LLOYD'S MARITIME ACADEMY

DIPLOMA IN NAVAL ARCHITECTURE

EXPLORE AND EXPAND UPON FUNDAMENTAL NAVAL ARCHITECTURE KNOWLEDGE - TRAINING COURSE BY TUTORED DISTANCE LEARNING

Assessed and Awarded by

NKC NORTH KENT COLLEGE

www.lloydsmaritimeacademy.com/dna

surveyingandtechnical@informaconnect.com UK +44 (0)20 7017 4483

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ABOUT THIS COURSE

Our Diploma in Naval Architecture will dig into all the technical, mathematical and practical aspects of a ship's design. You will learn from industry experts who are here to guide and support students through all the required topics - no bulkhead will be unchecked, no metacentre left unbalanced, and no rudder unturned.

For those who are aiming towards a degree in Naval Architecture this course will provide a smooth transition to that level.

COURSE HIGHLIGHTS

Delivered by experts in the field – Course Director: **Allan Larsen**

Duration:
12 months

Delivery:
Online with support from leading industry experts

Award:
Diploma in Naval Architecture

KEY INFORMATION

When does it start and how long is the course?

The course is 12 months long and the modules are released online, one every month. Please go online to see the next available start date.

What are the entry requirements?

Participants should be able to prove a minimum achievement of A-Level or equivalent (High School) or those who demonstrate a number of years of relevant industry experience are welcome to apply. You must have an adequate command of English in order to meet the demands of the course. Participants are recommended to have completed study of mathematics to a high school level before enrolling for this course.

How is the course assessed?

The course is assessed through written course work comprising of 3 Tutor Marked Assignments delivered at intervals throughout the programme and a final Case Study. Written assignments are submitted online, and written feedback is provided by the marker.

How much does it cost?

Please go online to **www.lloydsmaritimeacademy.com/dna** and see the Fees page for full details. An interest-free instalment plan is available. Please contact us for more details.

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WHO SHOULD TAKE THIS COURSE?

IDEAL FOR

- ✓ **Engineers** who would benefit from a knowledge of the concepts underlying ship construction
- ✓ **Shipyard and dry dock personnel** who need to understand the role of naval architecture in ship construction and repair
- ✓ **Project managers, consultants, surveyors, and allied roles** who need to develop their theoretical and practical knowledge of ship design and construction
- ✓ **Legal, regulatory and insurance professionals** from Classification Societies, P&I Clubs, Maritime Authorities and Flag States needing to develop their understanding of naval architecture
- ✓ **Other associated roles**, such as sales and marketing, commercial managers, estimators and purchasing personnel who would benefit from a greater knowledge of ship design and construction for their roles

If you are looking for a solid understanding of ship design, construction, repair, modification, stability and operation of vessels and other floating structures within the marine environment, our course has you covered.

Group Bookings may qualify for a discounted enrolment fee.

Click here to find out more.

"This course is a great addition to our international portfolio. The subject of Naval Architecture is in many respects not a new science, but it's value in the marine industry is as important today as it ever has been. In fact, as the marine industry strives for ever more efficient vessels and reduced financial and environmental impact from the production, operation and decommissioning of these, the subject of Naval Architecture must continue to rise to new challenges as well as utilise tried and tested calculations and construction methods."

Allan Larsen, Course Director, Diploma in Naval Architecture

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COURSE DIRECTOR

Course Director - Allan Larsen

Allan is a European Engineer registered with FEANI, Fellow of the Royal Institution of Naval Architects, Fellow of the Institute of Marine Engineering, Science and Technology and a member of The Society of Consulting Marine Engineers and Ship Surveyors in addition to holding professional accreditation as both a Chartered Engineer and Chartered Marine Engineer

HOW YOU WILL LEARN

Every course is broken down into manageable modules, designed to accelerate your learning process through diverse learning activities:

- ✓ Work through your instructional material online
- ✓ Interact with your peers and learning facilitators through the online forum to discuss subject related issues and to network with your fellow learners
- ✓ Investigate relevant, real-world case studies
- ✓ Apply what you learn each week to ongoing Tutor Marked Assignments

