

**MASSACHUSETTS MARITIME ACADEMY
DEPARTMENT OF ENGINEERING
EN-4112 – Thermo-Fluids Laboratory
Syllabus and Lab Schedule
Spring 2016**

INSTRUCTOR: Matthew Frain, Ph.D., P.E.
213A Harrington
mfrain@maritime.edu
(508)830-5000 ext. 2258

OFFICE HOURS: Mondays, Wednesdays, and Fridays 3rd period (1000-1100), or by appointment.

PREREQUISITES: Thermodynamics EN-3211
Fluid Mechanics EN-4111 (co-requisite).

LEARNING OBJECTIVES: At the completion of this course, the student should be able to:

- demonstrate knowledge and understanding of the following STCW elements:
 - OICEW-A4.1 Principles of fluid flow
 - OICEW-A5.1 Operational characteristics of pumps
 - OICEW-A5.1 Operational characteristics of piping systems
- write professional technical documents
- organize and display data in a logical and professional manner
- apply fluids and thermodynamic concepts to physical systems
- conduct basic engineering experiments
- analyze data and formulate engineering conclusions
- appreciate the differences between theoretical and actual engineering systems

GRADING: **This laboratory is an STCW knowledge course. A 70% or better overall grade is required to pass this course.**

The overall course grade consists of the following components:

- | | |
|-------------------------|----------------|
| • Attendance / Clean-up | 10% |
| • Quizzes | 60% |
| • Reports (2) | 30% (15% each) |

MASSACHUSETTS MARITIME ACADEMY
DEPARTMENT OF ENGINEERING
EN-4112 – Thermo-Fluids Laboratory
Syllabus and Lab Schedule
Spring 2016

ATTENDANCE: NO LAB MAKE-UPS UNLESS ABSENCE IS DOCUMENTED (watch, sickness, varsity athletics).

One (1) unexcused absence will result in loss of 10% of overall grade and loss of grade for quizzes administered that meeting. More than one (1) unexcused absence will result in failure of the laboratory.

ATTIRE & PPE: Attire is the uniform of the day. Boiler suits are not authorized for this lab.

The instructor may require PPE for certain labs. You will be informed of these requirements in advance.

PREPARATION: Students must bring the following to each lab meeting:

- Laptops, with power cords, and Excel spreadsheet software installed
- Lab notebooks (quizzes are open notes)
- Calculators
- Pens, pencils, straight edges for charts.
- USB sticks for file transfers (optional but helpful)

QUIZZES: Weekly open-note quizzes will be administered based on topics of the previous meeting's lab activities.

LAB ACTIVITY: Data from lab activities will be collected in teams, but calculations and Excel work are to be done by each individual student during the lab period.

CLEAN UP: Take care of your equipment and workspace! You and your partner are expected to ensure that all equipment, tables, chairs are clean and dry before leaving the lab, and equipment stowed according to the instructor's directions. **Failure to check out with the instructor will cause the loss of 1% of both yours and your partner's grade per incident.**

Food and drink is NOT allowed in the lab.

MASSACHUSETTS MARITIME ACADEMY
DEPARTMENT OF ENGINEERING
EN-4112 – Thermo-Fluids Laboratory
Syllabus and Lab Schedule
Spring 2016

REPORTS:

Students will be required to write two (2) technical reports describing laboratory experiments and findings. Each of these reports is to be done by the individual student. These reports are expected to be neat, professional, and free of technical, grammatical, and spelling errors. The format of the report will be discussed when the reports are assigned. Use of the Writing Resource Center is not mandatory but is highly encouraged.

All reports will be submitted electronically via TurnItIn. Login instructions and due dates for each report will be provided in a separate assignment handout. Late submissions will not be accepted and a grade of 0 will be applied, no exceptions.

HONOR CODE:

All assignments are to be done by the individual student. Copying of any other students' work or permitting your work to be copied are honor code violations and will be treated accordingly.