

ABOUT THE COURSE

Most submarine designs are weight critical, especially as operational diving depth increases. It follows that designers will strive to select an available high strength low density material compatible with good fabricability and toughness. Toughness is required not only for the usual low temperature reasons, but also to resist high dynamic loads from depth charge attack. High strength steels have proved to be reasonably satisfactory, the main limitation being how to achieve adequate weldability and toughness for military submarines with steels above about 700N/mm² proof stress. More exotic materials would be considered for depths exceeding 1000m say. At really great depths the required pressure hull thicknesses can become so large that buckling ceases to be a problem even with low modulus materials and frames can effectively be dispensed with. In many respects the design then becomes simpler and the conventional safety factor can be reduced. This course is meant to provide comprehensive coverage of structural design and also concentrate on philosophy and underlying essentials and strength formulations for design.

WHO SHOULD ATTEND

The course is intended for Engineers, Operations managers, Fabricators, Applied Scientists and Technologists interested in submarine design.

COST

The registration fee of the workshop will be £1195 + 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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Analysis & Design of Submarine Structures



*A Maritime Company for Courses &
Conferences*

Glasgow, UK

PROGRAMME

Day 1

09.00- 09.20	Delegate Registration
09.30- 10.30	Lecture 1: Introduction to Course Structure
10.30-11.00	Break
11.00-12.30	Lecture 2: Buckling of Shells Under External Pressure
12.30-13.30	Lunch
13.30-15.30	Lecture 3: Materials Behaviour and Fabrication Tolerance
15.30-16.00	Break
16.00-17.00	Lecture 4: Materials Behaviour: Tutorial

Day 2

09.00-10.30	Lecture 5: Submarine Design- Various Failure Modes I
10.30-11.00	Break
11.00-12.30	Lecture 6: Finite Element Analysis I
12.30-13.30	Lunch
13.30-15.00	Lecture 7: Finite Element Analysis II
15.00-15.30	Break

15.30-17.00	Lecture 8: Finite Element Analysis III
09.00 –10.30	Lecture 9: Submarine Theory I
10.30-11.00	Break
11.00–12.30	Lecture 10: Submarine Theory II
12.30-13.30	Lunch
13.30-15.00	Lecture 11: Design Codes Examples I – PD 5500-2015
15.00-15.30	Break
15.30-17.00	Lecture 12: Design Codes Examples II – PD 5500-2015

Day 4

09.00 –10.30	Lecture 13: Structural Reliability
10.30-11.00	Break
11.00-12.30	Lecture 14: Structural Reliability & Application to Submarine Structures
12.30-13.30	Lunch
13.30-15.00	Lecture 15: PD 5500-2015 Tutorial I

15.00-15.30	Break
15.30-17.00	Lecture 16: PD 5500-2015 Tutorial II
09.00 –10.30	Lecture 17: Hands on experience on submarine design
10.30-11.00	Break
11.00-12.00	Lecture 18: Fatigue Analysis
12.00-13.00	Lunch
13.00-14.30	Lecture 19: Fracture Mechanics - I
14.30-15.00	Break
15.00-16.30	Lecture 20: Fracture Mechanics - II