ABS TRAINING SOLUTIONS

FOR GOVERNMENT

ABS courses are used by many of the industry's leading shipowners to enhance the operational safety and performance of their assets.

ABS is committed to being your training partner. This commitment means providing courses that extend beyond the traditional curriculum and present you with training solutions to address your needs.

Designed to meet the technical and management needs of shipowners, managers, and operators of marine and offshore assets, ABS' targeted training features best practice applications for design and operations.

MARITIME INCIDENT INVESTIGATIONS

Many incidents, hazardous occurrences, and near misses on board maritime assets are caused by human errors and can result in considerable losses.

Learning lessons from incidents and putting preventive measures in place to make sure they do not happen again is the key to loss prevention. To achieve this, it is crucial that the various contributory factors and root causes are properly identified and understood.

Using the ABS Guidance Notes on the Investigation of Marine Incidents, participants will engage in several group activities incorporating the ABS MaRCAT investigation process to classify and identify root causes.

COURSE DURATION: 2 DAYS

HIGHLIGHTS

In this two-day course, experienced instructors will explain the principles covering root cause analysis. Through a series of workshops, participants will be shown a systematic and practical model of an incident investigation program that will help them implement a similar or derived version in their own organizations.

- Describe the fundamentals of incident investigation and the stages involved
- Gather and preserve the data needed to carry out an incident investigation
- Conduct investigation interviews in an effective manner
- Sort and analyze all the various data obtained in the investigation process
- Apply the root cause analysis techniques and identify the causal factors and their root causes
- Prepare an investigation report for the El Faro incident with intermediate causes and recommendations

RISK ASSESSMENT IMPLEMENTATION

This course introduces fundamental qualitative and quantitative risk concepts, common hazard identification (HAZID), and risk estimation. With mock HAZID exercises, participants will learn how to assess and prioritize routine and non-routine risks using a risk matrix.

The course focuses on organizing and managing qualitative risk assessment information.

COURSE DURATION: 2 DAYS

HIGHLIGHTS

During this interactive two-day course, experienced instructors will guide participants through implementing risk assessment tools by using practical examples and workshops.

- Overview of basic theories and principles of HAZID and risk assessment
- Description of qualitative and quantitative methodologies:
  - What-If analysis
  - HAZID
  - Job hazard analysis
- How to decide when to apply risk assessment
- Review of the capabilities and limitations of tools and when to use them
- How to rank and prioritize the hazards
- Risk management and mitigation

ORIENTATION TO IN-SERVICE CLASSIFICATION AND STATUTORY SURVEYS

The classification process and its interrelationship with international and flag regulations is not always well understood.

This course, specifically structured for those in a supervisory role within a shipowning, operating, or management company, provides participants with insight into the evolution of classification and statutory requirements, with particular emphasis on in-service surveys.

HIGHLIGHTS

During this two-day course, experienced instructors explain best practices to prepare for in-service class and statutory surveys to confirm that the concepts are clearly defined and understood.

- Evolution of classification societies and IACS
- Scope of classification surveys:
  - Surveyor's role
  - Class surveys
  - Surveys during construction
  - Damage surveys
  - Transfer of class
  - Surveys during sale of vessel
  - Equipment certification
  - Cargo gear surveys
  - Dual/double class
- Relationship between classification and statutory surveys
- Scope of statutory surveys:
  - Delegation of authority by flag Administrations
  - Status of the surveyor during statutory surveys
  - Load line surveys
  - Safety construction, safety equipment, safety radio surveys
  - Intervals and scope
  - MARPOL surveys
  - Other surveys related to statutory work

COURSE DURATION: 2 DAYS

HULL INSPECTIONS FOR SUPERINTENDENTS

The ABS Hull Inspection and Maintenance Program (HIMP) was designed to help shipowners and operators effectively inspect and maintain the hull structures on their vessels. HIMP inspections help shipowners systematically identify, record, examine, and grade hull structure conditions, including defects.

This course provides participants with an understanding of a vessel's critical structural areas for the purpose of periodic surveillance. Shipowners will benefit by learning how to develop an effective hull inspection and maintenance program based on HIMP requirements.

HIGHLIGHTS

In this one-day course, experienced instructors will explain how to structure and conduct an owner's hull inspection and maintenance program in alignment with HIMP.

