IRCLASS ACADEMY

YOUR PARTNER IN MARITIME PROFESSIONAL DEVELOPMENT

CEMS

3-Day Certification Program On

ALTERNATE FUEL CELL

in Collaboration with **IRCLASS Academy**

19th to 21st November 2025

CEMS, Powai, Mumbai

CENTRE OF EXCELLENCE IN MARITIME AND SHIPBUILDING (CEMS)

Promoted By

Ministry of Ports, Shipping & Waterways
Government of India

SAGARMALA
PORT-LED PROSPERITY

IRCLASS
Indian Register of Shipping

Future Starts Here >>>

Empowering Nation Through Skilling

About CEMS

The Centre of Excellence in Maritime and Shipbuilding (CEMS) is a Not for Profit company established in 2017 by the Ministry of Ports, Shipping and Waterways under the Sagarmala Project. It provides knowledge and skill development in Maritime, Infrastructure, & Manufacturing sectors.
CEMS has world-class infrastructure in Visakhapatnam and Mumbai, with a focus on Industry 4.0. Its mission is to promote the advancement and implementation of industry 4.0 skills, transforming existing industries into smart factories through research and education partnerships.

About IRCLASS Academy

IRCLASSAcademy isa dedicatedcentre for facilitating professional development & skill enhancement in Maritime, Infrastructure & Manufacturing sectors. IRCLASS Academy offers classroom based, virtual and e-learning training courses.

About the Course

The participants will have an overview of various alternative fuels. Advantages and challenges of each fuel type. Comparative analysis of emissions and environmental impacts. Basics of hydrogen and methanol production, storage, and fuel cell or combustion operation. Efficiency, performance metrics, and case studies of hydrogen-powered and methanol-fueled vessels. Specific regulations for hydrogen fuel cells and methanol-based systems in maritime settings. Safety standards and certifications are required for construction and operation. Risk analysis methodologies, including HAZOP (Hazard and Operability Study), power & control system considerations, dispersion analysis, and hydrogen and methanol fuel bunkering. Key design principles for integrating hydrogen fuel cells and methanol propulsion systems into ship systems. Operational safety measures and practices. Understanding the interplay between hydrogen/methanol systems and traditional propulsion systems.

Course Objectives

Todevelop awareness ofkeyconcepts in the Design, Development and Operation ofhydrogen fuel cell-powered ships.

Participants

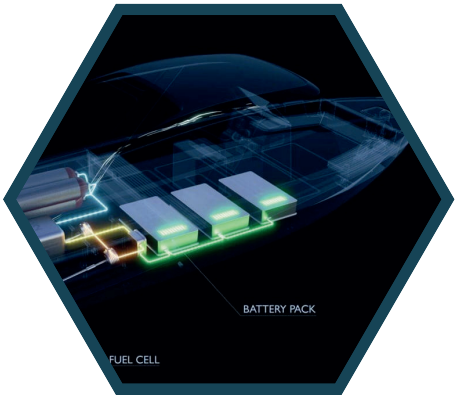
Thetraining will be usefulfor the decision makers from the Government bodies, Shipbuilders, Shipping companies, Ship designers, Ports, Marine equipment manufacturers and all those involved in the supply chain of logistics.

Certification

The course certification will be awarded jointly by CEMS and IRCLASS Academy

Key Topics

- Alternate Fuel Candidates
- Introduction to Hydrogen Fuel Cell / Methanol
- Regulations related to Hydrogen Fuel Cell / Methanol
- Design Consideration - Risk Analysis
- Design Consideration - Power, Control, Machinery aspects
- Design Consideration - HAZOP Analysis, Dispersion analysis
- Design Consideration - System Integration
- Vessel Construction Challenges
- Operational Safety
- Crew Training



Learning Objectives

- Gain in-depth knowledge of alternative fuels for ship propulsion with a focus on hydrogen fuel cells /Methanol.
- Understand the regulatory landscape and safety considerations for hydrogen-powered ships /Methanol.
- Acquire skills in Risk analysis, System design, and Integration relevant to Hydrogen technologies /Methanol.
- Benefit from practical experience from various stakeholders class, the Shipyard, System integrators.

About the Trainers

R Srinivas

MrR.Srinivasis is working as Vice President & Senior Principal Surveyor at the Indian Register of Shipping (IRS). He heads the Electrical and control systems department in IRS plan approval division.

Devrup Kabi

Presently working as Senior Principal Surveyor at Indian Register of Shipping (IRS). He is the Head of Shipbuilding Project Management and Machinery Plan Approval.

Sonali Banerjee

Principal Surveyor at the Indian Register of Shipping, she is a seasoned marine engineer. She attended IMO–WMU's Alternate Fuels training and was part of the UN's Just Transition Task Force at Shanghai Maritime University.

Course Fee Rs. 25,000 + 18% GST

Course fee to be paid in the following account:

Account Name:	CENTRE OF EXCELLENCE IN MARITIME AND SHIPBUILDING (CEMS)
Bank Name:	ICICI Bank Ltd
Account Number:	120501001143
IFSC Code:	ICIC0001205
Branch Address:	Sher-E-Punjab, Andheri (East), Mumbai - 400093

Note: This is a non-residential training program. The fee mentioned above covers training costs and refreshments during the training period only.

Contact Info

Ramesh Yadav:

+91 88280 79205 | +91 86910 54138

ramesh.yadav@cemsindia.org
info@cemsindia.org

Amit Bhatnagar:

+91 7738573541

amit.bhatnagar@irclass.org