University of Alaska Southeast
POWER TECHNOLOGY
DIESEL PROGRAM

ASSESSMENT PLAN

Revised 3/2011

Associate of Science Degrees (2 emphasis areas):

Diesel Emphasis

USCG Documented Marine Oiler Emphasis

MISSION STATEMENT
DIESEL DEPARTMENT
UNIVERSITY OF ALASKA SOUTHEAST
JUNEAU

The department believes in providing specific job related skills, lifelong learning opportunities, and professional advancement for employment in various careers utilizing diesel engines and heavy equipment.

The department is dedicated to providing quality learning opportunities by providing small class size, superior training aids, and quality instructors that have many years of experience in the heavy equipment profession.

The department provides the tools, knowledge, and student internships that enable students to attain entry level employment and develop professionally.

The department offers programs that are designed to meet the diverse needs of the students by offering Occupational Endorsements, special interest courses, and courses required in the UAS POWER TECHNOLOGY AAS DEGREES.

TO COMPLETE THE ABOVE MISSION THE UAS DIESEL PROGRAM:

1. Develops, offers, and promotes courses that train students for entry level positions in the workplace.

2. Provides courses that enable students to upgrade existing skills or retrain for changing job markets.

3. Offers courses that are required by the department's programs or are needed by other departments or disciplines.

4. Strives to provide the latest methods and technology in training aids and tooling to keep current with new products that are found in the workplace.

5. Uses the expertise of local industry to maintain course relevancy by encouraging active participation of the diesel department advisory group.

6. Designs and provides special courses or programs when needed by the local job market.

7. Develops and maintains excellent working relationships with the business community, high school, and establish partnerships with public and private corporations in the industry.

8. Provides and encourages internship experiences that develop the bridge between student and workplace.

9. Recruits and retains the best possible full time and adjunct facility and provides professional development opportunities as needed to keep skills current.

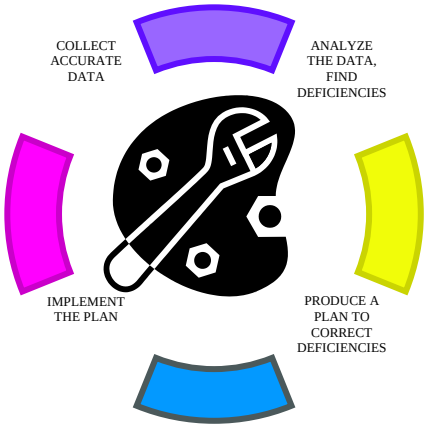
10. Provides a student friendly and nurturing atmosphere in the classroom and lab.

Assessment Plan

MARCH, 2011

AAS in Power Technology

DIESEL Emphasis



Methods and Measures

PROGRAM GOALS

GOAL #1. Graduating students will understand the operation, function, diagnosis, safety requirements, repair procedures and maintenance of diesel related machines, equipment, and their support systems.

STUDENT OUTCOMES FOR GOAL #1

1.1 Graduating students will have demonstrated the necessary mechanical skills, work habits, and social skills to successfully completed a 3rd or 4st semester internship in the diesel field.

1.2. Graduating students will be able to obtain an entry level position as a mechanic in the Diesel field.

1.3. Graduating students will have developed the necessary skill set enabling them to still be working in the industry 1 year after graduation.

GOAL #2. Program graduates will have demonstrated broad based proficiency in the six UAS competencies to the level needed to accomplish goal #1.

STUDENT OUTCOMES FOR GOAL #2

2.1. Graduates will have demonstrated the communication, social, ethical and moral skills and values needed to successfully function in multi-gender and multi-cultural work groups.

2.2. Graduates will have demonstrated the computational and critical thinking skills necessary to analyze, adjust, and trouble shoot complex systems in both metric and standard systems.

2.3. Graduates will have demonstrated they can successfully use the various information systems, reference materials, information hardware and software needed for operating, troubleshooting, and maintaining complex mechanical systems.

GOAL #3. Program graduates will appreciate the value of the machines and cost of down time of the units they will be working on.

STUDENT OUTCOMES FOR GOAL #3

3.1 Graduates will have demonstrated their time management ability and job organization skills.

3.2 Graduates will have demonstrated how to use reusability guidelines, maintenance schedules and the concept of repair before failure.