- Inspection criteria
- Inspection planning
- Inspection technique
- Safety practices, including confined space entry
- Critical areas
- Zoning methodology
- Workshop on grading structure
- Inspection reporting

COURSE DURATION: 1 DAY

METHANOL AS MARINE FUEL

Governments and stakeholders worldwide are looking to reduce dependency on conventional fuels and reduce emissions to help improve air quality and protect the environment. As a low-flashpoint fuel, methanol is drawing wider interest from ship owners and operators opting to reduce their carbon footprints.

Environmental regulations from the International Maritime Organization and countries around the globe are requiring ships to decrease emissions of sulfur and nitrogen oxides and carbon dioxide. Methanol is a clean burning, biodegradable, and economical alternative fuel that meets tightening emission standards and is readily available around the globe.

COURSE DURATION: 3 DAYS

HIGHLIGHTS

In this interactive three-day course, experienced instructors will take participants step by step through the operational and technical aspects of operating methanol-fueled vessels.

- Alternative fuel considerations
- Methanol as marine fuel
- Health and safety concerns for methanol
- Overview of Rules and regulations (including IGF Code and interim guidelines)
- Design risk assessment
- Ship design and arrangement
- Fuel containment system
- Fuel supply system
- Methanol-fueled engines
- Fire safety and explosion prevention
- Control, monitoring and safety systems
- Methanol bunkering operations
- ABS survey activities

LNG AS MARINE FUEL

LNG is a cleaner-burning fuel that is increasingly being used as marine fuel. There are significant advantages to switching to LNG as fuel, including meeting regulatory requirements, offering enhanced competitiveness, improving overall air quality, and reducing emissions.

LNG is increasingly being used as a marine fuel due to its environmental benefits . The use of LNG as a marine fuel can reduce sulfur oxide (SOx) emissions by nearly 95%, nitrogen oxide (NOx) emissions by 85%, and particulate matter (PM) emissions by 98% compared to heavy fuel oil. The use of LNG as a marine fuel also reduces greenhouse gas (GHG) emissions by up to 25% compared to heavy fuel oil .

COURSE DURATION: 3 DAYS

HIGHLIGHTS

In this interactive three-day course, experienced instructors will take participants step by step through the operational and technical aspects of operating LNG-fueled vessels.

- Alternative fuel considerations
- LNG as a marine fuel
- Health and safety concerns for LNG
- Overview of Rules and regulations
- Design risk assessment
- LNG-fueled engines
- Ship design and arrangement
- Fuel containment system
- Fuel gas supply system
- Control, monitoring and safety systems
- Fire safety and explosion prevention
- LNG bunkering operations
- ABS survey activities

AMMONIA AS MARINE FUEL

Ammonia is one of the most promising future fuels in the maritime world. When produced renewably, it is a zero-carbon fuel, enabling ships to eliminate CO_2 emissions. This three-day course covers the advantages of using ammonia as a marine fuel, including its zero-carbon footprint and availability.

Environmental regulations from the International Maritime Organization and countries around the globe are requiring ships to decrease emissions of sulfur and nitrogen oxides and carbon dioxide. Ammonia is an alternative fuel that meets tightening emission standards.

COURSE DURATION: 3 DAYS

HIGHLIGHTS

In this interactive three-day course, experienced instructors will take participants step by step through the operational and technical aspects of operating ammonia-fueled vessels.

- Alternative fuel considerations
- Ammonia as marine fuel
- Health and safety concerns for ammonia
- Overview of Rules and regulations
- Design risk assessment
- Ammonia-fueled engines
- Ship design and arrangement
- Fuel containment system
- Fuel supply system
- Control, monitoring, and safety systems
- Fire safety and explosion prevention
- Ammonia bunkering operations
- ABS survey activities

INVENTORY OF HAZARDOUS MATERIALS (IHM) ONBOARD

This course introduces the fundamentals of the Inventory of Hazardous Materials (IHM) regulations, including those from the Hong Kong Convention and European Union (EU).

Participants will understand and become familiar with the various regulations from the IMO and EU that are related to IHM, as well as industry requirements and practices, IHM guidelines from ABS and EMSA, and requirements of the EU's Ship Recycling Regulation (SRR). By completing this course, participants should be able to compile and maintain an IHM on board. Through continued practice under the guidance of an experienced IHM expert, participants may become an IHM experts themselves.

