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

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/SouthTyneCollege /South Tyneside College
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Part of TyneCoast College
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 an 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.

**FURTHER INFORMATION**

The South Shields Marine School team in Marine Degrees and Engineering Certification are busy making preparations for the start of your programme in September/October 2020.

Covid-19 has challenged the delivery of professional programmes, but here at South Shields Marine School we have developed our professional standards for academic delivery with an effective approach to your programme of study which includes safe face-to-face teaching. This involves careful timetabling to dedicate each group (bubble) to a single classroom to prevent excessive movement and contact with others. Hand sanitiser and face coverings (masks) will be provided. Start times, coffee breaks, lunch and end times will be staggered as far as possible. Classroom windows will be open to increase fresh air flow.

Should there be a re-introduction of restrictions by the Government then we are also prepared to continue to deliver your programmes remotely.

The Curriculum Leaders remain active and will be meeting you during the first week to say hello, along with all of the lecturing team who will guide your learning and help with your assessments.
In the coming months before commencing your studies please contact the marine administration office if we can offer any further guidance before joining us:

Marine admin office details contact email / telephone number:

Sam Morgan or Lucy Howlett for engineer / eto cadet enquiries:

e: Samantha.Morgan@stc.ac.uk

t: 0191 427 3930

e: lucy.howlett@stc.ac.uk

t: 0191 427 3695

Judy Burns for OOW or Engineering EK / Management level enquiries:

e: MMENG@stc.ac.uk

t: 0191 427 3909

**DATES & FEES**

Contact us for current course dates and fees.