WHAT WE ARE GOING TO ASSESS:

GOAL #1. Graduating students will understand the operation, function, diagnosis, safety requirements, repair procedures and maintenance of diesel related machines, equipment, and related systems.

HOW WE ARE GOING TO ASSESS:

Direct Measures

A. Results of the State of Alaska Department of Transportation Commercial Drivers License written test given at their site.

Rubric:
Student % passing exam
50% =160%=2 70%=3 80% and up 4
Expected result: 3 or higher.

B. Results of the 4 Federal EPA refrigeration exams given online.

Rubric:
Student % passing all 4 exams
50% =160%=2 70%=3 80% and up 4
Expected result: 3 or higher.

C. Internship results and job longevity. Each level of performance has been given a number value: 1 is low, 4 is high.

Rubric:

1. Student has a successful internship DESL 291, 180 clock hours (Usually by the 4TH semester)

2. Student is still working in the DIESEL field after 1 year.

	BEGINNING 1	DEVELOPING 2	COMPETENT 3	ACCOMPLISHED 4
INTERNSHIP PERFORMANCE At end of internship	**Student gets a poor evaluation for internship**	**Student gets a satisfactory evaluation**	**Student get a good evaluation**	**Student gets an excellent evaluation**
LONGEVITY 1 year after UAS	**Not employed in the DIESEL sector**	**Still working in DIESEL sector summers**	**Still working in DIESEL part time**	**Still working in DIESEL full time sector over 1 year**

Indirect Measures

B. Results of student's Pre-course / Post-course exit survey they fill out. Rating is scaled 1-10 on student's self rating of content before and after taking the specific courses in the program.

Rubric:
Students with a gain in average points per class on class exit survey
2-3 = 1, 4-5 =2, 6-7 = 3, 7-10 = 4
Expected result:

WHEN WE ARE GOING TO ASSESS:

At the time the student completes their internship
At the end of the school year (May 1)
At 1 year after graduation from UAS

HOW WE ARE GOING TO OBTAIN THE NECESSARY INFORMATION:

The internship supervisor will be contacted on the assessment of the student's skills and performance at the conclusion of the internship.

- Which skills was the student proficient in
- Which skills was the student weak in
- Would the student be able to get and hold a position?
- What would the supervisor advise to change course content?

After the program graduate has been out of school for 12 months they will be contacted and their employment status will be obtained.

PROGRAM ANTICIPATED RESULTS:

- For the INTERNSHIP measure we initially expect to have an average result of COMPETENT 3.
- For the LONGEVITY results we initially expect to have an average result of DEVELOPING/ACCOMPLISHED 3.

- For the EPA written exam we expect to have an average result of 3.
- For the DOT written exam we expect to have an average result of 3.
- For the STUDENT self assessment pre post exit survey we expect an average of 3.

USING THE RESULTS:

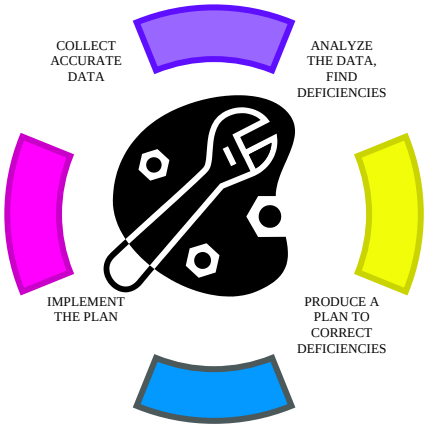
If the results are lower than the ANTICIPATED results, a plan to correct the deficient area(s) will be implemented. This may result in a course content modification, addition or removal.

Assessment Plan

MARCH, 2011

AAS in Power Technology

USCG DOCUMENTED MARINE OILER Emphasis



Methods and Measures

PROGRAM GOALS

GOAL #1. Program graduates will understand the necessary technical information required to pass the USCG Oiler Written Exam and the USCG STCW 95 check-off sheets.

STUDENT OUTCOMES for GOAL #1:

1.1. Graduates will be able to pass the USCG written Oiler exam and receive their USCG Merchant Marine Document with an Oiler endorsement.

