goal that by providing these visualizations data availability will be increased.

Data supplied within the dashboard linked below is intended for Academic Program Review and not for any other purpose.

Student Success Data Dashboard

Previous Feedback
Feedback will be provided once you have completed a full or mid-cycle review.

Student Success Data Trends:

No change in majors,No change in degrees awarded,No change in SCH,No change in pass rates

If equity gaps were found in any of your disaggregated student success data, please explain how you plan to address those gaps. Please contact your data liaison or make an appointment with Julia Manfredini to learn more about analyzing your data.

No equity gaps were found.

Optional Data Explanation

Feel free to share more of your thoughts on the data provided.

The number of majors in 2018 is a data anomaly. The program is a cohort program with an absolute maximum capacity of 22 students per year.

High Impact Practices

According to the AAC&U, High-Impact Educational Practices "have been widely tested and have been shown to be beneficial to college students from many backgrounds." UAF is particularly interested in Undergraduate Research and/or Scholarly Activity because it is one of our mission fulfillment indicators, but all of these researched High-Impact Educational Practices should be reflected in your program's student learning outcomes and curriculum.

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

High-Impact Practices Used in this Program

Please use the following fields to discuss how your program is using the high-impact practices, successes and known issues and solutions, or ways you are considering incorporating them in the future. If you are not using any of the high-impact practices listed, please use the "Other or None of These," filed to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

None of these

Collaborative Assignments & Projects

Undergraduate Research

Diversity/Global Learning

ePortfolios

First Year-Seminars & Experiences

Writing-Intensive Courses

Service-Learning and/or Community-based Learning

Internships

Capstone Courses & Projects

Other or None of these (explain)

Program Profile and Financial Data

The program review elements in this section usually stay consistent for departments. Any responses you provide will be saved for your next visit. So, when it's time for the next program submission, your previous narrative profile answers will be here, ready for editing. You can then decide if any updates are necessary, based on your needs for the next program review cycle.

Financial Data Resources

The Board of Regents shapes program review, through BOR Policy 10.06, to support budget increase advocacy in the state legislature. The standardized financial data template should be analyzed with your data liaison to assess your program's capacity and resource status.

To keep integrity and remain standard across all of UAF it is very important that you do not provide any additional or alternative data.

Financial Template

Your data liaison may have uploaded your template to the Google folder for this program, or you may do so now.

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

Cost Effectiveness

How does your department/program approach being cost effective?

The program delivers 34 credits of coursework each year and has only one full-time faculty who in addition to teaching, coordinates the program and advises students. The program has one administrative assistant who is shared with the Automotive Technology and the Welding and Materials Technology programs.
The heavy/diesel program approaches cost-effectiveness by utilizing adjunct faculty and program assistants in the delivery of instruction. The program also relies on support from industry partners who donate and loan equipment for use in the program. The program also applies for and has been awarded TVEP funding to purchase equipment and trainers. Finally, in addition to tuition, students pay over [redacted] per semester in program material fees.

Program's Value to Mission

The diesel/heavy equipment program prepares students for employment as diesel mechanics in Alaska's construction, mining, and highway transportation industries. The program helps to support UAF's workforce development mission by developing workforce-ready graduates.

Duplicative Programs

Both UAA and UAA have diesel technology programs. UAA offers a certificate and AAS in Diesel Power Technology. UAS offers an AAS degree in Power Technology with an emphasis on Diesel. All three programs are tailored to meet industry needs in each local region. UAF's program focuses on meeting the needs of the mining, construction, and highway transportation industries. UAA's program focuses on meeting the needs of the maritime, construction, and highway transportation industries. UAS's program focuses on meeting the needs of the maritime and mining industries.