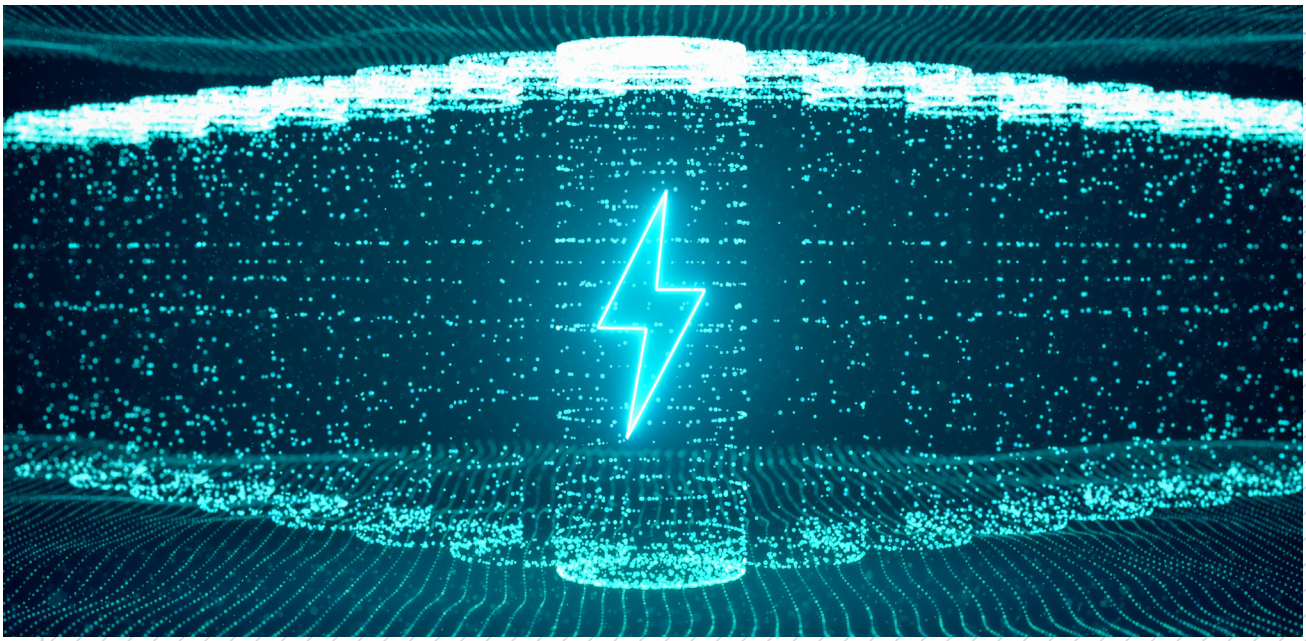
HIGHLIGHTS

During this interactive one-day course, experienced instructors will help participants gain knowledge, skills, and awareness about IHM fundamentals.

- Process to become an approved ABS IHM service provider
- Examples of hazardous materials on ships
- Recognizing how IHM can harm human bodies and the environment
- Key requirements under IHM regulations
- Developing an inventory of hazardous materials
- Inspection, survey, and certification process
- Explaining the ship recycling plan and how to develop one

COURSE DURATION: 1 DAY

BATTERIES AND ELECTRICAL PROPULSION



Lithium-ion (Li-ion) batteries are currently the most prominent battery technology in maritime applications. Batteries can be used in various applications, like peak-shaving in hybrid systems, to help engines work at optimal loading and increase efficiency. They can also be used to run motors or as a backup power source to reduce generator load.

Reducing fuel consumption through hybrid systems can greatly reduce emissions to meet environmental requirements. Battery technologies must be developed to provide the needed power for hybrid systems to be effective, efficient, and sustainable.

