FOUNDATION DEGREE IN MARINE ELECTRICAL ENGINEERING

OVERVIEW

This programme is a three year sandwich course that has been designed to enable marine cadets to achieve the academic standard necessary for the qualification of Foundation Degree in Marine Electrical Engineering and the STCW approved certificate as Electro-technical Officer (Operational).

More about this programme

The main deliverable objective of this award is to provide the academic or underpinning knowledge required by practising Electro-Technical Officers within today’s maritime industries. The programme strategy mirrors the established and accepted practice of integrating the practical and theoretical elements to provide a programme that corresponds with existing engineering training programmes.

The initial knowledge and skills delivered within level 4 will enable the range of knowledge anticipated at entry to be developed to allow application of skills on-board ship. This knowledge will be developed within the level 5 modules delivered in the final two semesters. The college based programmes are fully integrated with industrial or sea based training that meet the industry’s requirements for a structured and phased training scheme. During the sea phases students will undertake work based learning that is supported during the college based phases, as well as completing a sea phase record book of practical training undertaken on-board.

Modular structure

Engineering Mathematics; Marine Operations; Electronic Principles and Control; Engineering Science; Work Based Learning and Operational Management; Electrical Principles and Power; Electrical Plant Operation; Electrical and Electronic Principles; Radio Communication; Marine Control Systems; Marine Navigation Systems; Engineering Project

ENTRY REQUIREMENTS

A UCAS tariff of 56 is preferred, including 12 UCAS points from a Maths and/or Science subject;

plus GCSE (or equivalent as approved by the College) Grade ‘C’ (grade 5) or above in all the following subjects:

- Mathematics
- Science
- English language

www.stc.ac.uk

0191 427 3500 info@stc.ac.uk
Required to secure sponsorship from a shipping company who will provide the industrial placements on-board ship.

**ASSESSMENT**

**Mathematics for Marine Engineers STE 151**

Algebraic methods: polynomial division, partial fractions, completing the square, exponentials and logarithms, power series. Trigonometric methods: sinusoidal waveforms, applications, trigonometric identities. Calculus methods: differentiation and integration of standard functions, higher differentiation and integration, applications.

Assessment: 40% Formal examination / 60% classroom assessment

**Applications of power electronics STE 162**


Assessment: 50% Formal Examination / 50% Coursework

**Electrical and Electronic Principles and Systems STE 163**


Assessment: 60% Formal examination / 40% coursework

**Engineering Science STE 164**


Assessment: 50% Formal examination / 50% Coursework

**Work Based Investigation STE 155**

Plan, undertake, document, prepare technical reports, prepare and deliver oral presentation for an investigation of one's own choosing.
Assessment: 80% Coursework / 20% Presentation

**Marine Management for ETOs STE 158**

Professional codes, duty owed to the employer, colleagues, workforce, customer and general public, legal constraints and liabilities, responsibility to avoid pollution, waste of material and financial assets, danger to the environment. Health and safety: legal obligations. Management: The management of personnel, effective teambuilding, leadership and motivation for both individuals and teams, process of decision making. Legal requirements relating to Merchant Shipping Acts The functions of the Maritime and Coastguard Agency (MCA), classification societies, P&I clubs and the Salvage Association. Review of relevant International Maritime Law.

Assessment: 100% Coursework

**Health and Safety on board STE 159**

Select and apply safe working procedures to marine operations. Apply current health and safety legislation. Analyse systems for the assessment of risk. Apply risk management to life, property and activities.

Assessment: 100% Coursework

**Electronic Control Principles STE 160**


Assessment: 70% Lab report / 30% Coursework

**Electrical and Electronic Principles STE 253**


Assessment: 50% Formal examination / 50% Coursework

**Operation and maintenance of Electrical Plant STE 264**

Assessment: 100% Coursework

**Marine Navigation System fault diagnosis STE 265**

The areas of study shown below are applied to the following range of electronic navigation equipment: Radar and ARPA, Loran C, GPS Navigator and AIS, Gyro Compass, Echo Sounder, Water Speed Log, Autopilot. Operational Performance, Operational Data, Analysis of System Malfunction, Safety, safety procedures, Fault Diagnosis, Repair, Report.

Assessment: 100% coursework

**Radio Communications STE 266**


Assessment: 100% Coursework

**Business Management for ETOs STE 257**

The role of effective logistics in optimising marine commercial operations, Finance, Managerial and executive roles, Information and data processing systems, decision theory, Principles of project management relating to shipping, The effective management of personnel and other resources on-board. Management structures within marine and associated shore based industries. Economics relating to marine insurance including Classification and P&I.

Assessment: 100% Coursework

**Marine Navigation systems STE 268**


Assessment: 100% Coursework

**Engineering project/design STE 259**

Select a project and agree specifications and procedures. Implement the project within agreed procedures and to specification. Evaluate the project. Present project outcome.
Assessment: 80% Project / 20% Oral Presentation

Marine Control, Computer Systems and Electronic Control Applications STE 267


Assessment: 50% Formal examination / 50% Coursework

Assessment is through both formal examination and coursework.

PROFESSIONAL OPPORTUNITIES

The awarding body is University of Sunderland.

Successful completion of this programme gives entry onto B.Eng (Hons) programme at the University of Sunderland.

DATES & FEES

Contact us for current course dates and fees.