

An Online Program in

Electrical, Electronics, Automation and Controls)

Program Objectives

On completion of this programme, the participant will be able to:

- ✓ Refresh concepts of Electricity & Electrical Components
- ✓ Understand safety and maintenance procedures for the various shipboard systems.
- ✓ Understand concepts of Semiconductor Physics and electronics
- ✓ Gain knowledge on application of electronic devices on board ships
- ✓ Acquire knowledge of instruments, process control and automation
- ✓ Have a clear understanding of electronic and digital automation.

Program Highlight

Use of  **AUTOMATION STUDIO™**
to learn Electronic and
Electrical Practical, PLC
connections and Ladder
Logic programming

Program Contents

Section A – Electrical

- ✓ Introduction to Electrical Basics, Electrical Safety and understand the electrical circuit diagrams & symbols.
- ✓ Introduction to Electrical Hand tools and Instruments, its usage and operating principle
- ✓ Power Generation and Electrical Distribution
- ✓ Motors – Operating Principle, Control and maintenance
- ✓ Starters- Operation, Control and maintenance
- ✓ Batteries- Types, Operation and maintenance
- ✓ Circuit Protection Devices – Circuit Breakers, Fuses & Switchgear safeties.
- ✓ Electrical Troubleshooting – Case Studies

Section B – Electronics

- ✓ Basics of electronics; Semiconductors, Diodes and Transistors
- ✓ Reading of various electronic charts, symbols and circuit diagrams
- ✓ Op. Amps and Thyristors and their application.

Section C – Automation and Controls

- ✓ Introduction to Automation and Controls-Open Loop & Closed Loop System
- ✓ Sensors, Transducers and Controllers
- ✓ PID control and tuning, Final Control Elements
- ✓ PLC Introduction and Concept of Ladder Diagram



IMO – OEEAC. Rev: 1.0/Jan2022



Program Duration: 6 * 0.5 days

Target Participants: Marine Engineers at Management and Operational Levels.



Our Trainers

Pankaj Dalvi

Mr. Pankaj Dalvi graduated from DMET in 1995, and has since worked on Bulk carriers, Containers, Tankers, LPG ships and also onboard offshore supply vessels. His shore experience includes exposure to crewing and training with NYK Ship Management. As Promoter and Managing Director of Trigen Marine, Pankaj has years of experience in providing superintendence, technical support and guidance onboard to staff and technical managers for all types of vessels. Pankaj has been with ISF Group as a trainer for over 5 years and has trained over 300 seafarers in the field of marine engineering, electronics, electricals.



Prathamesh Dange

Mr. Prathamesh Dange, class 1 marine engineer Graduated from TMI in 2009, has more than 11 years' experience working on oil & chemical tankers, bulk carriers and onboard offshore supply vessels. His experience at shore includes classroom & onboard training, performing quality and maritime institute audits, technical consultancy for vessels with electronic engines. At ISF, he has been instrumental in developing advance training programs on electronics, electrical, automation & controls, electronically controlled engines and has trained over 200 seafaring engineers till date. He has also developed the distance learning program and conducted technical workshops for various ranks.



Sudhir Bhatia

Sudhir Bhatia is a Class I Marine Engineer with over 20 years of rich & extensive experience in vessel operations, maintenance and Management, Quality management and assurance under ISO 9000, 14000 Standards, etc. He has also been instrumental in several training initiatives at ISF such as Faculty Development Program, Competency Development Programs for management & operational level ship staff, Port State Control Officers Workshop for Riyadh-MoU – Kuwait, Dock Master Training for UAE Navy & Abu Dhabi Shipbuilding on behalf of Lloyd's Maritime Academy - Abu Dhabi, Class II Certificate Preparatory Program for National Ferries Company of Oman – Muscat, EU-MRV & IMO DCS Regulations & Compliance Course – Singapore, Athens, Istanbul.



Yogyata Kapoor

Yogyata Kapoor is an experienced professional for technical product development, consultancy and training, marketing, and business development. She has an MSc. in Mechatronics (automotive) from Cranfield university, UK. She has worked extensively in the Marine industry and Mechanical Vibration industry and dealt with businesses and clients that are product manufacturers, OEMs, universities, training institutes, ship owners, ship managers, etc. She has trained over 300 marine engineers in the field of process control, automation, and electronics.

