University of Plymouth

Faculty of Science and Engineering
   School of Engineering

Programme Specification

FdSc Navigation and Maritime Science - 4494

September 2017
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Between Stage 2 and the final year

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1. **BSc (Hon)/FdSc Navigation and Maritime Science**

   **Final award title**  BSc (Hon) Navigation and Maritime Science  
   **Level 4 Intermediate award title(s)**  Certificate of Higher Education  
   **Level 5 Intermediate award title(s)**  Diploma of Higher Education  
   **UCAS code**  J616  
   **JACS code**  J611, J612, J613, J614  
   **Final award title**  FdSc Navigation and Maritime Science  
   **Level 4 Intermediate award title**  Certificate of Higher Education  
   **UCAS code**  J617  
   **JACS code**  J611, J612, J613, J614

2. **Awarding Institution**

   **Awarding Institution**  University of Plymouth  
   **Teaching institution**  University of Plymouth

3. **Accrediting bodies**

   Maritime and Coastguard Agency (No set period but subject to inspection and audit at short notice)  
   Merchant Navy Training Board (Annual statement of compliance with regulation)

4. **Distinctive Features of the Programme and the Student Experience**

   The global environment which the Marine Studies scheme seeks to support is driven by oil-based economies, the need to transport large volumes of raw material and goods by sea and a rapid growth in the use of the marine environment as a leisure resource.

   This requires the development of academic knowledge and skills required to study the complex interaction of the marine environment, the human element and technology. Such student development is enabled by the combination of academic and professional expertise that the staff team provide. The professional expertise has often been developed in former careers including ship command, as deck and engineer officers in both the Merchant Navy and Royal Navy, in senior company management and hydrographic survey.

   The programme will be accredited by the Maritime and Coastguard Agency (MCA) and the Merchant Navy Training Board to provide the underpinning knowledge for the OOW (Reg II/1) Unlimited and Chief Mate (Reg II/2) Unlimited certificates of competency. Once the mandatory ancillary courses are completed and additional MCA Oral examination is passed then the student can also obtain the relevant certificate of competency to serve as a Deck Officer on merchant ships.

   The programme also provides the underpinning knowledge for the OOW (Yacht) (Reg II/1) and Master (Yacht) (Reg II/2) Unlimited certificates of competency. Once the mandatory ancillary courses are completed and additional MCA Oral examination is passed then the
student can also obtain the relevant certificate of competency to serve as a Yacht Deck Officer on commercial yachts.

The programme will also enable students who do not achieve the external accreditation requirements to graduate with an honours degree. This programme will also be used for direct entry Stage 2 and 3 students, particularly those from Colleges with articulation agreements, who do not require or are not eligible for external accreditation.

**Experiential Learning**

It is critical for the development of students on this course to contextualise the taught elements. As such students have access to the following facilities:

1. University boat “TTH” – students undertake a variety of exercises in Plymouth Sound, and once suitably qualified can take the boat without a member of staff being present (following strict Safe Operating Procedures), including cross-channel passages.

2. The students have access to a world class marine simulator. The University being the only Maritime Institution in the world to allow students open access to the simulator without the need for a tutor.

3. Utilising the above resources there are two, 20 credit, Field and Professional Skills modules (one in stage 1 the other in stage 2) that depend on these facilities, plus the input of a local sailing school. There is also an experiential field work element in stage 1 modules (NMS101, 102, 103 of 20% module weighting each) equivalent to a further 12 credits of study. Giving a total equivalent 52 credits of learning across stage 1 and 2 that are field based.

4. An (optional) industrial placement module (BPIE337) is available for BSc (Hons) students in stage 3, who are not sponsored for sea time as part of the accredited programme, and who have undertaken the placement introduction modules in stages 1 and 2 (students who are sponsored and undertaking seatime, do not need to undertake the stage 1 and 2 introductory modules, but will take the BPIE337 placement module). On completion students will be awarded a Certificate of professional training.

**Employer Involvement**

The development of a transfer to a FdSc award after stage 2 of the BSc(Hons) programme, is in direct response to the needs of shipping companies in the UK. It is anticipated that all students accessing the course will be able to gain access to sponsorship opportunities. The University already works closely with many companies – the design of the BSc(Hons) Navigation and Maritime Science degree reflects these needs. The transfer deadline is the last day of the second semester.

**Accessibility**

It is the desire of the Navigation team within the University of Plymouth, to ensure there is an access route to the maritime industry which provides a clear escalator of skills, with a variety of entry and exit points. The programme will allow wider participation and access to University level facilities as a fully integrated programme with a variety of exit points which represent real value to the higher fee paying student, with a clear route to employability, either after stage 3 or 4.
Flexibility
The course is designed to ensure maximum flexibility within the context of the professional accreditation. With students having the possibility of gaining sponsorship, and those not gaining sponsorship having the opportunity to break their study with the award of an industry recognised qualification.

Knowledge, Understanding and Skill
The aims of the course are directly linked to employment opportunities in the maritime industry. This career oriented approach requires a high level of specific knowledge, understanding and skill development within the programme. This is supplemented by additional training to which the BSc(Hons) Navigation and Maritime Science links.

Professionally Informed Teaching
The core members of staff on the course all have professional backgrounds in the maritime industry. Either as seafarers, brokers, ship managers or surveyors. The depth and range of knowledge has directly informed the structure of the program and its content. The staff maintain professional links to the industry and consider that the new course structure is responsive to the needs of industry and the regulatory authorities.

5. Relevant QAA Subject Benchmark Group(s)
The programmes within the BSc(Hons) Navigation and Maritime Science best relate to the ES3 subject benchmark statements. The characteristics of the programmes bear strong similarities to the common features of the ES3 areas:

• Focus on the understanding of Earth systems in order to learn from the past, understand the present and influence the future.
• Emphasis on field-based investigation.
• Multi-disciplinarity and inter-disciplinarity of approach.
• Range of spatial and temporal scales that they cover.
• Development of graduates capable of using their powers of observation, analysis and imagination to make decisions in the light of uncertainty.

