ME 434/435
Senior Design Project

Semester:	Spring 2007
Faculty:	Drs. Gene Hou, Lin, and Shen, and Mr. Garcia of VMASC
Title of Project:	Wave-Riding Simulator
Number of students:	3

Description of Project:

The goal of this project is to reactivate an old and broken flight simulator for the purpose of high performance boat simulation. The simulator is made of a Stewart platform, a hydraulic pump/hose, a chair, a set of joy-stick and a set of head gear. Currently, the simulator can move with position control. The required tasks include:

1. Add a proportional pressure valve to increase the controllability of the machine
2. Connect the joy-stick.
3. Modify the Matlab motion simulation code so that the machine can interact with the joy-stick.
4. Mount the chair.
5. Incorporate the wave motion with the simulator.
6. Synchronize the graphic background with the simulator.

The backgrounds required to conduct the project research involves mechanism, control and motion simulation. The maximum participants are 3. The team should have the capability to use Labview and Matlab. It is planned to demonstrate the alpha-version of the wave-riding simulator in the upcoming MACC 07 Conference in Norfolk, June 5-7. (http://www.boats.dt.navy.mil/MACC/)

Dr. Hou of the ME department will be the project advisor, along with Dr. Lin of the MET department and Dr. Shen and Mr. Garcia of the Virginia Model and Simulation Center.