Community or Other Partnerships

The diesel/heavy equipment has important relationships with the following industry partners.
- Airport Equipment Rental
- Alaska Department of Labor and Workforce Development
- Alaska Department of Transportation and Public Facilities
- Alaska Operating Engineers/Employers Training Trust
- Alaska Waste
- Alaska West Express
- Bill Stroecker Foundation
- Carlile Transportation Systems
- CMI
- Cummins Northwest
- Fairbanks Northstar Borough School District
- Holland America Princess Lines
- Kenworth Alaska, Inc.
- Kinross Gold Corporation, Fort Knox
- Lynden Transport, Inc.
- Matheson Tri-Gas, Inc.
- NC Machinery
- Northern Star Resources, Pogo Mine
- RWC Group
- Trailer Craft
- Usibelli Coal Mine
- Volvo Truck Alaska
- Western Peterbilt

Value of Service Courses (Optional)

NA

Post-Graduate Success

Yes, the program prepares students for employment in the construction, mining, and highway transportation industries. The program does not have a formal job placement program but does work to connect students with employment opportunities and embeds career guidance into the program curriculum.

Submission

Submitter & Collaborator Names

Keith Swarner

Submitter Email

kswarner@alaska.edu

College or School Review Committee

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with strength-based feedback tags to attach to this program review. Please select as many as applicable.

Overall Recommendations

Explanation of Recommendations

Program is operating effectively based on the information provided. The SLOA assesment was not provided, so it is recommended that the program conduct it and reflect with college peers on results.

Student Learning Outcomes Assessment Feedback (tags)

Student Learning Outcomes Assessment Feedback (narrative)

Program appears to be self reflective in that it has made many curriculum changes to stay current with industry technological advances and standards. A recent assessment was not provided due to faculty turnover.

Profile Feedback

Strong ties to the community or industry,Program is mission-centric to UAF or college/school,Providing job placement for graduates,Strong post-graduation success for students

Financial Feedback

Operates at Low Cost,Productive Faculty

Student Success & Equity Feedback

Program appears to be healthy based on the data. There was a steep dip due to covid, but the program bounced back and is on the climb once again to exceed degrees awarded in AY 22 compared to per covid AY 18 numbers. The program operates as a co-hort and has a maximum enrollment of 22.

High-Impact Practices Feedback

Positive practices in that the program is built around hands-on delivery as is the nature of the work in the industry.

Dean's Review Feedback

I agree with the overall committee recommendations. The program has had faculty turnover in the last three years and the result is the lack of the SLOA assessment. This will be a part of the workload in the future. We also need to work to address the equity gap. It is a popular program puts students to work once they complete the program.

UNIVERSITY OF ALASKA FAIRBANKS

Student Learning Outcomes Assessment Plan

Diesel/Heavy Equipment Certificate

Community & Technical College

May 6, 2021

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: The Diesel/Heavy Equipment Program provides individuals with quality academic, technical and professional skills required for entry-level employment in the heavy equipment industry **GOAL STATEMENT:** Provide students the needed skills required for entry level employment in the diesel maintenance industry and related fields. Provide a unique learning environment where students can obtain a high quality classroom education, hands on training, and practical vocational experience in the Diesel/Heavy Equipment repair industry. Responsive to the needs of communities,	Students who complete the Diesel/Heavy Equipment Maintenance Technology Program will possess the skills and knowledge to become highly competitive candidates for job openings and promotions within the diesel/heavy equipment maintenance and related fields.	Graduates will secure employment in the diesel/heavy equipment maintenance or a closely related field or go on for additional education, training, or experience within one year. Students will take an exit exam to determine their skills in Diesel/Heavy Equipment Maintenance. Students who obtain a certificate will express satisfaction that the skills and knowledge they gained in the program was appropriate and adequate for their entry into the diesel/heavy equipment field.	Program Coordinator will track students and collect data every fall semester and provides this information to the program review committee. Program Coordinator will administer an exit exam each spring semester prior to completion of the program to assess learning outcomes. Program Coordinator will conduct Outcome Assessment Graduate questionnaire prior to graduation and disseminate the results to the Maintenance Technology Diesel/Heavy Equipment faculty.
	Employers of graduates of the Diesel/Heavy Equipment Program will be satisfied that these graduates possess the skills and knowledge necessary for entry-level positions in the diesel/heavy equipment maintenance field.	A questionnaire will be sent to employers of graduates every fall semester to gauge the programs efficiency of applied knowledge of the student going into the industry at entry level.	Program Coordinator will conduct survey of employers of graduates from previous two years and disseminate the results to the faculty.