The prominence given to fieldwork within the benchmark statements is enhanced within this programme by the use of a ship simulator and afloat facilities to provide both an experiential and virtual fieldwork experience.

The BSc(Hons) Navigation and Maritime Science programme considers the sustainability element of the benchmark statement "examination of the exploration for, and exploitation of, physical and biological resources in the context of sustainability" they do not however focus on the physical and biological elements. As the programme intends to have a named exit qualification via transfer to a Foundation Degree it is important to recognise that level 4 and 5 outcomes have also been informed by the Foundation Degree Qualification Benchmark. QAA has produced a qualification benchmark for Foundation Degrees, which is not specific to any particular discipline but sets out a generic framework for Foundation Degrees that serves as a reference point for use in programme design, delivery and review. However it is of concern to the design team that the new programme should fit the ethos of working within a University context. The thorough consideration of the
academic requirements and progression of those following this particular programme are to be fully considered. For the sake of clarity the FDQB benchmarks have been included in the following mapping, and have been used to inform the outcomes, and ensure the FdSc exit qualification sits comfortably with the BSc(Hons) qualification which uses the ES3 benchmarks.

The tables below are to be used for cross referencing purposes.

**ES3 Threshold Benchmark Statements and Mapping Document**

<table>
<thead>
<tr>
<th>Code</th>
<th>Threshold benchmark Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Knowledge based on the directly taught programme.</td>
</tr>
<tr>
<td>B</td>
<td>Basic ability to integrate lines of evidence from a range of sources to support findings and hypotheses</td>
</tr>
<tr>
<td>C</td>
<td>Basic understanding of subject-specific theories, paradigms, concepts and principles.</td>
</tr>
<tr>
<td>D</td>
<td>Basic ability to consider issues from a range of multi-disciplinary and inter-disciplinary perspectives.</td>
</tr>
<tr>
<td>E</td>
<td>Basic ability analyse, synthesise and summarise information.</td>
</tr>
<tr>
<td>F</td>
<td>Basic ability to define and solve routine problems.</td>
</tr>
<tr>
<td>G</td>
<td>Ability to describe the moral and ethical dimensions of issues and investigations and the need for professional codes of conduct.</td>
</tr>
<tr>
<td>H</td>
<td>Basic ability to describe and record materials in the field and laboratory.</td>
</tr>
<tr>
<td>I</td>
<td>Basic ability to interpret practical results.</td>
</tr>
<tr>
<td>J</td>
<td>Basic ability to use appropriate laboratory and field equipment safely.</td>
</tr>
<tr>
<td>K</td>
<td>Ability to use spatial technologies in addressing problems.</td>
</tr>
<tr>
<td>L</td>
<td>Ability to plan, conduct and present an independent project with reliance on guidance.</td>
</tr>
<tr>
<td>M</td>
<td>Ability to apply a range of methods to solve problems.</td>
</tr>
<tr>
<td>N</td>
<td>Basic ability to present results of investigations in a number of formats.</td>
</tr>
<tr>
<td>O</td>
<td>Basic ability to relate investigations to prior work and reference appropriately.</td>
</tr>
<tr>
<td>P</td>
<td>Ability to communicate to a variety of audiences in written, graphical and verbal forms.</td>
</tr>
<tr>
<td>Q</td>
<td>Ability to read and respond to written material.</td>
</tr>
<tr>
<td>R</td>
<td>Ability to collect and record data with guidance.</td>
</tr>
<tr>
<td>S</td>
<td>Ability to prepare, process and interpret data using appropriate techniques with guidance.</td>
</tr>
<tr>
<td>T</td>
<td>Basic ability to solve numerical problems using appropriate techniques.</td>
</tr>
<tr>
<td>U</td>
<td>Ability to use the internet for communication and information retrieval.</td>
</tr>
<tr>
<td>V</td>
<td>Some ability to contribute to team work.</td>
</tr>
<tr>
<td>W</td>
<td>Ability to recognise and respect the views of others.</td>
</tr>
</tbody>
</table>
X | Basic ability to develop the skills necessary for self managed and lifelong learning (e.g. independent study, time management, organisational skills)
---|---
Y | Basic ability to identify and work towards targets for personal, career, and academic development.
Z | Ability to be adaptable and flexible.

**QAA Foundation Degree Threshold Benchmark Statements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Threshold Benchmark Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>knowledge and critical understanding of the well-established principles in their field of study and the way in which those principles have developed;</td>
</tr>
<tr>
<td>B</td>
<td>successful application in the workplace of the range of knowledge and skills learnt throughout the programme</td>
</tr>
<tr>
<td>C</td>
<td>ability to apply underlying concepts and principles outside the context in which they were first studied, and the application of those principles in a work context</td>
</tr>
<tr>
<td>D</td>
<td>knowledge of the main methods of enquiry in their subject(s), and ability to evaluate critically the appropriateness of different approaches to solving problems in their field of study and apply these in a work context</td>
</tr>
<tr>
<td>E</td>
<td>an understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge in their field of study and in a work context.</td>
</tr>
<tr>
<td>F</td>
<td>use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis in their field of study and in a work context;</td>
</tr>
<tr>
<td>G</td>
<td>effectively communicate information, arguments, and analysis, in a variety of forms, to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively in their field of study and in a work context.</td>
</tr>
<tr>
<td>H</td>
<td>qualities and transferable skills necessary for employment and progression to other qualifications requiring the exercise of personal responsibility and decision-making;</td>
</tr>
</tbody>
</table>
I: the ability to utilise opportunities for lifelong learning.

J: undertake further training, develop existing skills, and acquire new competences that will enable them to assume responsibility within organisations;

6. Programme Structure

**Brief Description of Programme**
The BSc(Hons) Navigation and Maritime Science and the FdSc Navigation and Maritime Science are to be delivered by University of Plymouth, via the School of Marine Science and Engineering, under the Faculty of Science and Technology.

