DALHOUSIE University

DEPARTMENT OF MECHANICAL ENGINEERING

MECH 4440 Principles of Marine Craft Design

2003/2004 Fall Term

Instructor: Dr. Wei Qiu, P.Eng.

Lectures: 11:35am-12:25pm, Monday, Wednesday, Friday, D413

Tutorial/Lab: 3:35-5:25pm, Thursday, D413

Textbook: Basic Ship Theory (5^{th} Edition) by K.J. Rawson and E.C. Tupper
Publisher: Butterworth-Heinemann.

Contact: qiuw@dal.ca

Course Description

The purpose of this course is to give students the basic principles of hydrostatics and hydrodynamics of marine crafts. Topics include: hydrostatics and stability calculations for marine crafts; dimensional analysis and modelling of marine systems; resistance estimation of low-speed and high-speed crafts; sail power, marine propellers and jet propulsion.

Course Outline

Description	Chapter
• Introduction	Chapter 1, 2, 3
• Stability	Chapter 4
• Ship Resistance	Chapter 10, 11
• Resistance of Planing Hull	Handout
Midterm Examination	
• Principle of Propeller Action	Chapter 10
• Propeller Geometry and Design	Chapter 11
Final Examination	

Note that the outline may change slightly as we move along.

Laboratory Experiments

There are two laboratory experiments in the class:

1. Inclining Experiment (~ 3rd week)
2. Ship Model Resistance Test in Towing Tank (~ 7th week)

Grades

Grades for the course evaluation will be determined as follows:

• Assignments (6) and Lab Reports (2)	20%
• Midterm examination (around the 9th week)	30%
• Final examination	50%
	100%

Please note that there will be NO supplemental examination in this course.