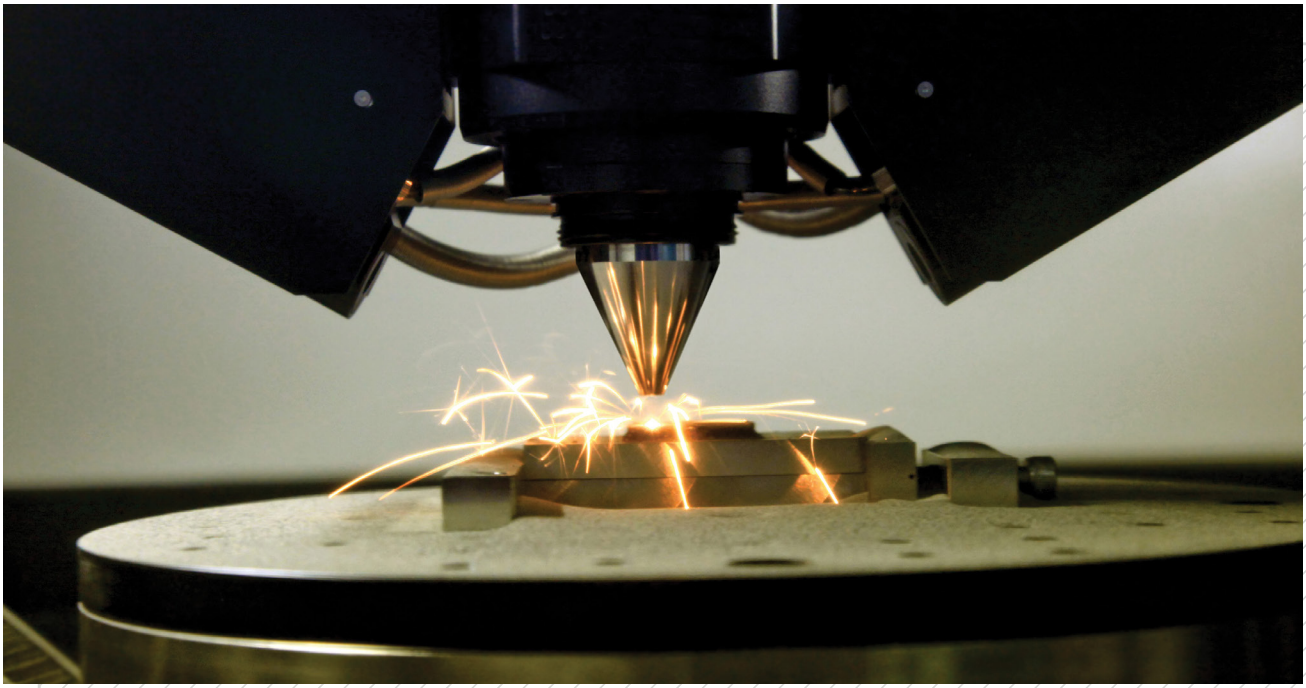
COURSE DURATION: 1 DAY

HIGHLIGHTS

In this interactive one-day course, participants will learn how using Li-ion batteries can reduce fuel costs for propulsion and electric power generation. The course will enable participants to:

- Identify the fundamental mechanisms and components of batteries and compare battery chemistries and properties.
- Recognize requirements for using lithium-ion batteries on marine and offshore units, including battery management system software as a computer-based system.
- Recall various energy storage systems for batteries and principles of battery charging and discharging.
- Describe approaches and requirements for lithium-ion battery fire safety based on prevention, detection, containment, suppression, and emergency response.
- Recognize survey requirements for using lithium-ion batteries on marine and offshore assets, including optional notations

ADDITIVE MANUFACTURING



Additive manufacturing (AM), or 3D printing, refers to multiple manufacturing processes that build parts by adding material layer-by-layer, thereby replacing or augmenting more traditional manufacturing processes such as casting and forging. AM can shrink the supply chain and lead times for specialized and complex parts, introducing new efficiencies driven by design innovation, reduced manufacturing time, and improvements in part availability.

The expanded capability of AM allows for designs not enabled by traditional manufacturing, like complex structures and hollow, lattice, or honeycomb structures, and implementation of metal AM parts for marine and offshore end-use applications.