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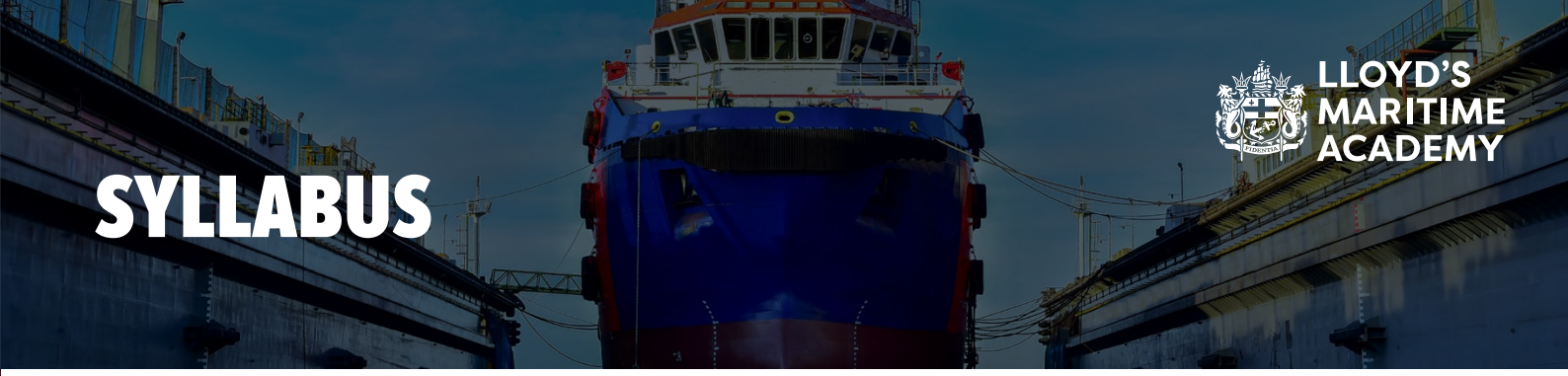

SYLLABUS

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MODULE 1

Naval Architecture in the 21st Century

The first module provides a thorough introduction to the course and familiarises students with the key concepts of naval architecture, its history and future development. Definitions used within naval architecture are explained, ship geometry is defined and explained and working examples are utilised to explain the rationale for underlying concepts.

- Develop an appreciation and understanding of concepts within naval architecture
- List the concepts involved in defining the ship's geometry
- Calculate a ship's various aspects related to its geometry
- Explain how naval architecture interacts and combines with other mechanical engineering disciplines

MODULE 2

Application of Hydrostatics

Building on module one, this module develops student's understanding of hydrostatics, the need for it, the concepts used, and the laws which governs their limitations.

- Apply the laws which governs hydrostatics, and the mathematical modelling used
- Define the forces that a floating structure is subject to
- Develop working knowledge in calculating various hydrostatics elements
- Assess various hydrostatics elements required by marine engineers
- Describe the concepts related to the ship's equilibrium and the factors affecting it

MODULE 3

Ship Stability and Trim

This module develops an understanding of stability with examination of the concepts used, the elements of stability, assessment of stability and the laws which govern it.

- Apply the concept of ship stability and the elements influencing stability
- Develop a working knowledge of elements of stability assessments both at small angles and large angles
- Utilise methods in assessing damaged stability
- Explain the role ship's subdivision plays in naval architecture

MODULE 4

Ship Hydrodynamics

This module develops the student's knowledge related to the ship's propulsion. The module re-explores the concepts and tools of fluid mechanics and explain the criteria and means of experimental assessment of propulsion using models. It then continues by explaining and developing concepts such as drag, and the interaction in between the ship and waves.

- Apply the concepts of fluid mechanics in the modelling of the drag component
- Explain what forces are acting on the ship during movement and what the overall interaction with environment is
- Use the appropriate tools in the assessment of the ship's propulsion
- Describe the constraints of the ship navigating in certain areas

SYLLABUS CONTINUED

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MODULE 5

Ship's Propellers, Rudders and Manoeuvrability

Concepts behind propulsion and manoeuvrability are explored with explanations of the fundamentals of the screw propeller's geometry and rudders. The module addresses mathematical modelling, and its related thrust and torque as well as the experimental methods used in relation to the theory of similitude in screw propeller efficiency assessment and hull-propeller interaction. The module ends with an examination of the geometry of the rudder and its impact on the ship's movement, and the forces that rudders are subject to.

- Explain the principle of screw propeller functioning
- Define screw propeller geometry and how this geometry will affect torque and thrust
- Establish basic screw propeller design parameters
- Apply concepts relating to rudders geometry and the forces acting on the rudder in ship design
- Explain how the hull/rudder interaction achieves movement in a certain direction

MODULE 6

Seakeeping Qualities

This module examines the ship's motions and environmental impact. The module also describes the ship's oscillational elements both in still water and in waves, developing the mathematical model of the ship's motions.

- List the fundamental types of motions applicable to ships
- Explain the types of ship's oscillations and their modelling for 'still water' conditions
- Apply the concepts of the forces and moments acting on the ship on waves in ship design

MODULE 7

The Working Environment, Design Base and Ship Performance

The module investigates the environment in which the ship operates, as well as the associated design constraints and requirements.

