

# BASIC NAVAL ARCHITECTURE COURSE

6-7 March 2017

Glasgow, UK

## ABOUT THE COURSE

The primary objective of this short course is to provide conversion or refresher training for science and engineering graduates and experienced draughtsmen who hold active line responsibilities in the design of ships and ship systems and in shipbuilding practice. The course is designed in such a way that at the end of the lectures, the person will have a very broad understanding of the behaviour of ships under a variety of loading and operating conditions. The syllabus will include: basic definitions of ships, structural components of the hull girder, general arrangement, ship as functional blocks, resistance and propulsion methods. The course is intended for practising engineers and research scientists who need to understand the concepts behind the behaviour of ships & ships system at sea.

## COST

Course fee will be at the *price of £650+VAT (UK Only)* which includes course notes and lunches. The fee doesn't include accommodation. You should make your own arrangements for accommodation.

## VENUE

**ASRANet Ltd**  
St Georges Building  
3rd Floor  
5 St Vincent Place  
Glasgow, G1 2DH

Tel: +44 (0) 141 275 4801

## COURSE OUTLINE

**09.00 – Lecture 1: Naming and Locating Parts of a Ship, Introduction to the General Arrangement – Functional Blocks of Ship**  
**10.30**  
*By Mr Ian Winkle*

This class will explain the basics of a ship and the discuss various marine vessels in operation right now. Marine terms used to define different sections and parts will also be discussed.

**10.30 – Break**  
**11.00**

**11.00 – Lecture 2: Basic Definitions, Displacement, Deadweight, Deck Load etc. Loading Conditions, Stability and Trim, Stability Book, Role of Marine Agencies**  
**12.30**  
*By Mr Ian Winkle*

The class follows the Lecture 1, with more detail on definitions of various components on a vessel. Stability and Hydrostatics will be introduced. Impact of Regulations and Classification rules on the design of ships will be covered.

**12.30 – Lunch**  
**13.30**

**13.30 – Lecture 3: Ship Capsizing, Static Stability, Worked Example on Ships**  
**15.00**  
*By Mr Ian Winkle*

This class will introduce you to the fundamental principles of naval architecture and will examine how they are applied in practice for floating bodies. The principles of hydrostatics and the stability of marine vehicles, together with their application to safe operation will looked into

**15.00 – Break**  
**15.30**

**15.30 – Lecture 4: Tutorials on Stability**  
**17.00**  
*By Mr Elstine Padayattil*

**09.00 – Lecture 5: Resistance & Propulsion**  
**10.30**  
*By Mr Elstine Padayattil*

A fundamental approach in to the principles of propulsion required for a ship and the techniques for measuring resistance, i.e. the force working against its propulsion. The calculation of this resistance R plays a significant role in the selection of the correct propeller and in the subsequent choice of main engine.

**10.30 – Break**  
**11.00**

**11.00 – Lecture 6: Water Tight Integrity and Damage Stability, Water Tight Doors and Bulkheads**  
**12.30**  
*By Mr Ian Winkle*

Introduction to subdivision and damage stability. Review of existing standards. Progressive flooding, intermediate stages of flooding and transient phenomena. Structural loads during progressive flooding.

**12.30 – Lunch**  
**13.30**

**13.30 – Lecture 7: Ship Design – Dimensions, Weight and Layout**  
**15.00**  
*By Mr Elstine Padayattil*

This module will examine the processes and methods used to design ships. The design processes of marine vehicles and structures and gain an appreciation of the technical, economic and social influences on design and the influences of statutory regulations and classification society rules.

**15.00 – Break**  
**15.30**

**15.30 – Lecture 8: Tutorials on Ship Design**  
**17.00**  
*By Mr Elstine Padayattil*

## ABOUT THE LECTURERS

**Mr Ian E Winkle** BSc CEng, MRINA recently retired as a Senior Lecturer in the Dept. of Naval Architecture & Marine Engineering, Universities of Glasgow & Strathclyde after 26 years involved in Naval Architecture, Ship Design and Ship Production. Before joining the Universities of Glasgow & Strathclyde Mr Winkle worked with Vickers Ltd Shipbuilding Group at their Walker Naval Yard and St. Albans Ship Model Experiment Tank before joining Lloyd's Register of Shipping for a year as a Travelling Scholar. He then spent nearly 4 years working as a Research Officer in the Production Division of the British Ship Research Association, developing new fabrication techniques, before becoming Principal Lecturer in the Dept. of Maritime Studies at the Northern Ireland Polytechnic. His areas of research interest include Stability of Damaged Ro-Ro Vessels - most notably the development of the 'Glasgow Concept' and the Fabrication of Steel and GRP Ship Structures using Toughened Structural Adhesives, much of which has been undertaken as principal investigator of a range of EPSRC projects.



**Mr Elstine Padayattil** MSc AMRINA, Elstine Padayattil is presently working as a Senior Naval Architect in ASRANet Ltd in Glasgow, UK. He graduated with a BEng in Naval Architecture and Marine Engineering from the University of Strathclyde, where he also pursued his MSc in Subsea Engineering. He is a member of RINA, IMarEST and IESIS. He has experience in working with the production facility of Cochin Shipyard Limited, India (CSL) In addition to working in the hull assembly of the shipyard, he aided the repair yard team in overseeing the retrofitting on variety of ships. Working with Harland and Wolff Heavy Industries Ltd during the work experience part of his education, he helped a group of naval architects in determining the keel block positions for a vessel coming for repair as well as exposure in Rhino to design a platform for painting very large gantry cranes. Through the course of his career he has gained exposure to wide range of industry based software. Notably Orcaflex was widely exercised to perform the global dynamic analysis of A Subsea Storage System for Ultra - Deep waters.



## REGISTRATION

I wish to register for the course at a at the **price of £650+VAT (UK Only)** including course material and workshop lunches.

*Payments can be made by cheque (made payable to ASRANet Ltd.), cash or bank transfer but no card payments. Please enquire for details.*

Please invoice me at the below address

***Please do not make your travel arrangements until you receive an invoice from us***

NAME

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ADDRESS

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EMAIL

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TEL/MOB

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### Disclaimer

All materials and information supplied during and associated with this course are intended purely for instructional purposes. Whilst every effort is taken to ensure that materials provided are accurate and suitable for training purposes, ASRANet Ltd accepts no responsibility for their accuracy or utility.

**I accept the above**

Signed

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Date

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The completed form should be sent to: **info@asranet.co.uk** OR to

**ASRANet Ltd,  
5 St Vincent Place,  
Glasgow, G1 2DH  
UK**