1.2. Graduates will have successfully spent 1440 hours on board a large vessel interning in the engine room and also had the "Standards of Training, Certification, and Watch keeping" (STCW 95) signed off.

GOAL #2. Program graduates will have demonstrated proficiency in the six UAS competencies to the level needed to accomplish goal #1.

STUDENT OUTCOMES for GOAL 2:

2.1. Graduates will have used their communication, social, ethical and moral skills and values needed to successfully function in multi-gender and multi-cultural work teams found on large vessels.

2.2. Graduates will have demonstrated the computational and critical thinking skills necessary to analyze, adjust, and trouble shoot complex systems in both metric and standard systems found in large vessels.

2.3. Graduates will have demonstrated they can successfully use the various information systems, reference materials, information hardware and software needed for operating, troubleshooting, and maintaining complex mechanical systems found on large vessels

GOAL #3. Program graduates will have the understanding of what is required to be part of an engine room team at sea.

STUDENT OUTCOMES for GOAL 3:

3.1. Graduating students will be able to obtain an oiler position on a fill in relief basis

3.2. Graduating students will be able to obtain an oiler position on a seasonal basis or full time basis

WHAT WE ARE GOING TO ASSESS:

Goals #1 and #3 are going to be assessed.

HOW WE ARE GOING TO ASSESS

Direct measures

1. Graduates will be given a written oiler examination by the USCG at their faculty.
2. Graduates will obtain employment as an oiler.
3. Graduates will be in the marine profession after 1 year

Indirect measures

1. The Chief engineer will fill out an evaluation sheet on the oiler candidate's performance during their 1440 hour internship.
2. The graduating students will fill out a survey after the oiler exam.
3. The graduates results on Pre-course / Post-course exit survey.

GOAL #1. Program graduates will understand the necessary technical information required to pass the USCG Oiler Written Exam and the USCG STCW 95 check-off sheets.

1.1 Graduates will be able to pass the USCG written Oiler exam and receive their USCG Merchant Marine Document with an Oiler endorsement.

1.2 Graduates will have successfully spent 1440 hours on board a large vessel interning in the engine room and also had the "Standards of Training, Certification, and Watch keeping" (STCW 95) signed off.

	BEGINNING 1	DEVELOPING 2	COMPETENT 3	ACCOMPLISHED 4
PASSES USCG OILER EXAM (Given after exam)	**Does not pass the USCG oiler exam**	**Passes the USCG oiler exam on third try**	**Passes the USCG oiler exam on second try**	**Passes the USCG oiler exam on first try**

GOAL #3. Program graduates will have the understanding of what is required to be part of an engine room team at sea.

3.1 Graduating students will be able to obtain an oiler position on a fill in relief basis

3.2 Graduating students will be able to obtain an oiler position on a seasonal basis or full time basis

	BEGINNING 1	DEVELOPING 2	COMPETENT 3	ACCOMPLISHED 4
LONGEVITY Given at 1 year after exam	**Not employed in marine sector at all**	**Still working in marine Fill-in only**	**Still working in marine -Summer only**	**Still working in marine sector over 1 years,**

Expected result for goal 3 is 3

WHEN WE ARE GOING TO ASSESS:

- At the time the student passes the oiler exam (or tries more than 3 times)
- After the internship is completed
- At 1 year after the oiler exam was passed

HOW WE ARE GOING TO OBTAIN THE NECESSARY INFORMATION:

The program graduate will complete a self assessment of the USCG oiler exam after they pass it (or fail for the third time). The assessment will ask at least:

- Which area(s) of the exam modules were the hardest (and easiest) for them.
- How many attempts did it take to pass the exam?
- Amount of study time did they have to put in after they were done with the UAS class portion of the program.
- What did they find was the best study guide for the exam?
- What content or study areas do they feel should be added (or removed from) the UAS oiler classes.
- What area(s) caused them to not be able to pass the exam at all?

After the program graduate has had their oiler document 1 year they will be contacted and their employment status will be obtained and verified.