industry and government throughout Alaska, Canada and the United States of America	Computation skills sufficient for employment as a Diesel/Heavy Equipment mechanic.	Students will take an exit exam to determine whether their computation skills are adequate for employment in Diesel/Heavy Equipment Maintenance.	Program Coordinator will administer an exit exam each spring semester prior to completion of the program to assess computation learning outcomes.
	Writing skills sufficient for employment as a Diesel/Heavy Equipment Mechanic.	Students will take an exit exam to determine whether their writing skills are adequate for employment in Diesel/Heavy Equipment Maintenance.	Program Coordinator will administer an exit exam each spring semester prior to completion of the program to assess computation learning outcomes.
	Oral communication skills sufficient for employment and understanding of human relations	Students will take an exit exam to determine whether their oral communication and understanding of human relations skills are adequate for employment in Diesel/Heavy Equipment Maintenance.	Program Coordinator will administer an exit exam each spring semester prior to completion of the program possess computation learning outcomes.

Fiscal Report for CTC Diesel/Heavy Equipment

	FY2020	FY2021	FY2022	Definitions for the compiling staff	Definitions for the programs and reviewing committees
Total Student Credit Hours (SCH)	365	498	555	Provided in SCH tab in the student success data provided by PAIR.	Total Student Credit Hours delivered in courses/subject codes attributable to the program/department. Comes from the data dashboard.
Service SCH	2	62	0	Sum rows labeled as "In unit, outside department, Service" and "Outside unit, Service" in the SCH tab of the data provided by PAIR.	*not able to pull DSLT subject code info from the SCH by Internal vs. Service Teaching data.
Department FTEs	1.53	1.21	1.03	FTE = Full-time equivalent employee. Use the worksheet below to calculate for each employee type, and then use the total from row 31 here.	FTE = Full-time equivalent employee. Fiscal staff have used the worksheet below to calculate for each employee type in this program/department's staffing.
Total SCH per Department FTE	238.44	413.01	538.31		Total SCH divided by employee FTE for the year. May give insight into departmental productivity scaled to the size of the department.
Service SCH per Department FTE	1.31	51.42	0.00		Service SCH divided by employee FTE for the year. May give insight into departmental productivity scaled to the size of the department.
Majors in Programs	17	17	21	Sum for all programs from the Majors Total tab in the data provided b	Total majors in the program (or all programs in the department), in the Majors table of the data provided by PAIR.
Department FTEs	1.53	1.21	1.03	From row 31 below or row 5 above	FTE = Full-time equivalent employee. Fiscal staff have used the worksheet below to calculate for each employee type in this program/department's staffing.
Majors per Department FTE	11.11	14.10	20.37		Total majors divided by employee FTE for the year. May give insight into departmental productivity scaled to the size of the department.
Total Unrestricted Expenditures	[redacted]	[redacted]	[redacted]	Total Expenditures made from budgets with an F1 or F7 fund type designation, from provided cycle report data filtered by Data Liasion	
Total Restricted Expenditures	[redacted]	[redacted]	[redacted]	Total Expenditures made from budgets with revenue of the F2 or S2 fund type designation, from provided cycle report data filtered by	
Total Unit/Central Support Allocated to Program(s)	[redacted]	[redacted]	[redacted]	Expenses incurred for direct support of instruction within orgs identified as central or academic support, if applicable	*Summed expenditures in any -ID or -IN PROG coded org.*
Tuition Revenue	[redacted]	[redacted]	[redacted]	Receipts to college from tuition generated by the department/program (F1). NOTE: under the current 80/20 percent tuition distribution model generating units receive 80%. PLEASE USE PAIR REPORTED SCH TO REPLACE ZEROES IN CELL CALCULATIONS.	
State Appropriation Revenue	[redacted]	[redacted]	[redacted]	Appropriations for current funds operation of the university from the general fund of the State of Alaska through the annual budget cycle. This category also includes TVEP and State Mental Health Trust funds, if allocated to the department. (F1)	Appropriations for current funds operation of the university from the general fund of the State of Alaska through the annual budget cycle.
Restricted/Sponsored Project Rev	[redacted]	[redacted]	[redacted]	Revenue from external sponsors; includes grants, contracts, sponsored projects & restricted (grant) accounts funded by UA Foundation funds (F2/S2)	Revenue from external sponsors; includes grants, contracts, sponsored projects & restricted (grant) accounts funded by UA Foundation funds
Fees	[redacted]	[redacted]	[redacted]	Course Fees (9159)	
Other UA Receipts/Revenue	[redacted]	[redacted]	[redacted]	e.g. Performance and Sales Receipts, Space Rental Revenue, Indirect Cost Recovery (F1/F7); NOTE: COURSE FEES (9159) REPORTED ABOVE	
Units	18	18	18	Department facultys' workload units assigned to teaching	
Workload allocation: Service Units	12	12	12	Department facultys' workload units assigned to service	
Workload allocation: Research Un	0	0	0	Department facultys' workload units assigned to research	

