Qualification Unit

This unit forms part of a regulated qualification.

Unit Title: Ship Construction

Unit Reference Number: D/651/5443

Level: Three (3)

Credit Value: Five (5)

Minimum Guided Learning Hours: 45

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand the key features of a vessel's construction	1.1 Summarise standard ship construction terminology
	1.2 Identify the significant structural features of a vessel including: • Framing systems • Features of hull • Features of holds • Features of tanks • Arrangements to ensure watertight integrity • Arrangements in areas liable to damage by heavy weather • Openings in hull or deck • Continuity of strength • Piping and pumping systems

2.	Know the salient features of a range of ship types	2.1	Describe the salient features of ship types including: • Tankers (Oil, gas and chemical) • General cargo • Ro-Ro • Container • Bulk carrier • Passenger ship • Support vessels (supply, standby and tug) • Special vessels (surface effect and high speed craft)
3.	Understand ship stresses	3.1	Explain Cause and effect of ship stress in still water including: • Racking • Centre loading • Wing loading • Dry-docking • Alternate hatch loading • Hogging • Sagging
		3.2	Explain cause and effect of ship stress in a seaway including: • Panting • Pounding • Hogging • Sagging • Torsional bending • Longitudinal bending
		3.3	Identify structural features to resist stresses
		3.4	Use stress calculating machines
4.	Understand the basic principles of Hydrostatics	4.1	Explain the terms, light and load displacement, volume of displacement and buoyancy
		4.2	Explain the meaning of Archimedes Principle, mass, volume, density and relative density
		4.3	Explain the terminology relating to the main dimensions of a vessel
		4.4	Explain the function of loadlines, and sketch their layout

5.	Understand the principles of static stability	5.1	Explain the meaning of the terms centre of buoyancy, centre of gravity, initial transverse metacentre, righting lever, righting moment
		5.2	Explain correctly the terms stable, neutral and unstable equilibrium at small angles of heel
		5.3	Explain the meaning the concepts of metacentric height and stiff and tender vessels