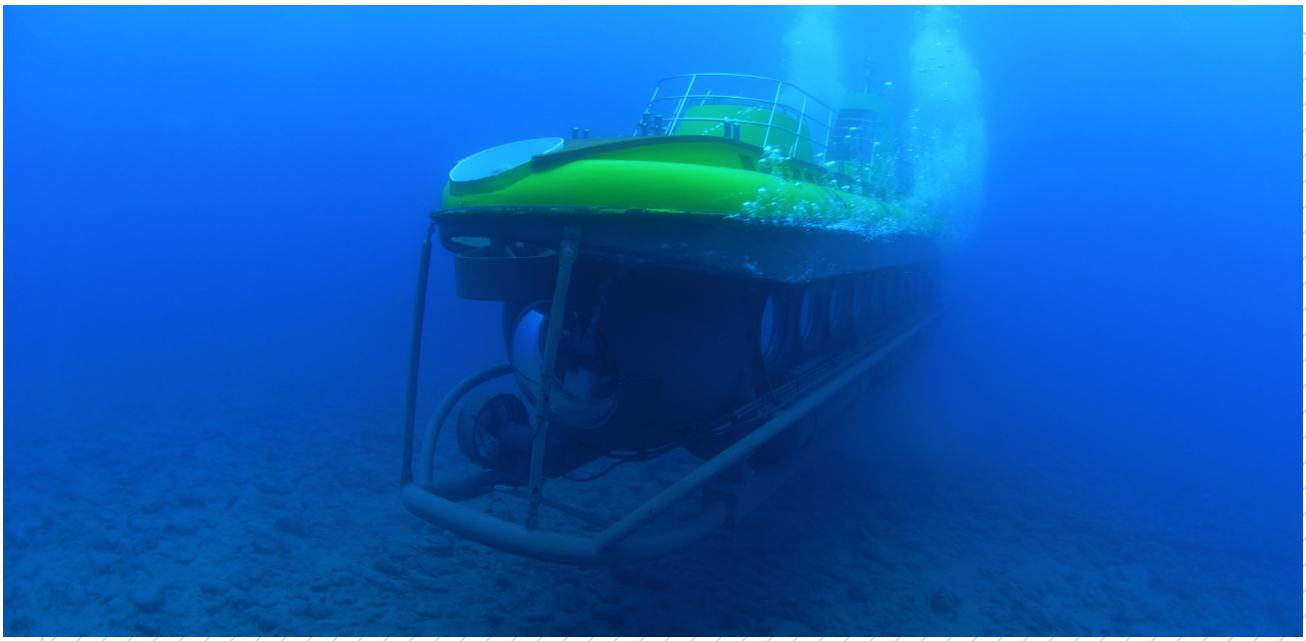
HIGHLIGHTS

This interactive one-day course, provides an overview of additive manufacturing for marine and offshore applications. The course will enable participants to:

- Describe additive manufacturing techniques and identify how they are used in the maritime industry.
- Recognize the ABS requirements for additive manufacturing and explain the approval process for facilities and parts.
- Recall design principles for additive manufacturing and identify material parameters used for the design.
- Recognize what is considered a good print quality and reasons for an inferior quality.
- Identify required submittals for facility and part approval.
- Explain approval process for facility and parts.

COURSE DURATION: 1 DAY

CLASSIFICATION REQUIREMENTS OF UNDERWATER SUBMERSIBLES



This course enhances participants' familiarity with submersible design concepts, the requirements of the ABS Rules for classification of submersibles and relevant industry standards.

Participants will develop an understanding of the classification requirements by reviewing the factors that must be considered in designing a system and specifying the components for compliance with the ABS requirements.

HIGHLIGHTS

In this interactive two-day course, experienced instructors will take participants through the requirements for the classification of submersibles, including design and maintenance.

COURSE DURATION: 2 DAYS

- Engineering aspects
  - Pressure hull and exostructure
  - Windows and viewports
  - Piping and life support systems
  - Electrical systems
  - Buoyancy – emergency ascent and stability
  - Firefighting
  - Navigation and communication equipment
  - Propulsion systems and steering
- Surveys during construction
- Surveys after construction for maintenance of classification throughout service life
  - Annual surveys
  - Special periodical surveys
  - Materials and welding
  - Unscheduled surveys
  - PVHO windows (viewports)

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LOOKING FOR A PRIVATE COURSE?

ABS can customize an instructor-led training course to meet your specific needs. If you have several employees interested in a particular course, talk to us about holding the course onsite at your facility to control costs and improve efficiencies.

For more information, contact your nearest ABS office.