

Course Syllabus

Course Name: Introduction to Portable Hand Tools and Machinery

Course Number: MARR 22

Course Credits and Hours: 1 credit; (30 hours) lecture/lab

Prerequisites: MARR 20

Course Description: Provides an introduction to hand tools and machinery used in the marine industry. The proper use of some woodworking machinery as well as hydraulic prop and bearing remover, bead blaster/sandblaster will be demonstrated and practiced. The following floor woodworking tools will be introduced: table saw, bandsaw, joiner, floor belt/disc sander and drill press. Many power hand tools will be demonstrated with hands-on training utilized. In addition, this course will emphasize learning to handle the tools and equipment necessary for the Introduction to the Composite Technology course (MARR 24), and the Composite Repair Techniques course (MARR 25) as well as future woodworking classes. The proper use, safety procedures, and care of tools are stressed. Safety quizzes will be given to the student on all floor woodworking machinery discussed.

Course Objectives:

Upon successful completion of this course, the student will be able to:

1. Name and identify portable machinery common to the marine industry and know where they are stored at METC
2. Remove a propeller from a shaft
3. Operate the hydraulic cutless bearing remover.
4. Repack and adjust a standard stuffing box.
5. Service thru-hulls and seacocks.
6. Inspect raw water strainers.
7. Check straightness of propeller shafts.
8. Square engine coupling to shaft.
9. Operate the following woodworking floor tools:
 - Table Saw
 - Floor Belt/Disc Sander
 - Joiner
 - Drill Press
 - Band Saw
10. Bead Blaster/Sand Blaster
11. Hand power tools including power planer, grinder(s), sanders, drill motors, saber saw, circular saw and reciprocating saw.

Marine Education & Training Center
MARR 22
Course Syllabus

Course Outline:

- I. BASIC HAND TOOLS
 - A. Mechanics Tools
 - B. Measuring Tools
 - 1. Prop shaft straightness
 - 2. Engine coupling squareness

- II. HYDRAULIC CUTLASS BEARING AND PROPELLER REMOVER
 - A. Shaft and Prop components
 - B. Operation of System
 - C. Maintenance of System

- III. STANDARD MARINE STUFFING BOX
 - A. Inspection
 - B. Flax Replacement

- IV. OPERATE BEAD BLASTER/SANDBLASTER
 - A. Safety
 - B. Operational parameters

- V. OPERATE FLOOR DISC/BELT SANDER
 - A. Safety
 - B. Operational parameters

- VI. OPERATE TABLE SAW
 - A. Safety
 - B. Operation

- VII. OPERATE JOINER
 - A. Safety
 - B. Operation

- VIII. OPERATE DRILL PRESS
 - A. Safety
 - B. Operation

- IX. OPERATE BAND SAW
 - A. Safety
 - B. Operation

- X. INSPECT RAW WATER STRAINER

Marine Education & Training Center
MARR 22
Course Syllabus

Evaluation:

Standard Alpha System:

A	94 -100
B	88 -93
C	80 -87
D	70 -80
F	below 70

Evaluation by Percentages:

40%- Hands on projects and excercises; graded for accuracy, neatness and attention to detail.

40%- Written tests; given to determine understanding of principals.

20% - METC's Work Habits Evaluation (previously issued)

The evaluation addresses behavior such as "Does the student report to class on time and prepared? Does the student use lab time wisely? Does the student cooperate with the instructor and team members? Is METC policy followed? Does the student participate in class discussions?"

Many handouts will be issued to you throughout your career at the METC. It is imperative that you keep a three ring binder with labeled dividers. During some written tests you will be allowed to refer to your notes. You will also find it beneficial to refer to your notebook while executing projects. Your notebook will directly effect your written and "hands on" project scores. Your notebooks will periodically be turned in and evaluated.

Prompt attendance is vital to your success. Many "hands-on" projects and demonstrations simply can not be repeated. The table below demonstrates how absences and tardiness will limit how high a grade you will be eligible to receive for this course.

If you miss:	You are eligible for a(n)
1.5 hours or less	A
3 hours or less	B
4.5 hours or less	C
6 hours or less	D
More than 6 hours	F

Each Tardy will equal 1/2 Hour absent. This includes being late returning to class from break.

Please call to inform if you are going to be absent. Many of our projects are tackled as a team. We need to know if a team member is going to be absent. The answering machine is on phone # **832-3682**.

If you do not call to notify of your absence and there is a test, and you are granted permission to take a make-up test, a 14 point (based on 100 pt. scale) penalty can be deducted from your make-up score. Be advised that any make-up exam administered may be different in format from the original exam, and may include oral examination.

Required Textbooks:

Boatowner's Mechanical and Electrical Manual, Nigel Calder, International Marine/ McGraw-Hill

Modern Woodworking, Wagner/Kicklighter, Goodheart/Wilcox