PROGRAM ANTICIPATED RESULTS:

- For the USCG exam results we initially expect to have an average result of COMPETENT (3)

- For the EMPLOYMENT results we initially expect to have an average result of DEVELOPING (3)

- For the LONGEVITY results we initially expect to have an average result of DEVELOPING/ACCOMPLISHED (3)

USING THE RESULTS:

If the results are lower than the ANTICIPATED results, the Diesel Advisory Committee will be informed and a plan to correct the deficient area(s) will be implemented. This plan may result in a syllabus modification, course addition or course deletion.

TOOLS USED FOR ASSESSMENT

EXAMPLE OF A PRE-COURSE
POST-COURSE SELF ASSESSMENT
DESL 110 DIESEL ENGINES

Pre course / Post course
SELF ASSESSMENT

NAME_____DATE_____

THIS IS NOT, REPEAT NOT A TEST. THIS HELPS US SEE WHERE WE ARE – AND WHERE WE WENT IN THIS COURSE.

On a scale of **1-10 (1 being can't do at all, 10 being can do every time WITHOUT MISTAKES)** what do you feel that you could NOW:

(A) Remove and adjust diesel fuel injection nozzles to the correct popping pressure

1 2 3 4 5 6 7 8 9 10

(B) Correlate the operational differences between a DI and PC type engine

1 2 3 4 5 6 7 8 9 10

(C) Compare the operational differences and advantages between a NA, T, TA, and TA SCAC engine

1 2 3 4 5 6 7 8 9 10

(D) Understand MARINE engine ratings

1 2 3 4 5 6 7 8 9 10

(E) Purge air out of an injection system

1 2 3 4 5 6 7 8 9 10

(F) Use a parts and service book correctly to repair engines

1 2 3 4 5 6 7 8 9 10

(G) Understand the different types of injection systems

1 2 3 4 5 6 7 8 9 10

(H) Make reuse decisions of engine components

1 2 3 4 5 6 7 8 9 10

(I) use and interpret oil sampling results

1 2 3 4 5 6 7 8 9 10

(J) Grind valves and seats in a head, remove and install a seat

1 2 3 4 5 6 7 8 9 10

(K) Find TDC #1 cylinder compression stroke using overlap

1 2 3 4 5 6 7 8 9 10

(L) Intelligently discuss the differences between 2 and 4 stroke diesel engines

1 2 3 4 5 6 7 8 9 10

(M) Use ***plastigage*** to measure oil clearances

1 2 3 4 5 6 7 8 9 10

(N) Safely work around injection systems

1 2 3 4 5 6 7 8 9 10

(O) Understand engine systems and operation

1 2 3 4 5 6 7 8 9 10

(P) Be able to make reuse decisions on engine components

1 2 3 4 5 6 7 8 9 10

(Q) Use a torque wrench properly

1 2 3 4 5 6 7 8 9 10

(R) Identify bolt and nut grade and sizes

1 2 3 4 5 6 7 8 9 10

(S) Locate the correct service publication for a diesel engine

1 2 3 4 5 6 7 8 9 10

(T) Properly assemble a diesel engine

1 2 3 4 5 6 7 8 9 10

(U) Use a dial caliper & micrometer correctly

1 2 3 4 5 6 7 8 9 10

(V) Understand 2 and 4 cycle engine differences

1 2 3 4 5 6 7 8 9 10

(W) Distinguish between cause and effect when looking at symptoms

1 2 3 4 5 6 7 8 9 10

(X) Determine the approximate operational life of an engine

1 2 3 4 5 6 7 8 9 10

(Y) What is 67% of 2675 psi? _____

(Z) Properly start up a diesel engine after repair

1 2 3 4 5 6 7 8 9 10

UNIVERSITY OF ALASKA SOUTHEAST JUNEAU
POWER TECHNOLOGY DEPARTMENT
DIESEL PROGRAM

OILER CANDIDATE
INTERNSHIP ASSESSMENT

TO: Chief Engineer

FROM: Chuck Craig, UAS OILER PROGRAM

OILER CANDIDATE: **DATE:**

AMHS Vessel Name:

THE ABOVE OILER SATISFACTORILY COMPLETED THEIR 1440 HOUR INTERNSHIP. YES NO
COMMENTS:

PLEASE RETURN THIS TO: chuck.craig@uas.alaska.edu

UNIVERSITY OF ALASKA SOUTHEAST JUNEAU
POWER TECHNOLOGY DEPARTMENT
DIESEL PROGRAM

OILER CANDIDATE PROGRAM ASSESSMENT
SELF-EVALUATION

TO:

