

A 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.
- ✓ Impart concepts of Semiconductor Physics and electronics
- ✓ Impart knowledge on application of electronic devices on board ships
- ✓ Impart knowledge of instruments, process control and automation
- ✓ Have a clear understanding of electronic and digital automation.

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
- ✓ Boiler Combustion System Operation via PLC



IMO – EEAC. Rev: 1.0/October 2018



Program Duration: 6 days

Target Participants: Marine Engineers at Management and Operational Levels.



Our Trainers

Pawan Kapoor

A Class I Marine Engineer, Mr. Pawan Kapoor has a vast and varied working experience of over 27 years, which ranges from being a hands-on engineer, to a workshop manager, to a mentor and guide, to a Chief Executive. Pawan has lead teams of professionals and educationists for development of world-class training and educational establishments. He is the founder and head of the ISF Group and the various entities of the group.



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.



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.

