

ENG. 5003 SHIP STRUCTURES I

Design Project

January 5, 2011

Objectives: The goal is to design the midship structural arrangement for the vessel described below, using the GL requirements at the site:

<http://www.gl-group.com/infoServices/rules/pdfs/english/rlrp-e.pdf>



Focus on the hull girder requirements (ie those requirements that affect the midship section), such as still water and wave bending moments, strength criteria, corrosion margins.

Description: The vessel is a container ship with the following main dimensions:

Length (L_{BP})	184	m
Breadth, (B)	23.2	m
Depth, (H)	15.1	m
Draft, full design load	9.1	m
Block Coefficient	~ 0.62	-

Required Results: There are five deliverables for the design project:

1. Jan.26: create a 3D model of the hull (in sketchup or Rhino), with the main decks and bulheads included. Create a simple General Arrangement. Submit a 2 pg. (f/b) rep. with views of the model and G.A.
2. Feb.9: create a 3D model of 10m of the midship section (in sketchup or Rhino) showing the structural components and containers. Submit a 2pg GA (updated if so) along with a 2pg (f/b) report with views of the structure.
3. Feb 23: Use the GL rules to check the plating and bottom framing. Submit a 2pg report describing the framing and plating requirements.
4. Mar.8: Use the GL rules to check the hull section modulus. Submit a 2pg report describing the midship section requirements along with a calculation of the modulus of your vessel.
5. Mar. 22: Collect all material into one comprehensive design report that includes a fold-out 11x17 drawing of the midship section with dimensions (max 15 pages)



Note: The report should be prepared in a professional format, clearly written, and well illustrated.