

The background of the poster is a photograph of a shipyard. A large, red, curved metal structure, likely a ship's hull, dominates the center. A worker in a blue uniform and hard hat stands in the middle ground, providing a sense of scale. The scene is set on a concrete or steel deck. The text is overlaid on this image, with a large blue diamond shape behind the main title. The overall color palette is dominated by blues, reds, and greys.

Shipbuilding Acquaint Course

Being delivered
ONLINE
week commencing
7 February 2022



Welcome to the Shipbuilding Acquaint Course

Developed by Broadreach Marine Ltd and presented exclusively in conjunction with the International Institute of Marine Surveying.

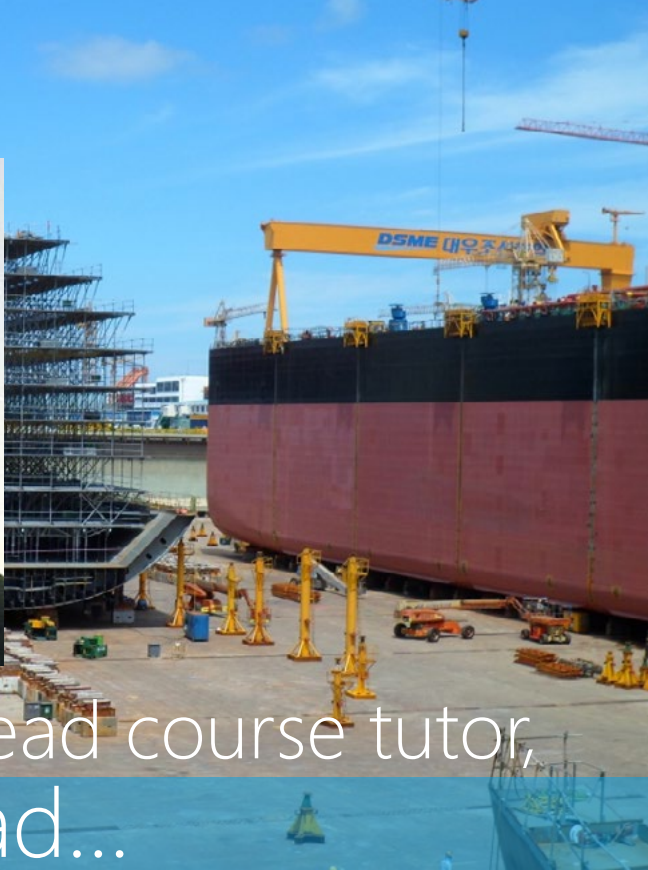
Broadreach
MARINE
TECHNICAL CONSULTANTS



The aim of this unique course is to provide an opportunity for the student to gain an understanding of modern shipbuilding procedures, from placing a contract to delivering a completed ship.

Recognised by The Nautical Institute for the purposes of Continuing Professional Development (CPD). See their Recognised Institutions & Courses at <https://bit.ly/3bVQ3za>





About the lead course tutor, Peter Broad...

Peter Broad has spent his entire 30 years plus career in shipping. Peter has always worked to the highest possible standards and has led teams to success and enjoys mentoring and educating others. Over the years, Peter has worked with and managed a number of multinational and multicultural teams and values highly the diversity of these relationships. He is the owner and Managing Director of Broadreach Marine Consultants (UK) Ltd and CEO of Broadreach Marine (Korea) Co. Ltd. and is involved with Marine Consultancy, newbuild ship project management, plan approval, marine surveying, and marine training.

Peter has authored white papers for Government, two marine engineering-related books, and a number of bespoke marine-related training packages. In addition, he is an expert witness. He is also a Chartered Marine Engineer and a Fellow of IMAREST and of the IIMS.



Who should apply?

Applications are sought for the course from individuals who have a basic knowledge of shipping and want to expand their practical knowledge of shipbuilding in particular with a view to embarking on a career in the industry. But applications from those who are working for a shipping company, or related marine industry, such as P&I Insurance Clubs, and who are keen to extend their knowledge in this area are also welcomed.

