

## **QUALITY & SAFETY**

- Basic Domains of the Shipping Environment: Business & Regulatory
- The Business Domain: Charter Types Vs Quality/Safety Incentives
- The Regulatory Domain: International, Regional, National Regulations and Market-driven Standards
- Global Shipping Quality & Safety Performance: Energy, Safety, Pollution
- Safety Risk: Definition, Metrics, Criteria of Risk Acceptance (Risk Matrix & FN-Diagrams)
- Main Safety Risk Analysis Methodologies: Definitions & Examples of FTA, ETA, Bow-Tie Diagrams, FMEA, RCA (incl. Fishbone Diagram), HAZOP
- System Reliability: Definition, Failure Rates, Examples of Reliability for Series, Parallel (active & stand-by) Systems
- The Maritime System & the Human Element: Influence of Human Factor & Human Error.
- Human Factors Analysis and Classification System (HFACS) Taxonomy
- Human Reliability Analysis (HRA): Definition, Methodologies (i.e. Task Analysis & Examples), Human Error Probabilities (HEP & THERP)
- Formal Safety Assessment: Definition, Structure, Risk Control Options (RCO), Criteria of RCO Acceptance (GCAF, NCAF, CATS) & Examples
- System Maintenance Methodologies for Quality & Safety:
  - Reactive (Run-to-Failure or Corrective)
  - Proactive: Preventive or Time-Based Maintenance, Predictive or Condition-Based Maintenance, Reliability-Centred Maintenance (RCM)