Subsequent to the University approval it will be put forward for accreditation by the Maritime and Coastguard Agency via a Merchant Navy Training Board approval – it should be noted however that the Merchant Navy Training Board have been advised of the proposals and the feedback has been very positive. A two or three stage FdSc programme or three or four stage BSc programme, for our sponsored students it will combine periods of academic study within a University environment, with periods of field work in the form of working on board sea going vessels, and for non-sponsored students there will be an enhanced fieldwork provision for the same module. This therefore constitutes two modes of delivery,

Students starting on the BSc route will have the opportunity to transfer prior to completion of stage 2 to the FdSc Navigation and Maritime Science. Students completing the FdSc route will be able to transition straight to stage four of the BSc programme. For the avoidance of doubt stages 1 and 2 of both programmes are exactly the same.

The student will also have the opportunity to complete further ancillary courses alongside the programme and achieve a Merchant Navy Officer of the Watch (Unlimited) Certificate of Competence, or an Officer of the Watch (Yachts less than 3000gt).

**Pathways**
Within the two programs are two pathways to provide the student with flexibility, and ensure the program is also suitable for delivery to International students.

These are defined as follows:

**Pathway 1 – FdSc or BSc(Hons) MNTB Accredited Route for OOW**
(Unlimited)
MCA accredited route for OOW (Yacht less than 3000gt)

Accredited by the Merchant Navy Training Board and the Maritime Coastguard Agency. The student can join either the FdSc or the BSc and complete the requirement outlined in Figure 1. This pathway is for those wishing to go to sea in a professional watch keeping capacity. The FdSc is a 3 stage program and the
BSc(Hons) is a 4 stage program. After stage 3 the student may graduate with a FdSc or continue into stage 4 of the BSc (Hons). In order to complete this pathway students must complete the placement year and all work associated with the Certificate of Industrial Placement.

**Pathway 2 – FdSc or BSc (Hons) non-accredited pathway.**
This is not accredited by the Merchant Navy Training Board. This is aimed at the student who does not want to go to sea in professional capacity but may want to move into non watch keeping roles or the shore side administration and management of the industry.

The modules taken are the same as pathway one. The Placement year may also be taken if desired, but can be in any sector of the maritime industry. It is however not compulsory.

**Modular Profile of Pathways**
Note: Those students following Pathway 1 MUST complete all zero rated modules to achieve the award and complete their portfolio for their Certificate of Competency, with the exception of student completing their OOW (Yachts less than 3000gt) who do not have to complete the Work Placement Module (BPIE307).

**Pathway 1 – FdSc or BSc (Hons) MNTB Accredited Route.**

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMS101 Coastal Navigation</td>
<td>20</td>
</tr>
<tr>
<td>NMS102 Marine Operations</td>
<td>20</td>
</tr>
<tr>
<td>NMS103 Voyage Planning and Meteorology</td>
<td>20</td>
</tr>
<tr>
<td>NMS108 Field and Professional Skills</td>
<td>20</td>
</tr>
<tr>
<td>NMS105 Marine Techniques</td>
<td>20</td>
</tr>
<tr>
<td>NMS106 Management and Leadership 1</td>
<td>20</td>
</tr>
<tr>
<td>NMS107 Accreditation 1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Credits at Level 4**
120

**Exit Point – Certificate in Higher Education**

<table>
<thead>
<tr>
<th>Stage 2</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMS201 Voyage Planning and Collision Avoidance</td>
<td>20</td>
</tr>
<tr>
<td>NMS202 Marine operations and Construction</td>
<td>20</td>
</tr>
<tr>
<td>NMS204 Management and Leadership 2</td>
<td>20</td>
</tr>
<tr>
<td>NMS205 Field and Professional Skills 2</td>
<td>20</td>
</tr>
<tr>
<td>NMS207 Ocean Navigation</td>
<td>20</td>
</tr>
<tr>
<td>NMS203 Law</td>
<td>20</td>
</tr>
<tr>
<td>NMS208 Accreditation 2</td>
<td>0</td>
</tr>
</tbody>
</table>

**Credits at Level 5**
120

**Exit Point – FdSc Navigation and Maritime Science (date of last transfer is before the Easter Break)**
Students may exit at this point with the FdSc or continue on to Stage 4 of the program for a full BSc (Hons) qualification.

**Stage 3**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPIE337</td>
<td>Navigation and Maritime Science related Placement</td>
<td>0</td>
</tr>
</tbody>
</table>

The final stage 4 of the programme contains no MCA thresholds for certification – these are all contained in stage 1-3.

**Stage 4**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMS302</td>
<td>Operational Procedures and Processes</td>
<td>20</td>
</tr>
<tr>
<td>NMS303</td>
<td>Problem Solving in the Marine Environment</td>
<td>20</td>
</tr>
<tr>
<td>NMS305</td>
<td>Navigation Safety and Management</td>
<td>20</td>
</tr>
<tr>
<td>NMS304</td>
<td>Marine Honours Project</td>
<td>40</td>
</tr>
<tr>
<td>NMS306</td>
<td>Ship and Yacht Management</td>
<td>20</td>
</tr>
</tbody>
</table>

**Credits at Level 6**

**Exit Point – BSc(Hons) Navigation and Maritime Science**

Each module must be passed at 50% or above for accreditation purposes, and there are higher thresholds (either 60% or 65%) within certain modules to maintain the accreditation requirements.

