

## ABOUT THE COURSE

This course will deal with the first principle design of ship structures. Advanced analysis procedures for the design of beams and plates (80% of ship structures are made up of plates) will be dealt with. The ultimate strength of hull girders will be given based on progressive collapse analysis and also a simplified procedure. Finally, the common structural rules for the design of the hull girders will also be given.

## WHO SHOULD ATTEND

Engineers and scientists involved in the design of ships and ship systems. Personnel from ship management companies, oil companies, classification societies and ship builders will benefit from attending this course. The course is innovative in both content & structure with a careful balance of theory & practice.

design, assessment and management of a wide range of engineering structures will also benefit from this course.

## COST

The registration fee of the workshop will be £650 + VAT (UK only) which includes course notes and lunches. You should make your own arrangements for accommodation.

## PAYMENT

Payments can be made by cheque (made payable to ASRANet Ltd.), cash or bank transfer. Please enquire for details.

## CONTACT

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# Advanced Design of Ship Structures (Includes Common Structural Rules)



## PROGRAMME

### Day 1

09.00 - 10.30 Lecture 1: Overview of Ship Structure Design.

10.30 - 10.45 *Break*

10.45 - 12.15 Lecture 2: Analysis and Design of Columns and Beam Columns, Design Codes.

12.15 -13.30 *Lunch*

13.30 – 15.00 Lecture 3: Analysis and Design of Unstiffened and Stiffened Steel Plates, Design Codes - I.

15.00 - 15.30 *Break*

15.30 - 17.00 Lecture 4: Analysis and Design of Unstiffened and Stiffened Steel Plates, Design Codes – II.

### Day 2

09.00 - 10.30 Lecture 5: Tutorial on Columns and Plated Structures.

10.30 - 10.45 *Break*

10.45 - 12.15 Lecture 6: Hull Girder Strength – I.

12.15 -13.30 *Lunch*

13.30 - 15.00 Lecture 7: Reliability Based Design & Code Development.

15.00 - 15.30 *Break*

15.30 - 17.00 Lecture 8: Common Structural Rules and Tutorial on Reliability.

Lecture 1: Deterministic and Probabilistic Design;  
Working Stress Design (WSD) and Load Resistance  
Factor Design (LRFD); Load Combination; Safety Check

Lecture 2: Elastic buckling, in elastic Buckling,  
Johnson's formula, Perry Robertson Formula,  
Column Curves, DNV Codes.

Lecture 3: Plate buckling under different loadings,  
Ultimate strength of unstiffened plate, Examples  
problems, DNV and API Codes.

Lecture 4: Stiffened plates, Inter-frame collapse,  
DNV & API Codes.

Lecture 5: Tutorial questions to be solved in this  
class.

Lecture 6: Simplified hull girder analysis. 8  
example problems.

Lecture 7: Background of Reliability Analysis; Different  
Probabilistic Code Formats;

Lecture 8: IACS Common Structural Rules; Rule  
Principles; Rule Application; Tutorial questions on  
reliability to be solved in this class.