It is likely (but not essential) that the candidates for the course will have one or more of the following entry requirements and/or pre-qualifications:

- A BSc in Marine Science, Marine Engineering, or Naval Architecture
- Postgraduate experience in a marine-related industry such as Marine Insurance, Underwriting, Broking, or Ship Design
- Two years working for a Non-Classification Society Marine Surveying company or a Class Society
- Ex seafarer: Second Engineer, Chief Engineer, Chief Officer, Master or Superintendent Technical Manager
- Be a competent Marine Surveyor

The course will be conducted in English. Students must have a good skill level in both written and spoken English.

The course will be run over one week starting on 7 February 2022 and will be delivered in individual Units with a total delivery time of approximately 22 hours. Students who cannot attend the live lectures are able to watch and learn by catch-up videos from the recordings that will be made available of each lecture as part of the study material.

So, if you miss a live lecture you can complete the course in your own time, when convenient for you to do so.



The Units and their scheduled live lecture dates...

- Unit 001 **Course introduction & learning objectives**
Being presented by live lecture on Monday 7 February 2022 at 08.30 (UK time) *Duration 60 minutes*
- Unit 002 **Shipbuilding contracts, specifications & HSE introduction**
Being presented by live lecture on Monday 7 February 2022 at 10.30 (UK time) *Duration 120 to 150 minutes*
- Unit 003 **The role of the Classification Society & Certification**
Being presented by live lecture on Tuesday 8 February 2022 at 07.30 (UK time) *Duration 120 minutes*
- Unit 004 **Plan Approval, supply chain and factory acceptance tests**
Being presented by live lecture on Tuesday 8 February 2022 at 10.00 (UK time) *Duration 120 minutes*
- Unit 005 **Materials, hull construction, welding & NDE**
Being presented by live lecture on Wednesday 9 February 2022 at 08.00 (UK time) *Duration 150 minutes*
- Unit 006 **Propulsion machinery, auxiliaries, outfitting & piping systems**
Being presented by live lecture on Thursday 10 February 2022 at 08.00 (UK time) *Duration 150 minutes*
- Unit 007 **Electrical & control equipment**
Being presented by live lecture on Thursday 10 February 2022 at 10.30 (UK time) *Duration 120 minutes*
- Unit 008 **Coatings & PSPC**
Being presented by live lecture on Friday 11 February 2022 at 08.00 (UK time) *Duration 90 minutes*
- Unit 009 **Commissioning & sea trials**
Being presented by live lecture on Friday 11 February 2022 at 10.30 (UK time) *Duration 60 minutes*
- Unit 010 **Ship delivery and final certification**
Being presented by live lecture on Saturday 12 February 2022 at 09.00 (UK time) *Duration 60 minutes*
- Unit 011 **The final multiple-choice exam**
Students will be able to access the link immediately after delivery of Unit 010 and it can be taken online at any time.

The Course Content

1. The Shipbuilding Acquaint Course content follows the logical processes and timeline required to build a ship.
2. For example: It is obviously necessary to have a contract in place before we start building; as it is necessary to complete the design approval before we cut steel and start building the vessel; and to carry out onboard commissioning before we go to sea trials.
3. There are eleven Units to this course. Unit 01 is an introduction to the course. Units 002 to 010 are the main course content.
4. Each of these Units have a short 'self-test' questionnaire at the end.
5. Unit 011 is the final exam.
6. All students will need to sit and pass the final exam in order to be awarded an International Institute of Marine Surveying (IIMS) Certificate of Achievement for CPD points.

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7. The tutor will take you through each procedure in turn so that you can understand the 'Cradle to Grave' processes that enable a modern ship to be designed to operate safely and efficiently for up to forty years.
8. The tutor will explain how a ship that is designed today needs to be 'Future Proofed' to remain compliant with future legislation, efficient and environmentally friendly for the duration of its service life.
9. Ultimately, we need to consider too how it will be disposed of at the end of its useful life.
10. These and other important considerations are covered throughout this course.

Note: The tutor will take you through the logical, step by step, procedures of the shipbuilding process. This is a generic course and not shipyard specific and some procedures and processes may have different names in different yards, but as a general rule all modern yards will follow these processes.

On successful completion of this course the student will be able to understand the basic terminology and processes involved in shipbuilding, so that they can go forward with their learning and potentially work safely in a shipbuilding yard environment.

