

DSLTF110 – BASIC INDUSTRIAL 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 the concepts of industrial fabrication. When working with heavy equipment, things break. This class will teach the basics of how to fabricate and repair heavy equipment in and out of the field using various techniques.

Course objectives:

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

1. Basics of fabrication
2. Ability to identify and choose the right materials
3. Understand the weak/stress points
4. Knowledge of emergency repairs that can be performed in the field
5. Basic welding techniques used on heavy equipment

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 breaks 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”
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COURSE OUTLINE:

Day 1: Safety in fabrication and working with heated materials

Review chapter 2 – safety in welding

Review questions at the end of chapter 2, as a class discussion

Review chapter 24 – workability of metals

Theory: metals used in the trucking and heavy equipment industry

Day 2: Review: A: Safety B: Metal types and compositions

Theory: heating and handling of heated metals

Chapter 7 – discussion and review and chapter questions as a class discussion

Lab: Demonstration of oxygen/acetylene torch – disassemble –breakdown – clean

- reassemble – inspect for leaks

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Day 3: Review chapter 7

Theory: handling and storing of compressed gases

Video on air liquid

Theory: adjusting pressures on oxy/acetylene torch

Lab: Student practice disassemble – reassemble – testing and adjusting of torch

Day 4: Review compressed gas information and pressure regulator adjustments

Theory: torch tip types, sizes, cleaning and inspecting

Lighting and adjusting the torch

Heating metal and checking temperature and discolorations

Lab: Torch setup, adjusting, lighting, and heating of metals

Day 5: Review heating of metals

Theory: heat control and using the torch for cutting metals

Lab: Practice heating metals; cutting metals

Test: a: safety **b:** compressed gases **c:** handling of metals

d: torch **e:** heating and cutting

Day 6: Theory: Review previous week

Lab: Practice heating and cutting different types and thicknesses of metal

Day 7: Theory: chapter 8 – plasma cutting

Video

Lab: Demonstration by instructor on set-up and use of a plasma cutting tool

Day 8: Theory: Review chapter 8

Questions and at end for a classroom discussion

Lab: students practice using the plasma torch

Day 9: Theory: review us of plasma torch

Review metal types and their characteristics

Instruction on banding techniques

Video

Lab: students practice heating, cutting and bending metals in 45° and 90°

Day10: Theory: making and using channel, angle, brackets, and gussets on metal repairs on trucks and heavy equipment

Glazing – field and shop repair methods

Test: written and hands-on

I _____ have received a copy of the
DSLT F110 “Basic Industrial Fabrication” class syllabus
and have read and understand the class rules and testing
procedures.

Date

Instructor's signature

Date

Student's signature