**Pathway 2 – FdSc or BSc (Hons) non accredited pathway.**

**Stage 1 Level 4**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMS101</td>
<td>Coastal Navigation</td>
<td>20</td>
</tr>
<tr>
<td>NMS102</td>
<td>Marine Operations</td>
<td>20</td>
</tr>
<tr>
<td>NMS103</td>
<td>Voyage Planning and Meteorology</td>
<td>20</td>
</tr>
<tr>
<td>NMS108</td>
<td>Field and Professional Skills</td>
<td>20</td>
</tr>
<tr>
<td>NMS105</td>
<td>Marine Techniques</td>
<td>20</td>
</tr>
<tr>
<td>NMS106</td>
<td>Management and Leadership 1</td>
<td>20</td>
</tr>
<tr>
<td>BPIE116</td>
<td>Stage 1 Navigation Placement Preparation</td>
<td>0</td>
</tr>
</tbody>
</table>

**Credits at Level 4**

**Exit Point – Certificate in Higher Education**

**Stage 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMS201</td>
<td>Voyage Planning and Collision Avoidance</td>
<td>20</td>
</tr>
<tr>
<td>NMS202</td>
<td>Marine operations and Construction</td>
<td>20</td>
</tr>
<tr>
<td>NMS204</td>
<td>Management and Leadership 2</td>
<td>20</td>
</tr>
<tr>
<td>NMS205</td>
<td>Field and Professional Skills 2</td>
<td>20</td>
</tr>
<tr>
<td>NMS207</td>
<td>Ocean Navigation</td>
<td>20</td>
</tr>
<tr>
<td>NMS203</td>
<td>Law</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Optional module:</td>
<td></td>
</tr>
<tr>
<td>NMS206</td>
<td>International Relations</td>
<td>20</td>
</tr>
<tr>
<td>BPIE216</td>
<td>Stage 2 Navigation Placement Preparation</td>
<td>0</td>
</tr>
</tbody>
</table>
Credits at Level 5 120
Exit Point – DipHE Navigation and Maritime Science
or transfer to FdSc Navigation and Maritime Science Exit Point – FdSc Navigation and Maritime Science (date of last transfer is before the Easter Break)

Stage 3
BPIE337 Navigation and Maritime Science related placement 0

Stage 4
NMS302 Operational Procedures and Processes 20
NMS303 Problem Solving in the Marine Environment 20
NMS305 Navigation Safety and Management 20
NMS304 Marine Honours Project 40
NMS306 Ship and Yacht Management 20
Optional module:
NMS301 Critical Scenario Leadership 20

Credits at Level 6 120
Exit Point – BSc(Hons) Navigation and Maritime Science

Introduction
The course will lead to either a FdSc or BSc(Hons) Navigation and Maritime Science alongside this is the opportunity for accreditation by the MCA as part of the route to a Certificate of Competency as either an Officer of the Watch (Unlimited), or Officer of the Watch (Yachts less than 3000gt)

Part 1 Academic Programme

<table>
<thead>
<tr>
<th>What the University will provide</th>
<th>What extra you need to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>All modules in year 1, 2 and 3 will contain the knowledge required for accreditation the MCA - this is known as “Underpinning Knowledge” or UPK. Stage 4 of the BSc course does not contain any</td>
<td>In addition to passing modules at 40% to pass the University course you need to achieve a minimum of 50% in all modules in stages 1,2 Within certain modules there are elements that you need to pass at either 60% or 65% to achieve the accreditation. In stage 4 you need to achieve the University pass rate only.</td>
</tr>
</tbody>
</table>

Part 2 Short Courses
You will also need additional short courses to become eligible for your MCA Certificate. These are listed below. They are all required for your MCA Certificate and are typically paid for by your sponsoring company.

Prior to going to sea:
Personal survival techniques
Elementary first aid
Personal safety and social responsibilities
Fire prevention and firefighting
Proficiency in Security Awareness

Subsequent courses after initial sea time (6 or 12 month at sea required):
Important note: The optional modules NMS301 and NMS206 are options provided for international students with agreement from national authorities. They may only be taken by students with prior approval from the University.

The primary difference between the above pathways are the MNTB/MCA requirements, which include higher pass thresholds a clear requirement for ship board learning via the Field and Professional Skills/ Accreditation modules and the Placement module.

The following table highlights the additional requirements for Pathway 1 - leading to Certification. This is an increased workload for the student and also incurs extra expense on short courses – listed below.

| Proficiency in survival craft and rescue boats other than fast rescue boats |
| Human Element Leadership and Management (Helm (O)) |
| Advanced firefighting Medical first aid |
| GMDSS General Operator Certificate |
| Navigation and radar simulator training at |
| Navigation aids, equipment and simulator training (NAEST(O)) |
| Efficient Deck Hand |
| Signals certificate |
| Orals preparation |

**Part 3 Sea-time Placement Year**

In order to achieve your MCA Certificate of Competency you will need a minimum of 12 months good quality sea time and, for those wanting an Unlimited Certificate of Competency (MNTB accredited); this includes work based assessments. During this time you also need to complete your Training Record Book, this contains all the tasks you are required to complete prior to gaining your certificate, these task will be signed off by an officer on board the vessel on which you are completing your sea time. The Training Record Book is not part of your assessment, but is required for your MCA Certification.

| What the University will provide | What extra you or your sponsor need to do |
| Proficiency in survival craft and rescue boats other than fast rescue boats | If you are sponsored or in receipt of a bursary, your provider may provide you with sea-time opportunities. If you are looking for your limited certificate (yachts) the onus will be on you to identify appropriate sea-time opportunities. |
| Human Element Leadership and Management (Helm (O)) | |
| Advanced firefighting Medical first aid | |
| GMDSS General Operator Certificate | |
| Navigation and radar simulator training at | |
| Navigation aids, equipment and simulator training (NAEST(O)) | |
| Efficient Deck Hand | |
| Signals certificate | |
| Orals preparation | |

**Part 4 How do I get my certificate of Competency**

Once you have completed parts 1, 2 and 3 to the required standard and can evidence this in a portfolio of work, you can apply to the Maritime and Coastguard agency for your Notice of Eligibility. Once received you can book an Oral Exam with an MCA examiner. If you pass the oral test you will receive your Certificate of Competency.
**Route to Certification – Pathway 1.**
The course will lead to either a FdSc or BSc(Hons) Navigation and Maritime Science alongside this is the opportunity for accreditation by the MCA as part of the route to a Certificate of Competency as either an Officer of the Watch (Unlimited), or Officer of the Watch (Yachts less than 3000gt)

**Pathway 1 – Leading to Certification**

**Navigation & Maritime Science – Accredited Pathway**

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>Taught modules</td>
<td>Semester 2</td>
<td>Taught modules</td>
</tr>
<tr>
<td>Semester 2</td>
<td>Taught modules</td>
<td>Sea time opportunity</td>
<td>Sea time opportunity</td>
</tr>
</tbody>
</table>

**Pathway 1 – Leading to Certification**

Students on Pathway 1 are expected to be sponsored for their sea-time. University of Plymouth does not provide sea time. These students looking to complete their OOW (Yachts less than 3000T) will also have to find their own sea time opportunity.

