



TRAINING CATALOGUE

Academy Korea





1001 Hull Structure Module 1 **– Basic Concept** **2 DAYS**

Contents

- Maritime Regime
 - Class Systematic & its role
 - The importance of ship's operational aspects and critical points in designs
 - Organisation of maritime regime and its effect on shipyard
 - Overview & background of various conventions
- Hull strength basic
 - Shipbuilding trend
 - Ship's operation and typical damages
 - Hierarchy of hull structure & strength
 - Strength criteria & requirements
 - Hull steel materials logic
- Practical design aspects
 - Background of prescriptive rule requirement
 - Welding and detail construction design
 - Inspection & N.D.T.

Objective

Upon completion of this course the participants will understand general information on shipbuilding, Class systematic, ship's operation condition and critical points, hull structure and force flow, strength concept & design points, general hull Rules and the background, etc.

Target Group

- All engineers working in shipping/shipbuilding (Design, production, QC & Supervisors)
- New designers in basic hull design departments

1002 System General & Statutory **– Concept & Rules** **3 DAYS**

Contents

- Basic principles of accommodation design
- Basic principles of machinery arrangement, piping, ventilation and insulation
- Rules and regulations introduced by IMO, ILO and Class
- General review of machinery outfitting, hull outfitting, piping and accommodation outfitting
- Application of international conventions

Objective

Upon completion of this course the participants will understand role of Class, purpose of Rules, regulations and recommendations, ship's function, basic concept of system, etc.

Target Group

- All engineers working in shipping/shipbuilding (Design, production, QC & Supervisors)
- New designers in basic system design departments

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1003 Electric general - Principles & Rules 2 DAYS

Contents

- Basic concept of electric systems
- Electrical equipment and the function
- General principles and requirements
- Instrumentation and control systems
- Emergency source

Objective

Upon completion of this course the participants will understand what are Rules and regulations, electrical systems in principle, alarm & control system and instrumentation in principle, etc.

Target Group

- All engineers working in shipping/shipbuilding (Design, production, QC & Supervisors)
- New designers in basic electric design departments

2001 Bulk carriers - Hull design 2 DAYS

Contents

- Different type of bulk carriers and their characteristics
- Different type of bulk cargoes and their characteristics
- Bulk carrier operation
- Bulk carrier safety & loading flexibility
- Typical damage of bulk carrier
- Bulk carrier design concept and parameters
- Scantling calculation and strength analysis
- Structural detail & function of bulk carriers
- Theoretical knowledge of beams/loads/strength
- CSR for bulk carriers
- PMA & PSPC

Objective

Upon completion of this course the participants will understand

- Bulk carrier operation, bulk carrier strength & design, bulk carrier rules background, etc.
- Application of rules for practical design
- CSR application for bulk carriers

Target Group

Engineers who have attended the basic hull course or Engineers who have more than 2 years experience in hull design.

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2002 Tankers - Hull design 2 DAYS

Contents

- General hull structure of tankers
- Tanker design basis
- Newly introduced CSR rule & rule background
- Loads concepts and application of loads
- Buckling / Fatigue
- Tanker design concept and parameters
- Hull girder strength and H-ULS
- Sloshing and impact
- Finite element analysis and guidance for strength analysis
- Prescriptive rules review & scantling requirements
- Material & welding

Objective

Upon completion of this course the participants will understand tanker structure, tanker strength & design concept, tanker rules background, various loads and loads application on tanker, CSR rule and its application to design, etc.

Target Group

Engineers who have attended the basic hull course or
Engineers who have more than 2 years experience in hull Design.

2003 Container carriers - Hull design 2 DAYS

Contents

- General hull structure of container carriers
- Container carrier statistic and market & design trend
- Class Rules and application
- Guidance for strength analysis
- Tensional strength analysis method
- Operational aspects and design concept
- Container ship evolution & current design trend
- Container securing
- Interaction between hull structure & outfitting
- Critical areas for hull structure
- Typical hull damages

Objective

Upon completion of this course the participants will understand container carrier operation, container carrier strength & design, container carrier rules background, container securing & outfitting and critical areas in design, etc.