- Describe the environment constraints related to the ship's operation at the boundary of two fluids
- Utilise the impact of environment elements on the ship in the context of the ship's design
- Apply an understanding of the regulatory framework to limit the ship's operating impact on environment

MODULE 8

The Ship and Marine Structures

The module explores the structural, design and structural assessment of the ship and other marine structures. It explores the Theory of Solid Body which is used in the mathematical modelling of loads induced by environment elements and the ship's or marine structure response to them.

- Apply the basic outcomes of the Theory of Solid Body with regards to ship design
- Apply the concepts of mathematical modelling with regards to Finite Element Analysis (FEA)
- Apply the concepts used in the assessment of steel structures under various loads
- Describe the requirements of goal-based design
- Determine and apply mathematical modelling of the ship on water, both in 'still water' and dynamic on wave modes
- Develop working knowledge of the structural assessment of the ship

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SYLLABUS CONTINUED

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MODULE 9

Ship Design Process

The module explains fundamental concepts with regards to the ship's design, emphasising the elements of the ship's design process flow. The module also familiarises students with the role of classification societies with regards to naval architecture concepts.

- List and map the various design stages and elements within the ship design process flow
- Apply computer aided design to the ship design process
- Realise the varied aspects to consider when designing a ship
- Define the classification of ships followings various scopes

MODULE 10

Ship Construction

The final module explores the structural arrangements of ships and floating structures following their scopes and specification. Within the module students will become familiarised with the ship's structural nomenclature. Key elements related to material science and welding will also be explained.

- Define the nomenclature of the structural elements, with particular regard to loading and structural arrangements
- Apply systems of structural framing, following the ship's scope and specifications
- Describe the construction of the ship's structure
- Discuss the specific construction aspects of various merchant ships

"Starting in June this new Diploma Level course will provide students with the opportunity to study a subject which is the very basis for the design, construction, conversion and repair of boats, ships and offshore floating units. This course is a fantastic opportunity for shipping companies and individuals to develop and apply key Naval Architecture theories and principles whilst gaining theoretical knowledge of how these are applied to the marine environment in a practical sense. I very much look forward to engaging with delegates during their studies and to assisting them in gaining the associated Diploma award."

Allan Larsen,
Course Director,
Diploma in Naval Architecture

JOIN US ONLINE FOR EXCLUSIVE OFFERS AND UPDATES!

WHO WE ARE

LLOYD'S MARITIME ACADEMY

ABOUT LLOYD'S MARITIME ACADEMY

Lloyd's Maritime Academy was born from Lloyd's List.

Lloyd's Maritime Academy is the trusted brand for professional development, working with leading academic and industry bodies to provide accredited education and training where it is much needed.

We are stepping up investment in new learning management platforms, improved content and learner resources to enhance your experience and ensure maximum reward for the investment you make in your future.

We continue to research new topics to provide you with the qualifications needed for a successful career; supporting a safer, cleaner and more efficient shipping industry for decades to come.

We look forward to welcoming you onto one of our programmes.

www.lloydsmaritimeacademy.com

WHY TAKE A LLOYD'S MARITIME ACADEMY COURSE?

Accessible – 24/7 availability from wherever you have an internet connection

Flexible – take control of where, when, how and the rate at which you study

Professional – industry leading course directors and tutors

Quality – study the same course used by corporations for internal training

Network – with tutors and like-minded professionals from around the world. Use our online tutorial forum to ask questions and share knowledge

Save money – no additional travel or accommodation costs

NKC NORTH KENT COLLEGE

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North Kent College is a major UK college based on the River Thames providing further and higher education in the south east of England. The College caters for more than 4,500 students across two main campuses, with a wide variety of academic and vocational courses, as well as professional education and training via short courses, part-time study or distance learning. Full-time and part-time higher education programmes and foundation degrees are delivered via a partnership with the University of Greenwich.

The National Maritime Training Centre at North Kent College is widely recognised within the maritime industry for providing sector-specific training within high quality industry-standard facilities.

The College is committed to helping students to achieve their ambition – whether they wish to gain their first job, achieve high-level professional qualifications, change career or prepare for their next promotion. The College takes pride in working in partnership with industry to provide the correct mix of knowledge and practical skills that are required to sustain the workforce.

North Kent College is a partner of Lloyd's Maritime Academy in delivering this course and manages assessment, quality assurance and the award of the professional development Diploma.

www.northkent.ac.uk/nmtc

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CLICK HERE TO REGISTER NOW

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