In addition, those students intending to achieve an MCA Certificate of Competency must complete the following additional ancillary courses:

Prior to going to sea:
- Personal survival techniques: STCW A-VI/1-1, 1 day
- Elementary first aid: STCW A-VI/1-3, 1 day
- Personal safety and social responsibilities: STCW A-VI/1-4, 0.5 days
- Fire prevention and firefighting: STCW A-VI/1-2, 2 days
- Proficiency in Security Awareness: STCW A-VI/6, 0.5 days

Subsequent courses after initial sea time (6 or 12 month at sea required):
- Proficiency in survival craft and rescue boats other than fast rescue boats: STCW A-VI/2-1 5 days
- Human Element Leadership and Management (Helm O)
STCW A-111/1 3 days
STCW A-VI/3 4 days
STCW A-VI/4-1 3 days
10 days
A-II/1 (part) 8 days
5 days

Students following pathway 1 will also have to complete a Training Record Book (TRB), and complete the portfolio of work required for the field work modules, and placement year module. In order to complete sea time students will be expected to have sponsorship. Those without sponsorship can complete Pathway 1 but are likely to be following the OOW (Yachts less than 3000GT), where sea time must be on a yacht with a load line length of =>15 metres.

Route to Certification – Pathway 2.
The course will lead to either a FdSc or BSc(Hons) Navigation and Maritime Science alongside this is the opportunity for an optional industrial placement year at stage 3 (BPIE337). Students choosing the placement year will need to complete the BPIE116 and BPIE216 modules in stages 1 and 2.

Pathways 2 – Not leading to Certification

Navigation and Maritime Science – Non Accredited Pathway

Stage 1
Semester 1
Taught modules

Semester 2
Taught modules

CertHE

Stage 2
Taught modules

Tdught modules

FdSc or DipHE

Stage 3
BPIE337 - (Optional) Industrial Placement

Stage 4
Taught modules

Taught modules

BSc(Hons)
Funding implications of following the route toward certification (with sea time)
Students opting to take the placement module and not suspend studies will be able to apply for funding over their three or four year program.

Integrated Programme
At either the FdSc or the BSc(Hons) exit point the student could also benefit from:
• Deck officer certificates: full exemption for all written examinations up to and including Chief Mate/Master level.

Providing that the following special provisions relating to Professional Body requirements regulations have been met:
• The MCA/MNTB require the successful completion of all modules on pathway 1 (with a percentage mark of >50%).
• Successful completion of required sea time (12 months)
• Completion of the MNTB Training Record book
• Successful completion of all required ancillary courses.
• In addition there are some elements of assessment to be passed at 65% or 60% to allow progression to professional examination for STCW 95 II/2 Certification of Competency. All elements with this higher threshold are pass/fail assessments within the appropriate module. They do not however constitute a barrier to academic progression.
• MCA Oral Examination

It will be noted that there are ancillary courses to be taken alongside the academic modules within the programme. These are added to the students portfolio of skills, which then enable the student to apply to the MCA for a notice of eligibility subsequent to appropriate performance in the FdSc Navigation and Maritime Science or BSc(Hons) Navigation and Maritime Science, after appropriate sea time has been accrued. This allows the student to apply to the MCA for an oral assessment, successful completion of which will lead to award of an MCA Certificate of Competency. The ancillary courses are as listed below:

Certificated learning available alongside the core curriculum:
Personal survival techniques STCW A-VI/1-1, 1 day
Elementary first aid STCW A-VI/1-3, 1 day
Personal safety and social responsibilities STCW A-VI/1-4, 0.5 days
Fire prevention and firefighting STCW A-VI/1-2, 2 days
Proficiency in Security Awareness STCW A-VI/6, 0.5 days
Proficiency in survival craft and rescue boats other than fast rescue boats STCW A-VI/2-1 5 days
Human Element Leadership and Management (Helm O)
Advanced firefighting STCW A-111/1 3 days
Medical first aid STCW A-VI/3 4 days
GMDSS General Operator Certificate STCW A-VI/4-1 3 days
Navigation aids, equipment and simulator training at A-II/1 (part) 8 days
Efficient Deck Hand 5 days
Signals certificate
Sea-time clarification.
University of Plymouth cannot provide the sea time for pathway 1. This is either provided by a sponsor, or in the case of a student wishing to pursue this pathway for OOW (Yachts less than 3000t) found by the students own inquiry and effort. If a student has the opportunity for sea time, the support for same will be provided for via the sea time tutors, who are there for contact and support throughout any sea time phase. The support system can be found in the approval document.

7. Programme Aims

Aims at Certificate Level
1. Develop the academic knowledge and skills required to study the complex interaction of the marine environment, the human element and technology.
2. Encourage students to be independent and adaptable learners.
3. Provide students with a range of problem-solving skills.
4. Enable students to enter the international maritime industry as a qualified deck officer and/or participate effectively in the management of shore-based marine industries.

Aims at Foundation Degree Level
5. Provide a scientifically-based and intellectually stimulating programme of study incorporating theoretical, quantitative, practical and applied aspects of the marine and maritime environment.
6. Enable students to acquire transferable, technical, enterprise and professional skills appropriate to both personal and career development.
7. Develop a scientific approach to the investigation of problems suitable for a wide range of subject-specific and generic career pathways.