Unit 001

Course introduction and learning objectives

The learning objectives of this unit:

- To introduce the tutor/s
- To introduce the students to each other and to the tutors/s
- To introduce the course content and learning objectives
- To introduce the course timetable
- To introduce the quizzes, the final exam process and give an introduction to the ClassMarker platform
- To explain the use of 'catch-up' on demand for delivered Units

Duration 60 minutes

Unit 002

Shipbuilding contracts, specifications and HSE introduction

The learning objective of this unit:

- To understand what a Shipbuilding Contract is
- To appreciate who the SBC is between
- Learn some useful common terms used in an SBC with examples
- To be introduced to Classification Societies and their role in the SBC
- To understand sub-contractors and subcontracted work
- To gain an appreciation of vendor selection for major components
- Learn about the Shipbuilding Specification
- To understand who writes the Specifications
- Learn who agrees the Specifications
- To learn some useful common terms used in Specifications with examples
- To gain an introduction to Shipyard Quality Standards
- To discover HSE with an introduction
- To discover what experience students have with HSE
- Learn about the role of HSE in a shipbuilding yard
- Understand the types of incidents and accidents that occur
- Learn about shipyard HSE Procedures with an introduction to Permit to Work
- Learn about situational awareness
- Understand about PPE and its importance

Duration 120 to 150 minutes



Unit 003

The role of the Classification Society and Certification

The learning objective of this unit:

- To learn and understand what a Classification Society is
- Gain an appreciation of the history about Classification Societies
- Understand who and what IACS is
- Learn who chooses the Class for new building - (ref back to SBC Unit 002)
- Learn about 'Cradle to Grave' – the classification of components from manufacture to operation onboard the vessel through life
- Gain an introduction to Plan Approval by the Class Society - (more information given in Unit 004)
- Understand supply chain Quality Assurance (Steel plate to ship delivery into service)
- Learn the importance of Statutory Surveys and Certification on behalf of Flag Administrations
- Understand about 'Future Proofing' the vessel
- Appreciate the role of the Class Surveyor attendance during newbuilding
- Understand New Entry and Final Certification with examples of Certificates - (more information on Certification is given in Unit 010)
- Gain an introduction to the 5-year Special Survey Cycle - (more information given in Unit 010)

Duration 120 minutes

Unit 004

Plan Approval, supply chain and factory acceptance tests

The learning objective of this unit:

- Learn what Plan Approval is
- Understand who carries out Plan Approval
- Gain an appreciation of how we communicate and transfer comments
- Understand what the Supply Chain is
- Understand who does Vendor Selection
- Learn about the role of the Class Society
- Get an introduction to IMO Codes (Common Structural Rules and IGC)
- Learn about Statutory Requirements (MARPOL, SOLAS, ISPS)
- Gain an appreciation of the Wheel Mark and CE Mark
- Learn what the criteria for Vendor Selection are
- Discover what Factory Acceptance Tests are
- Learn who carries out Factory Acceptance Tests
- Understand how we report our findings from a Factory Acceptance Test
- Get to know what happens if a Factory Acceptance Test is "Rejected" or if there are many open comments
- Learn who is responsible for installing the equipment onboard
- Understand who is responsible for setting the equipment to work
- Know who is responsible for system integration - (more information in Unit 007)

Duration 120 minutes

Unit 005

Materials, hull construction, welding and NDE

The learning objective of this unit:

- Learn about referring to 'supply chain' and material traceability (certification)
- Learn about Steel as a material and understand where it comes from
- Gain an understanding of special grades of steels used in Shipbuilding (ice class and Z-Grade)
- Learn about GA, Shell expansion & DAP's
- Understand what Casting is
- Understand what is meant by Forging
- To know where a Casting can be found on a ship
- To know where a Forging can be found on a ship
- Gain an appreciation of how we weld steel, castings and forgings
- Learn about welding procedures
- Gain an appreciation of Welder Qualifications
- Understand welding consumables
- Learn about Non-Destructive Examination (NDE) – explanation of types of NDE, their advantages and disadvantages
- Appreciate who carries out NDE and how it is reported
- Learn about stress factor related to alignment
- Gain an introduction to SUS and other non-ferrous materials

Duration 150 minutes

Unit 006

Propulsion machinery, auxiliaries, outfitting and piping systems

The learning objective of this unit:

- To discover the different types of propulsion machinery
- Gain an understanding about shafting arrangements, gearboxes and propellers
- Learn about the types of auxiliary machinery
- To understand what is meant by 'outfitting'
- Gain an introduction to piping systems and distribution
- To discover the different types of pipes for different duties, their construction and testing processes
- Gain an appreciation of Class Rules for pipe systems, their construction and testing
- Understand the onboard installation of pipes and testing
- Learn about other outfitting (Refer to Unit 004 - Supply Chain FAT and Plan Approval)
- Understand onboard installation and testing requirements (OTPs and ITPs)
- Testing and commissioning – lead into Unit 009

Duration 150 minutes



Unit 007

Electrical and control equipment

The learning objective of this unit:

- Understand that the electrical and control equipment selection is dependent on ship type
- Gain an appreciation of the types of electrical systems
- Learn about electrical distribution systems
- Understand about HV and LV switchboards
- Gain information about Integrated Automation Systems (IAS)
- Gain information about Power Management Systems (PMS)
- Learn about Unmanned Machinery Spaces (UMS), reference to Class
- Understand system integration and commissioning – lead into Unit 009

Duration 120 minutes

Unit 008

Coatings and PSPC

The learning objective of this unit:

- Introduction to the importance of coating application to marine structures
- Learn about different types of coatings
- Gain an introduction to the big coatings manufacturers
- Understand what is meant by surface preparation (types of blasting)
- Learn about shop primer (compatibility / weldability, etc)
- Find out the meaning of PSPC
- Understand overcoating intervals
- Learn about curing, humidity and temperature control
- Gain an appreciation of the dangers of solvents - HSE
- Gain an appreciation
- Find out about antifouling and 5-year paint schemes (ref 5-year special survey cycle / dockings)
- Understand application methods
- Learn what is meant by wet film measurement and dry film measurement
- Gain an appreciation of inspection methods
- Introduction to other methods of corrosion resistance (Anodes and ICCP)

Duration 90 minutes

Unit 009

Commissioning and sea trials

The learning objectives for this unit:

- Gain an introduction about commissioning
- Understand what is meant by ITPs and OTPs
- Learn about inspection sheets and sign off
- Learn about the owner's punch and the comment List
- Understand about the sign off of the owner's comments
- Introduction to sea trials
- Learn about pre-sea trials completion of OTPs, ITPs and owner's comments

- Gain an appreciation of the sea trials procedures
- Understand about the sea trials timetable
- Know who goes on sea trials
- Learn about safety and lifesaving appliances

Duration 60 minutes

Unit 010

Ship delivery and final certification

The learning objectives of this unit:

- Know who prepares the ship Certificates (Class and Statutory)
- Learn what Certification is required for the delivery of a ship
- Understand the Conditions of Class
- Learn about the 5-year survey cycle
- Gain an understanding of what has to happen between the owners and the shipyard
- Learn about how payment works
- Learn how insurance works
- Understand the process of registration

Duration 60 minutes

Unit 011

The final multiple-choice exam

- The final exam must be passed to gain the qualification.
It is necessary for BRM and IIMS to gauge the level of understanding for each Student and to confirm that they have attained a good general knowledge of the presented material.
- The final exam will be delivered through the online 'ClassMarker' platform and can be carried out at a time to suit you.
- Once the student has completed all training Units, they will log on to 'ClassMaker' using the link provided within one week of the end of the course and be presented with 50 multiple-choice questions.
- The final exam will be marked automatically by the 'ClassMarker' platform. Once submitted, the student will know immediately if they have reached the pass mark and the results shared with IIMS and BRM.
- The pass mark is 70%.
- If the student attains the pass mark or over, they will be issued with a 'Certificate of Achievement'.
- If the student does not attain the pass mark, they will be invited to re-sit the Final Exam up to a maximum of another four attempts (five in total).

Duration 60 minutes





Course Fees & Terms of Payment

The cost of the shipbuilding acquaint course is £2,500 GBP. Please note that course fees must be paid in full prior to the commencement of Unit 001. The course administration is managed from start to finish by the Marine Surveying Academy Ltd, a wholly-owned subsidiary of the International Institute of Marine Surveying.

A generous discount is offered for multiple delegates from the same organisation. Please contact us for details.

A 75% refund will be given for cancellation within one week of the course commencement date. No other refunds are offered.

How to apply and what to do next

Please use the online form to register your place on the course go to bit.ly/3nN5240

On receipt of your instructions, the Marine Surveying Academy Ltd will invoice you.

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