Target Group

Engineers who have attended the basic hull course or
Engineers who have more than 2 years experience in hull Design.

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2006 Piping System & Statutory Design 3 DAYS

Contents

- Cargo handling system and cargo vessels
- Applicable Class Rules and international requirements
- Design principles of ballast, bilge, air, sounding, deck fire-fighting, fire integrity, load line and ventilation system in cargo area
- Rule background and the application
- Relevant MARPOL, SOLAS, LL and BC code

Objective

Upon completion of this course the participants will understand ship cargo handling system, applicable class rules & international requirements, design principle of each system, Classification of cargoes, etc.

Target Group

Engineers who have attended the system general course or engineers who have more than 2 years experience in hull Piping.

2007 Accommodation design 2 DAYS

Contents

- Background of Rules for accommodation and the application
- Relevant regulations of SOLAS and ILO convention
- Arrangement of means of escape
- Ventilation system in accommodation
- Fire insulation/detection/alarm/fight system in accommodation
- General requirements for ship's piping system
- Rules and convention for sanitary and fresh water system

Objective

Upon completion of this course the participants will understand SOLAS 74 & ILO requirements, fire technical considerations, means of escape, details of construction, accommodation comfort, ventilation system, etc.

Target Group

Engineers who have attended the system general course or Engineers who have more than 2 years experience in accommodation design.

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2008 Electric design 2 DAYS

Contents

- General requirements, class & statutory
- Design principles
- Distribution principles & redundancy
- Emergency source
- Control systems
- Instrumentation
- General installation onboard

Objective

Upon completion of this course the participants will understand applicable Rules & regulations, electrical system in principle, alarm & control system, instrumentation in principle, etc.

Target Group

Engineers who have attended the electric general course or Engineers who have more than 2 years experience in electric Design.

2010 Safety of navigation I –Equipment 2 DAYS

Contents

- SOLAS Chapter V
 - IMO performance standards
- NAUT-class notations
 - additional performance requirements
 - certification requirements
- Interconnection of navigational systems
 - IEC 61162 series of standards
- Integrated Navigation Systems INS
 - IEC standards 61924-2 (INS)
 - IEC standards 61162-450 (LAN)
- NAUT-suffix ICS (integrated computer systems)
- eNavigation
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Objective

Upon completion of this course the participants will understand IMO SOLAS carriage requirements, DNV Rules and application, etc.

Target Group

Experienced engineers/designers more than 2 years

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2012 Car Carrier – Hull Design and General 2 DAYS

Contents

- History of Car carriers
- Market Status and Demands
- Hull Structures
- Stability
- System and Statutory
- RO/RO Equipment

Objective

Upon completion of this course the participants will take the hull design and general understanding of car carriers.

Target Group

Engineers for car carriers
Maker for RO/RO equipment
QM or Superintendent Performing Relevant Inspection
Anyone interested in Car carriers

2013 Energy Efficiency Design Index(EEDI) 2 DAYS

Contents

- Introduction of EEDI regulations
- Required EEDI
- Attained EEDI
- Verification process
- Model tank test for EEDI
- Speed trial procedure
- Speed trial correction
- Innovative technologies and their influence on EEDI

Objective

Upon completion of this course, the participants will get an overview of EEDI regulations, verification scope of model tank test, procedure & correction of speed trial and effects of innovative technologies on EEDI.

Target Group

Yard engineers who are involved in EEDI-related activities and who want to get a good foundation for EEDI

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3000 Hull Structure Module 2 **– CSRH & DNV 1A Rule Principle** **2 DAYS**

Contents

- General rule philosophy for hull structures
- Design basis
- Load concepts and application of loads
- Hull girder strength
 - Hull girder yield strength, hull girder ultimate strength & hull girder residual strength
- Hull local scantlings
 - Prescriptive requirements
- Direct strength analysis
 - Hold structural strength analysis
 - Local fine mesh structural strength analysis
- Buckling
- Fatigue
- Material & welding
- Ship type specific requirements for CSR and DNV rules

Objective

Upon completion of this course the participants will get an overview of rule concept and understanding on application of CSR BC&OT and DNV hull structure rules, and technical rule background for each ship type.