Aims at Honours Degree Level
8. Create an environment where analysis and evaluation of the key skills required in the maritime environment can occur.
9. Allow students to actively engage in research opportunities beyond that normally associated with Maritime Institutions.
10. Create a framework for a student to create a personal development and learning plan, with a defined exit trajectory that encourages lifelong learning.
11. Allow the student to appreciate, appraise and critique the maritime industry toward which the course is biased.
8. Programme Intended Learning Outcomes

Certificate Level

Knowledge and Understanding
On completion of this programme the students will be able to demonstrate a knowledge and understanding of:

• The scope of the complex interaction of the marine environment, the human element and technology.
• Basic navigation techniques.
• The underlying concepts and principles associated with their area of study, and an ability to evaluate and interpret these within the context of that area of study.

Cognitive and Intellectual Skills
On completion of this programme the students will be able to:

• Recognise the importance of planning before carrying out a task.
• Collect, analyse and evaluate information.
• Demonstrate an ability to present, evaluate, and interpret qualitative and quantitative data, to develop lines of argument and make sound judgements in accordance with basic theories and concepts in their subject area.

Key Transferable Skills
On completion of this programme the students will be able to:

• Make use of appropriate ICT, including standard business applications and the internet.
• Write short structured reports.
• Organise their own learning.
• Evaluate the appropriateness of different approaches to solving problems related to their area of study and/or work.
• Communicate the results of their study/work accurately and reliably, and with structured and coherent arguments.

Practical Skills
On completion of this programme the students will be able to:

• Conduct basic navigation tasks

Employment Related Skills and Other Professional Skills
The aims 1, 2 and 3 are career oriented, therefore many of the skills described above may be considered as employment related.

On completion of this programme the students will be able to:

• Recognise the need to establish a management framework for dealing with situations where problem-solving is a key requirement.

1 Whilst driven by the ES3 benchmarks for HE, these are also informed by the Foundation Degree Qualification Benchmark to ensure that any transfer at stage 2 is deemed to also meet the FDQB requirements. Note: QAA has worked closely with the sector to produce a qualification benchmark for Foundation Degrees, which is not specific to any particular discipline but sets out a generic framework for Foundation Degrees that serves as a reference point for use in programme design, delivery and review.
Foundation Degree Level

Knowledge and Understanding
On completion of this programme the students will be able to:
• Execute the requirements of the core technical and academic knowledge and skills for STCW deck officer certificates of competency.
• Draw on the taught information and concepts to prove their competency in the specific areas of underpinning knowledge required by the accrediting body.
• Demonstrate knowledge and understanding of calculations and methodologies required for marine position determination and prediction.
• Identify decision support methodologies appropriate to the marine environment, including passage planning, collision avoidance.
• Recognise and explain the principles and theories relevant to naval architecture, engineering and stability.
• Identify the planning, safety and commercial considerations relating to cargo and service ship operation.
• Demonstrate the development of an appreciation of a range of positioning instrumentation, and analysis of the derived data.

Cognitive and Intellectual Skills
On completion of this programme the students will be able to:
• Analyse their own capabilities set against the MNTB Occupational Standards and related documentation.
• Independently organise information and develop their own personal development plans.
• Critically evaluate marine navigation techniques and shipboard practice.
• Solve problems based on critical safety related scenarios.
• Apply appropriate navigational methodology to a variety of problems and scenarios.
• Understand the limits of their knowledge, and how this influences their analysis of a situation and influences decision making, both in the context of their academic work and in their contextual application at sea.

Key Transferable Skills
In addition to the marine specific skills, a typical student will have acquired the ability to:
• Make further extended use of appropriate ICT, the internet and specialist software.
• Effectively communicate information, arguments and analysis in a variety of forms, including oral.
• Appreciate the group dynamics encountered in teamwork situations.
• Recognise the benefits if undertaking further training and development, both in respect of learned and new skills.

Practical Skills
A typical student will be able to:
• Acquire and use weather information.
• Determine risk of collision and take appropriate action.
• Determine a vessel's position.
**Employment Related Skills and Other Professional Skills**

The aspiration of the programme is career oriented, therefore many of the skills described above may be considered as employment related.

The following skills are also developed:

- Perform a supporting role in the management of situations where problem solving is a key requirement.
- Appraise the factors affecting trim, stability and stress for a variety of vessel types.
- Appraise the factors affecting the loading, carriage and discharge of cargo.
- Undertake further training, develop existing skills and acquire new competencies that will enable them to assume significant responsibilities within organisations.
- Qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision making.

**Honours Degree Level ²**

**Knowledge / Understanding**

A typical graduate will be able to demonstrate a knowledge and understanding of:

- Problem-solving methodologies appropriate to the marine environment, including project management, team management.
- How to communicate information to the intended audience, including research output.
- Recognise the legal framework relating to the practice of vessel management and the carriage of goods and passengers by sea.

**Cognitive / Intellectual Skills (generic)**

A typical graduate will be able to:

- Determine appropriate methodologies for solving complex problems.
- Apply appropriate problem-solving techniques to complex marine situations.
- Appraise the effectiveness of methods employed.
- Analyse the legal concepts applicable to the shipping industry.

**Key / Transferable Skills (generic)**

In addition to the marine specific skills, a typical student will have acquired the ability to:

- Make use of appropriate ICT, including standard business applications, the Internet and specialist software.
- Communicate effectively in written, oral and visual formats.
- Optimise their performance across a range of activities, including self-directed learning, research and project management.
- Work effectively in a team, at any level.

**Practical Skills (subject specific)**

A typical student will be able to:

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² Programme learning outcomes at levels 4 and 5 have referenced ES3 benchmarks and FDQB to ensure a valid exit award, level 6 outcomes now only reference the ES3 benchmark
• Determine a vessel’s stability in both normal operations and extreme circumstances.
• Determine a vessel’s position and appraise the limitations of the method employed.