FROM: Chuck Craig, UAS OILER PROGRAM
OILER CANDIDATE _____DATE_____

1. Which area(s) of the USCG oiler exam modules were the hardest for you to pass?

2. How many attempts did it take to pass the total oiler exam?

3. What did you find was the best study guide for the oiler exam?

4. What content or study areas do you feel should be added (or removed from) the UAS oiler classes?

5. What area(s) caused you to not be able to pass the exam at all?

Additional Comments:

Current position

Employer:
Vessel:
Position:
Approximate sea time since getting your oiler document:

PLEASE RETURN THIS TO: chuck.craig@uas.alaska.edu

UNIVERSITY OF ALASKA SOUTHEAST
UAS DIESEL DEPARTMENT
AAS DEGREE/ DIESEL

INTERNSHIP RESULTS

STUDENT NAME_____
PLACE OF INTERNSHIP_____
SUPERVISOR_____
Date_____

Which skills was the student the strongest in:
Put S below

Which skills was the student weakest in:
Put W below

Do you feel the students could get and hold a position as an entry level mechanic in the diesel profession?

Other comments:

List of competencies (if applicable):

RATINGS **(**4 high – 1 low**)**

Oral Communication Skills

Getting along with co-workers

Following directions

Basic mechanical operation concepts

Basic mechanical skills

Troubleshooting

Maintenance and servicing of equipment

Repairing components

CURRICULUM MAP AAS DIESEL

I= Introduce D=Develop P=Proficient

GOAL #1. Graduating students will understand the operation, function, diagnosis, safety requirements, repair procedures and maintenance of diesel machines, equipment, and their support systems.	DESL 110 diesel engines	DESL 125 basic hydraulics	DESL 263 marine transmissions	DESL 171 hd electrical systems		DESL 260 hd power trains	DESl 261 marine auxiliary systems lec	DESL 262 marine auxiliary systems lab	DESL 255 hd suspension & align	DESL 250 hd brakes & CDL prep	DESL 105 fuel systems	DESL 180 AC power generation	DESL 130 refrigeration and air	WELD 120 basic welding	DESL 291 hd internship
1.1 Students will have demonstrated the necessary mechanical skills, work habits, and social skills to successfully completed a 3rd or 4st semester internship in the diesel field.	I	I	I	I		I	I	D	ID	ID	ID	D	I D	I	DP
1.2. Graduating students will be able to obtain an entry level position as a mechanic in the diesel field.	I	I	I	I		ID	I	ID	ID	ID	ID	ID	ID	I	DP
1.3. Graduating students will have developed the necessary skill set enableing them to still be working in the industry 1 year after graduation	I	I	I	I		ID	ID	ID	ID	ID	ID	ID	ID	I	DP

AAS DIESEL																
GOAL #2. Program graduates will have demonstrated broad based proficiency in the six UAS competencies to the level needed to accomplish goal #1.	DESL 110 diesel engines	DESL 125 basic hydraulics	DESL 263 marine transmissions	DESL 171 hd electrical systems		DESL 260 hd power trains	DESI 261 marine auxiliary systems lec	DESL 262 marine auxiliary systems lab	DESL 255 hd suspension & align	DESL 250 hd brakes & CDL prep	DESL 105 fuel systems	DESL 180 AC power generation	DESL 130 refrigeration and air	WELD 120 basic welding	DESL 291 hd internship
2.1. Graduates will have demonstrated the communication, social, ethical and moral skills and values needed to successfully function in multi-gender and multi-cultural work groups .	ID	I	I	I		ID	I	D	D	D	D	D	D	I	DP
2.2. Graduates will have demonstrated the computational and critical thinking skills necessary to analyze, adjust, and trouble shoot complex systems in both metric and standard systems.	IDP	ID	I	I		D	I	D	D	D	D	D	D	I	DP
2.3. Graduates will have demonstrated they can successfully use the various information systems, reference materials, information hardware and software needed for operating, troubleshooting, and maintaining newer complex mechanical systems.	Id	I	I	I		I		ID	I	I	ID	I	I		DP
GOAL #3. Program graduates will appreciate the value of the machines and cost of down time the units they will be working on.	DESL 110 diesel engines	DESL 125 basic hydraulics	DESL 263 marine transmissions	DESL 171 hd electrical systems		DESL 260 hd power trains	DESI 261 marine auxiliary systems lec	DESL 262 marine auxiliary systems lab	DESL 255 hd suspension & align	DESL 250 hd brakes & CDL prep	DESL 105 fuel systems	DESL 180 AC power generation	DESL 130 refrigeration and air	WELD 120 basic welding	DESL 291 hd internship
3.1 Graduates will have demonstrated their time management and job organization skills.	IDP	I	I	I		D		D	D	D	D	I	I	I	DP
3.2 Graduates will have demonstrated how to use reusability guidelines and the concept of repair before failure.	ID	ID	I	I		D		D	D	D	D	I	I		DP