Target Group

Engineers who are familiar with basic hull concepts & design or experienced engineer who are familiar with various type of ships.

3002 Fatigue Assessment **3 DAYS**

Contents

- Fatigue damages
- SN-curves and miner summation
- Fatigue assessment for NAUTICUS(Newbuilding), Classification Notes 30.7
- Introduction to fatigue assessment for PULS-1/PULS-2

Objective

Upon completion of this course the participants will understand fatigue basic, DNV CN for fatigue and the procedure for PULS notations, NAUTICUS software for fatigue strength assessment, etc.

Target Group

Engineers in hull/outfitting department having more than 2 years experience.

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3005 Material Technology 3 DAYS

Contents

- Basic requirements to construction materials
- Basic facts about metallic materials
- Phase diagrams
- Steels, carbon manganese, aluminum, stainless steels and others

Objective

Upon completion of this course the participants will understand materials, application to ships, requirements, etc.

Target Group

Engineers in hull/outfitting design department having more than 2 years experience

3006 Noise & Vibration 2 DAYS

Contents

- Concept of noise & vibration
- 1st step, 2nd step and 3rd step analysis
- Measurements and trouble shooting
- Design recommendations to reduce noise & vibration

Objective

Upon completion of this course the participants will understand concept of noise & vibration, approach method, analysis steps, design against noise & vibration, etc.

Target Group

Engineers having basic knowledge in noise & vibration and in FEA

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3007 Gas Carrier & Gas Fueled Ship - Hull 2 DAYS

Contents

- Design philosophy of gas tank
- Rules and regulations
- Structural arrangement and characteristic of IMO tank type
- Strength analysis
- Temperature analysis and materials

Objective

Upon completion of this course the participants will obtain improved understanding of gas carriers/gas fuel tank structures. Rules and regulations, material selection for lower temperature cargoes, etc.

Target Group

Engineers having basic knowledge in hull design and gas carriers

3008 LNG – System 2 DAYS

Contents

- LNG cargo handling, systems & operation
- Cargo piping
- Cargo tank safety relief valves
- Fire protection
- Personnel protection equipment
- Electric installations in cargo area
- Instrumentation & cargo equipment

Objective

Upon completion of this course the participants will understand LNG carriers, cargo containment system, Rules and regulations, etc.

Target Group

Engineers having basic knowledge in system design and gas carriers

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3015 LPG – System 2 DAYS

Contents

- Applicable rules & regulations, Type of cargoes
- Damage stability & cargo tank location
- Ship arrangement
- Cargo containment
- Cargo handling systems I & II
- Design of pressure vessel type cargo tanks
- Design of prismatic type cargo tanks

Objective

Upon completion of this course the participants will understand LPG carriers, cargo containment system, Rules and regulations, etc.

Target Group

Engineers having basic knowledge in system design and gas carriers

3022 FLNG System 2 DAYS

Contents

- Basic design concept and design philosophy of FLNG
 - Process descriptions and process flow diagrams
 - Operation/Safety philosophy
- Conceptual level design
 - Safety systems
 - Emergency shutdown
 - Electric systems
 - Mechanical systems
- Rules & Regulations to be applied
- Use of Risk Assessment in FLNG design
 - Loss of well containment for LNG production installations
 - Gas release into confined space
 - Release of toxic on other hazardous substance
 - Loss of mooring, propulsion, station keeping

Objective

Upon completion of this course the participants will understand basic design concept of FLNG's safety, novel aspects and application in LNG transfer, conceptual system design

Target Group

All engineers working in LNG FPSO & FSRU segment (design, production, QC & supervisors)

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3023 LNG as Ship Fuel

2 DAYS

Content

The introduction of stricter local, national and international environmental legislations demands new solutions for fuels within the maritime industry

One possible approach to meet the emission requirements is to use natural gas as fuel for propulsion and electric power generation on board.

Until recently, there was a lack of international safety requirements for gas as fuel for non- LNG tankers. However, on 1 January 2017 the IGF-Code (International Code of Safety for Ships using Gases or other Low-flashpoint Fuels) entered into force.