Employment-related Skills
The aspiration for this programme is to be career-oriented, therefore many of the skills described above may be considered as employment-related. The following skills are also developed:
• Take the lead in the management of situations where problem-solving is a key requirement.
• The ability to act appropriately within the legal frameworks relevant to the shipping industry

9. Admissions Criteria, including APCL, APEL and DAS arrangements
Acceptance by the University will be based upon the following table:
Students wishing only to participate in the FdSc elements of the programme must comply with the following entry requirements:

<table>
<thead>
<tr>
<th>FDSC Navigation and Maritime Science</th>
<th>Entry Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifications accepted</td>
<td>Level required</td>
</tr>
<tr>
<td>A-Level/AS Level/Vocational A-Level</td>
<td>48 points to include a grade E at a relevant science subject, excluding General Studies</td>
</tr>
<tr>
<td>GCSE or equivalent</td>
<td>GCSE in English and Mathematics (at grade C) or equivalent are required.</td>
</tr>
<tr>
<td>General Studies A-Level</td>
<td>Not accepted as part of a points offer.</td>
</tr>
<tr>
<td>AVCE Double Award: 12 unit</td>
<td>120 points including 40 points in a science-based subject. Additional units/A-Level subject may be required.</td>
</tr>
<tr>
<td>BTEC National Certificate/Diploma</td>
<td>BTEC National Diploma/QCF Extended Diploma PPP in a relevant subject</td>
</tr>
<tr>
<td>Access to Higher Education</td>
<td>Pass Science related Access Course. Must have GCSE English and Maths grade C/4 or above or equivalent</td>
</tr>
<tr>
<td>National Vocational Qualification (including Advanced Modern Apprenticeships)</td>
<td>An appropriate NVQ at Level 3 will be considered with other information that demonstrates your ability to successfully complete the programme you have selected.</td>
</tr>
<tr>
<td>Scottish Qualifications Authority</td>
<td>120 points including suitable science content.</td>
</tr>
<tr>
<td>Irish Leaving Certificate</td>
<td>Minimum DDDDD including a grade D in a science-based subject.</td>
</tr>
</tbody>
</table>
International Baccalaureate: 24 overall to include 4 at Higher Level Science

European Baccalaureate: Offers will be based on a minimum of 50% including suitable science content.

Greek National Apolytirion: Minimum average of 15 out of 20 to include a science, plus English language proficiency.

Apolytirion of Lykeio (pre 1999): Minimum average of 15 out of 20 to include a science, plus English language proficiency.

Progression from Extended Science: Students who pass the Extended Science year with > 50% are guaranteed progression to one of the Faculty’s BSc (Hons) programmes and detailed advice will be provided by the Admissions Tutor.

Students applying for the full BSc (Hons) Navigation and Maritime Science must comply with the following entry requirements.

<table>
<thead>
<tr>
<th>Qualifications accepted</th>
<th>Level required</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Level/AS Level/Vocational A-level</td>
<td>200-280 points with a minimum of two A levels. This will normally be expected to include at least a pass at grade C in a science subject (Physics, Chemistry, Biology, Maths, Geography, Geology, Environmental Science (Technology/Sports and Performance subjects considered) ). AS Levels may contribute to a points offer.</td>
</tr>
<tr>
<td>GCSE or equivalent</td>
<td>GCSE in English and Mathematics (at grade C) or equivalent are required.</td>
</tr>
<tr>
<td>General Studies A-Level</td>
<td>Will not normally be accepted as an entry qualification.</td>
</tr>
<tr>
<td>AVCE Double Award</td>
<td>200-280 with minimum of CC in a Science subject. Additional study would usually be required to achieve 280 points. 280 points = A<em>A</em>.</td>
</tr>
<tr>
<td>BTEC QCF Diploma and Extended Diploma</td>
<td>200-280 points QCF Extended Diploma. Subjects studied need to demonstrate a commitment to studying science. Additional study would normally be required to achieve 280 points with the QCF Diploma. D<em>D</em> = 280 points.</td>
</tr>
<tr>
<td>Access to Higher Education</td>
<td>Pass approved course in relevant subject (Science and Technology preferred but other appropriate courses considered) with 33 merits at level 3 to include 12 merits in a Science subject.</td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>National Vocational Qualification (including Advanced Modern Apprenticeships)</td>
<td>An appropriate NVQ at Level 3/AMA will be considered with other information that demonstrates ability to successfully complete the programme selected. A commitment to studying science needs to be demonstrated.</td>
</tr>
<tr>
<td>Scottish Qualifications Authority</td>
<td>200-280 points. At least one science subject (Physics, Chemistry, Biology, Maths, Geography, Geology, Environmental Science (Technology/Sports and Performance subjects considered)) passed at grade C.</td>
</tr>
<tr>
<td>Irish Leaving Certificate</td>
<td>BBBBC. At least one science subject (Physics, Chemistry, Biology, Maths, Geography, Geology, Environmental Science (Technology/Sports and Performance subjects considered) ) passed at grade C.</td>
</tr>
<tr>
<td>International Baccalaureate</td>
<td>Offers will be made based on total points acquisition within the range of 28 points to include 4 in Higher Level Science or Maths.</td>
</tr>
<tr>
<td>European Baccalaureate</td>
<td>72% point to include 7 in Science and Maths.</td>
</tr>
<tr>
<td>Greek National Apolytirion</td>
<td>Please enquire. Normally require achievement of 18/20 overall to include 18/20 in Maths/Science.</td>
</tr>
<tr>
<td>Progression from Extended Science</td>
<td>Students who pass the Extended Science year with &gt; 50% are guaranteed progression to one of the Faculty’s BSc (Hons) programmes and detailed advice will be provided by the Admissions Tutor.</td>
</tr>
</tbody>
</table>

**Key Skills**
We encourage the attainment of Key Skills at a high level to enhance performance on a higher education programme. Although key skills tariff points do not count towards the admissions tariff score, they will enhance the performance of the student on the BSc(Hons) programme.