CURRICULUM MAP AAS DEGREE OILER EMPHASIS

UNIVERSITY OF ALASKA SOUTHEAST

I= Introduce D=Develop P=Proficent

GOAL #1. Program graduates will understand the necessary technical information required to pass the USCG Oiler Written Exam and the USCG STCW 95 check-off sheets.	DESL 110 diesel engines	DESL 125 basic hydraulics	DESL 161 marine hydraulics	DESL 171 hd electrical systems	DESL 263 marine transmissions		DESL 180 AC power generation	DESL 105 fuel systems	MT 129 basic safety training	DESl 261 marine auxiliary systems lec	DESL 262 marine auxiliary systems lab	DESL 130 refrigeration and air	WELD 120 Basic Welding	DESL 291A AMHS Internship
OUTCOMES for GOAL 1:														
1.1 Graduates will be able to pass the USCG written Oiler exam and receive their USCG Merchant Marine Document with an Oiler endorsement.	ID	ID	ID	ID	ID		ID	ID	ID	ID	I	ID	I	DP
1.2 Graduates will have successfully spent 1440 hours on board a large vessel interning in the engine room and also had the "Standards of Training, Certification, and Watch keeping" (STCW 95) signed off.	ID	ID	ID	ID	ID		ID	ID	ID	ID	ID	DP	ID	DP

AAS OILER														
GOAL #2. Program graduates will have demonstrated proficiency in the six UAS competencies to the level needed to accomplish goal #1.	DESL 110 diesel engines	DESL 125 basic hydraulics	DESL 161 marine hydraulics	DESL 171 hd electrical systems	DESL 263 marine transmissions		DESL 180 AC power generation	DESL 105 fuel systems	MT 129 basic safety training	DESl 261 marine auxiliary systems lec	DESL 262 marine auxiliary systems lab	DESL 130 refrigeration and air	WELD 120 Basic Welding	DESL 291A AMHS Internship
OUTCOMES for GOAL 2:														
2.1. Graduates will have used their communication, social, ethical and moral skills and values needed to successfully function in multi-gender and multi-cultural work teams found on large vessels.	ID	I	I	I	I		I	ID	ID	D	D	D	I	DP
2.2. Graduates will have demonstrated the computational and critical thinking skills necessary to analyze, adjust, and trouble shoot complex systems in both metric and standard systems.	ID	ID	ID	ID	ID		ID	ID		I	D	ID	I	DP

AAS OILER														
OUTCOMES for GOAL 3:														
GOAL #3. Program graduates will have the understanding of what it takes to be part of an engine room team at sea	DESL 110 diesel engines	DESL 125 basic hydraulics	DESL 161 marine hydraulics	DESL 171 hd electrical systems	DESL 263 marine transmissions		DESL 180 AC power generation	DESL 105 fuel systems	MT 129 basic safety training	DESI 261 marine auxiliary systems lec	DESL 262 marine auxiliary systems lab	DESL 130 refrigeration and air	WELD 120 Basic Welding	DESL 291A AMHS Internship
3.1 Graduating students will be able to obtain an oiler position on a fill-in relief basis	D	D	D	D	D		D	D	I	I	DP	D	I	DP
3.2 Graduating students will be able to obtain an oiler position on a seasonal basis or full time basis	D	D	D	D	D		D	D	I	I	DP	D	I	DP