

DSLTF210 – HEAVY EQUIPMENT FABRICATION

Instructor: Brian Rencher

Class Dates:

Room: 147 Hutch

Office Hours: 2:00pm – 9:00pm

Office Phone: 907-455-2843

Cell Phone: 907-460-6332

E-mail: bkrencher@alaska.edu

Hours: Monday – Friday

Theory 3:00pm – 5:00pm

Dinner 5:00pm – 5:30pm

Shop/Lab 5:30pm – 8:30pm

Supplies required:

Reading material: Welding Principles and Applications

Misc hand tools: Per handout

Protective clothing: Coveralls with sleeves

Protective footwear: Above ankle boots

Eye protection: Safety glasses

Misc materials: Paper pad and pen (for instructions)

Course goals:

Students will learn advanced concepts of industrial fabrication in the maintenance of heavy duty equipment, develop a strong understanding of metals and their applications, and have the ability to bend, heat, and apply welding techniques that will support heavy duty equipment for long term use.

Course objectives:

Upon completion of this course, the student should have the following:

1. Ability to perform intermediate fabrication skills on equipment
2. Identify different types of metals
3. Knowledge of heating techniques
4. Ability to bend heavy duty metals
5. Knowledge of which weld to use when, under what application

Course policies:

- Cell phones are not permitted during class hours (theory or shop/lab).
- A thirty minute break will be given between theory and shop/lab at 5:00pm. This thirty minute break for lunch is the only allowable break without instructor's permission.
- No smoking inside the building or on school property at any time (per CTC/Hutchison Policy)

- All students are governed by the UAF Student Code of Conduct as it is applicable.
- Safety glasses are to be worn at all times in the shop area.
- Textbook, paper pads and pen are to be brought to class every day.
- During a fire alarm, students will gather in the CTC parking area with others from the class and will stay there until authorized by the instructor.
- Students are required to use a time clock when starting the day, going to lunch, returning from lunch and ending the day. Students are also required to keep a daily log of shop/lab projects. This will be discussed on a weekly basis between student and instructor as well as the previous week's grading point.
- Each student is responsible for documenting requirements on procedures in the shop/lab. (Example: When given instruction on a project, it is the student's responsibility to write down the given tasks.)
- All CTC shop tools are to be signed out by the daily assigned Forman of the shop and are to be returned at the end of each day to the instructor/Forman.
- Students are required to be working the entire time while in shop/lab. If your task is complete, you are expected to clean the shop, study text book or service manual, or ask the instructor for a task to fill in time.
- Each student is responsible for cleaning their own work area on a daily basis and keeping it clean and orderly throughout the day. No students are to remove coveralls or leave for the day until the entire shop is clean and authorized by the instructor/Forman.
- When lifting any item over an estimated 40 lbs, ask instructor for approval.
- When using the overhead hoist, cranes, roll around picking hoist or forklift for lifting, you **MUST** get instructors approval of the rigging before lifting.
- Any student that is injured during class is required to inform the instructor immediately, no matter how minor the injury.
- No earphones or personal music devices are allowed during class theory or shop/lab.
- Students that do not follow the above outlined regulations can be withdrawn from the diesel program by the instructor.

The following is the grading scale for this class:

Attendance					25%
Instructor Evaluation/Hands on Performance					25%
Exams					50%
GRADE POINTS					
A > 90%	B = 85% - 89%	C = 80% - 84%	D = 70% - 79%	F < 69%	

Grading policies:

- 80% Attendance is required.
- 25% of your grade will be based on attendance, participation and completed engine performance based on the instructor's evaluation.
- 25% of your grade per week is determined by a once-a-week exam quiz, either written or verbal.

- Grading safety is an important part of this course and this industry, therefore any safety violations will result in a loss of 50% of daily points.
- A student, who is unable to attend class, should call and inform the instructor before class starts or make previous arrangements. This will allow students two points for the missed day. Otherwise zero points will be given for the missed day. Students can call office at 455-2843 if the instructor is not able to be reached.
- If a student is absent, it is their responsibility to get the information that was covered during their absence. The student is expected to take the weekly test/exam at the same time as all the other students in the class regardless of absenteeism.
- Exams/quizzes will be given once a week. Any make-ups will be dealt with on an individual basis.
- Tardiness is defined as up to one hour from class start time and will result in a loss of two points for the day.

This system cannot be altered after the first class meeting

NOTICE TO STUDENTS

Support Services

The following services are available to all students: The Writing Center (8th floor, Gruening, 474-5314) and the Math Lab (305 Chapman), both of which provide excellent advice, tutoring and assistance; and/or Office of Student Support Services (508 Gruening, 474-6844). Also available is the Student Assistance Center at CTC which offers many services such as: academic advising, placement testing, career assessment, career counseling, computer support, math labs, tutors/tutoring, and a writing center. The center is located at 604 Barnette St. and is open M-F from 8am-5pm. For more info contact the center at 455-2899.

Disabilities Services

The office of Disability Services, 204 WHIT, 474-7043, implements the Americans with Disabilities Act (ADA), and insures that UAF Students have Equal Access to the campus and course materials. The CTC Office of Student Assistance can also help you if you have any of these concerns. Contact them at 455-2899 if you need help.

UAF Disability Services for Distance Students

UAF has a Disability Services office that operates in conjunction with the Community and Technical College. Disability Services, a part of UAF's Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eligible for these services.

Any student who feels discouraged or disappointed with instruction, curriculum or other, please notify the Diesel Coordinator, Brian Rencher at 907-455-2843 or the Student Assistant Coordinator, Michelle Stalder at 907-455-2849.

EMERGENCY PROCEDURES

1. Evacuation procedures – see instructions posted in the classroom.
2. First aid kit – located in Equipment Shop 147.
3. Emergency ambulance – from any available telephone, phone “9” to get an outside line, then “911.” Campus Police – phone 474-7721 In an “Emergency” dial “911”

COURSE OUTLINE:

Day 1: Go over Syllabus

Review: Safety – Safety Video

Review: Use of oxygen/acetylene torches and plasma torches

Review: Metal types

Review: Heating metals

Day 2: Chapter 3 – Shielded Metal Arc Equipment

Video: Use of shielded metal arc fabrication

Lab: Instructor demo – using the shielded metal arc welding machine

Day 3: Review: Chapter 3 and end of chapter questions in class

Chapter 4 – Discussion – shielded metal arc plates

Lab: Students practice setting adjustments and using shielded metal arc welding machine

Day 4: Review: Chapter 4 and end of chapter questions in class

Video – Shielded metal arc

Lab: Practice welding and changing electrode angles

Day 5: Theory: Welding positions for types of repairs on trucks and heavy duty equipment

Lab: Students practice more welding techniques

Test: Written

Day 6: Theory: Using all combined fabrication skills together – metal, heating, bending, cutting, and welding to repair trucks and equipment

Lab: Exercise of heating, bending, cutting and welding frame brackets

Day 7: Review: Previous days lab exercises - students analyze their work

Lab: Exercise cutting, heating, bending, and welding gusset bracing on trucks and equipment

Day 8: Theory: Working with frame rails, stress points, drilling, heating, bending and welding

Lab: Exercise on frame rails – channel bending, cutting, and welding

Day 9: Review past 8 days

Theory: Inspecting cracks and welds on trucks and equipment

Lab: Exercise – continuation on frame rails and bracing

Day 10: **Test** – Written and hands on in lab

I _____ have received a copy of the
DSLTT F210 “Heavy Equipment Fabrication” class syllabus and
have read and understand the class rules and testing procedures.

Date

Instructor's signature

Date

Student's signature