Full-time Equivalent Worksheet*	FY2020	FY2021	FY2022	
Faculty FTEs	0.75	0.75	0.75	**Base assumption: 12-month full-time = 1.0 FTE. 9-month = 0.75 FTE.** Split appointments are multiplied by the % of effort assigned to this department. Part-time are multiplied by the % of effort assigned. F9 faculty on sabbatical count as 67% of one 9-month 0.75 FTE (or 0.50 FTE).
Adjunct FTEs	0.550	0.23	0.05	**Base assumption: 40 units/credits = 1.0 FTE.** Total # of credits taught by adjuncts in a year divided by 40 = the FTE of adjuncts in that year.
Staff FTEs	0.231	0.231	0.231	**Base assumption: 12-month full-time = 1.0 FTE. 9-month = 0.75 FTE.** Split appointments are multiplied by the % of effort assigned to this department. Part-time are multiplied by the % of effort.
Graduate TA/RA FTEs	0.000	0.000	0.000	**Base assumption: 40 hours/week for 12 months = 1.0 FTE. 9-month = 0.75 FTE.**
Total Departmental FTEs	1.531	1.206	1.031	Sum of all employee FTEs

****Note: FTE definitions and calculations for the purpose of Academic Program Review are different than for other institutional reporting processes (e.g. OMB or IPEDS reporting)**

Student Learning Outcomes Assessment Summary

Diesel/Heavy Equipment Technology

Community and Technical College

AY 2020-21

Submitted by: Dan Powell
Contact Information: 455-2843
Date: May 06, 2021

1. **Assessment information collected in accordance with your SLOA plan**
   A.) Problem Solving
      a.) Students were given an exit exam to determine their knowledge and skills of each subject in all 14 courses.
   B.) Embedded Subjects.
      a.) Students were given an exit exam of embedded courses.
   C.) Job readiness skills.
   D.) Employer survey on graduate/ employee performance.

2. **Conclusions about student learning outcomes drawn from the information summarized above**
   A.) Problem Solving.
      a.) The students who participated, retained and showed satisfactory knowledge of the overall 14 courses but showed weaknesses with technical knowledge in these specific areas: Electrical, Emissions, and Hydraulics.
   B.) Embedded subjects of computation and communication were surveyed with the following results:
      a.) Exit survey showed weaknesses in critical thinking, print skills and basic grammar.
      b.) Multiple page essays, research projects, and public speaking tasks proved successful.
   C.) Job readiness skills
      a.) All students completed and passed resume clinic. They then applied to jobs in the industry. Cover letters and current resumes were collected for review. Graduates employed is up to 70% for FY 2020-21 and based on historical precedent expected to reach 100% by August 1, 2021.

C.) Employer survey on new or old skill needed to be emphasized.

a.) Employers were satisfied with graduates but need more experience with the latest diagnostic troubleshooting equipment related to electrical and emissions repair. Employers also emphasized the need for workplace professionalism, communication, and safety to be emphasized.

Note: Areas to address

A) Continue to work on general problem solving.

B) Focus more on work place professionalism and safety.

C) Soft and interpersonal skills for long term employment.

3. **Curricular changes resulting from conclusions drawn above**

   A.) Increase emphasis of the following courses:

   a.) Basic electrical.

   b.) Hydraulics.

   c.) Emissions.

4. **Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting**

   All the Diesel/Heavy Equipment changes were addressed by the Program Coordinator and Instructors, which consist of:

   Dan Powell
   Richard Sothern
   Jeremy Murphy
   Jordan Schaeffer