This Code provides mandatory provisions for the arrangement and installation of low- flashpoint fuelled machinery.

DNV has recently updated its Rules to include all statutory requirements (except risk assessment, operational requirements and training). Our Rules provides clear and prescriptive criteria together with function-based requirements enabling more innovative solutions.

While exploring the details of typical LNG fuel systems this course will show how safety challenges and associated risks are mitigated through applicable rules and regulations. The course aim to engage technical personnel through discussions and challenging cases giving them a better understanding of LNG as ship fuel. With over 15 years of experience with gas fuelled vessels DNV GL can be considered your trusted partner preparing ships

Objective

The course will give the participants an overview about the current developments in the field of LNG as ship fuel.

Target Group

Technical personnel within shipping companies, yards and designers (e.g. engineers, technical directors, fleet managers, superintendents etc.)

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6002-2 NORSOK Standard - Safety/Working Environment 2 DAYS

Contents

- Introduction of S-001, S-002, S-003, S-005, S-006, S-011, S-012
- S-002 Working Environment
- S-012 Health, Safety and Environment (HSE) in construction – related activities
- Rules and Regulations – PSA Regulations

Objective

Upon completion of this course the participants will understand the background of the NORSOK Regime and how the standards are developed and maintained

Target Group

All engineers working in offshore plant project

6002-5 NORSOK projects – Lessons Learned 2 DAYS

Contents

This course highlights the most challenging areas when applying the NORSOK standards including specific solutions for how these challenges can be effectively addressed

Objective

Upon completion of this course the participants will have an understanding of typical pitfalls and challenges related to the application of NORSOK and how these can be effectively addressed. The course offers some interactive parts where the participants get the chance to share and reflect upon their own experiences from NORSOK projects.

Target Group

Project personnel involved in implementing NORSOK standards in design

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6004 LNG Essential & Liquefaction System 2 DAYS

Contents

- LNG value chain overview
- LNG facts
- Feed pretreatment
 - Acid gas removal
 - Dehydration / Mercury removal
- LNG liquefaction cycle
 - Cascade cycle
 - Mixed refrigerant cycle (single MR, C3MR and etc)
 - N2 expander cycle
- Evaluation of liquefaction process for FLNG
- Cryogenic equipment for LNG liquefaction
 - Transfer system
 - Compressor / Expander / Heat exchanger

Objective

Upon completion of this course the participants will understand general information on LNG value chain and LNG liquefaction system including feed treatment system, various liquefaction cycles and FLNG applications etc.

Target Group

All engineers working in LNG projects and managers and marketing personnel who need to present and profile LNG capabilities

6005 Wave Load Analysis for Ship 2 DAYS

Contents

- Introduction of basis for hydrodynamics
- Overview of ship motion in waves
- Ship motion analysis using HydroD
- Estimation of roll damping using WAVESHIP
- Overview of statistics for sea waves
- Statistical post-processing using POSTRESP

Objective

Upon completion of this course the participants will understand hydrodynamic basis, ship motion in wave, etc. and will perform ship motions analysis, statistical post-processing using DNV SESAM package

Target Group

Engineers having basic knowledge in hydrodynamic analysis

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6011 Dynamic Positioning System 2 DAYS

Contents

- DP system in general
- Design features and related rules and standards
- DP system-Power system
- DP system-Thruster system
- DP system-Control system
- FMEA
- DP trials

Objective

Upon completion of this course the participants will understand the design features, class rules related to DP system, Operational Challenges and Survey / Inspection requirements

Target Group

All engineers with experience of general ship systems and the fields of instrumentation, automation and electrical engineering

6012 FMEA 2 DAYS

Contents

- FMEA in general
- Related rules and standards
- Single failure
- Redundancy
- FMEA for DP vessels and vessels with propulsion redundancy notation
- FMEA proving trials

Objective

Upon completion of this course the participants will understand FMEA general and FMEA for DP vessels and vessels for propulsion redundancy

Target Group

All engineers with experience of general ship systems and the fields of instrumentation, automation and electrical engineering

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