**Accreditation of Prior Certificated Learning (APCL) and Assessment of Prior Experiential Learning (APEL)**
The University’s regulations for Accreditation of Prior Certificated Learning (APCL) and Assessment of Prior Experiential Learning (APEL) are set out in the ‘University Academic Regulations’. We may also consider admission on the basis of work or life experience.

We welcome evidence of prior learning and experience from applicants.
Due to the range and mixture of prior qualification and experience applications presenting such evidence will be considered on an individual basis by the Admissions Tutor in consultation with the Programme Team.

**English language requirements**
If you have not obtained or do not expect to obtain your entry qualifications in the English language, you are required to produce evidence of English language ability. This will normally be the equivalent of:

- GCSE Grade C or above in English language.
- IELTS average score of 6.0 or above with a score of at least 5.5 in the listening, reading, speaking and writing elements.
- Equivalencies are detailed in ‘Admissions Information and Procedures’ issued by the University Secretariat.

**Progression from HND to degree.**
Achievement of a HND to a good standard in one of the University’s Partner Colleges may permit progression to Stage 2 or 4 of this degree. Details are set out in the current University Prospectus.

**Science Foundation Degrees.**
Applications from students in receipt of a science foundation degree following approved articulations and agreements are welcome and permit entry into Stage 4.

**Support for students with disabilities.**
Students with disabilities are welcome in line with University of Plymouth accessibility policies. However for those students wishing to gain MCA certification it should be noted that a valid seafarers medical certificate (often referred to as an ENG1) is required. This is beyond the control of the University, and it is strongly advised that an ENG1 is obtained prior to application. It should however be noted that the inability to achieve a seafarers medical certificate does not preclude an applicant from joining the University and following Pathway 2.

**The role of sponsorship.**
There is no need for sponsorship within this programme, but it should be noted that the first three stages are designed to address the needs of industry and their education and training requirements.

Stage one of the programme has therefore been constructed to allow for sponsored students to meet the sea time requirements defined by the Maritime and Coastguard agency and for the non-sponsored students to engage with experiential learning during this period. This defines the need for two modes of delivery to achieve the same learning outcomes during this period.

It is not the role of the University to assist in sea time opportunities, other than to mentor those at or preparing to go to sea through their academic study.
10. Progression criteria for Final and Intermediate Awards

Intermediate Award Title
Upon successful completion 240 credits in stage 1 and 2 the student may be awarded a named DipHE Navigation and Maritime Science. If prior to completion of stage 2 the trajectory of the student indicates a possible =>50% in each module, and a pass at all A1 assessments they may transfer to the FdSc Navigation and Maritime Science.

Transfer deadline
Any student wishing to transfer to the FdSc Navigation and Maritime Science must do so by the final day of the second semester

Final award Title
Successful completion of 240 credits in stage 1 and 2, plus 120 credits at stage 4 will lead to the award of BSc(Hons) Navigation and Maritime Science. Students achieving the award of BSc(Hons) Navigation and Maritime Science when coupled with a pass mark of =>50% for each module, and passed all assessment thresholds for accreditation by the Maritime and Coastguard Agency will be recorded as having passed the Accreditation modules. These modules will be noted on the students transcript, and HEAR statement once in effect. Please note these are modules of accreditation only and not modules of learning.

After completion of all required ancillary courses and sea time the student having achieved a BSc (Hons) Navigation and Maritime Science with the Accreditation modules will also have achieved the level of competence to enable Notice of Eligibility to be submitted to the MCA for approval as a Merchant Navy deck officer subsequent to successful completion of an oral examination by the MCA.

Students achieving the non-accredited award will not be able to apply for a Notice of Eligibility from the MCA.

11. Exceptions to Regulations
The exception below was approved ARSC on the 12th May 2014.
All students enrolled on BSc Navigation and Maritime Science (4493) and FdSc Navigation and Maritime Science (4494) are subject to in year referral.

The referral relates to the elements of a module (typically examination and/or coursework) not individual pieces of coursework. Therefore staff will select a represented referred assessment for that entire element.

The university module element pass mark is 40%. For credit rated modules NMTB and MCA accreditation purposes the module element average pass mark is 50%. All NMS referrals will be capped at 50%. Students following the accredited pathway must, in addition to meeting the 50% module element average, pass certain individual safety critical assessments at higher thresholds (60% or 65%)\(^3\) to satisfy the MCA/NMTB these are recorded as Pass/Fail in zero credit rated modules.

\(^3\)  
- 50% in all modules
- 60% in all relevant stability assessments
- 65% in all relevant navigation assessments
Students may have three attempts attempt to pass each module element. Students attempting in year referral must be aware that the referred mark replaces the initial mark so a subsequent poor performance may result in a lower recorded mark.

There are four possible scenarios:

1) Students who pass the module elements with an average of 50% or more and achieve the higher 60% or 65% safety critical thresholds in individual assessments. The module element average will be recorded in the credit rated module and an achieved status placed in the associated zero credit rated module for the higher MCA/MNTB thresholds.

2) Students not achieving an element average of 50% and the higher 60% or 65% in these individual assessments may be referred in these specific pieces of coursework which will act as a module element referral and a pass/fail safety critical assessment at the 60% or 65% threshold. Success at the appropriate levels will result as an “achieved” record recorded in the associated zero credit rated module for accreditation at the 60 or 65% thresholds; however the module element mark (which goes towards degree classification) will be capped at 50%.

3) Students who achieve a module element average of 50% or more but who have failed to achieve the safety critical 60% or 65% higher mark for threshold in specific pieces of coursework may have further attempts to achieve this which are recorded as pass/fail in the associated zero credit rated module. In this case the credit rated module element pass threshold of 50% has been achieved and will remain unaltered. Subsequent attempts to achieve the higher safety critical thresholds of 60 or 65% will be recorded as an achieved status in the associated zero credit rated module.

4) Students who achieve the safety critical 60% or 65% threshold in an individual assessment but fail to achieve a module element average of 50%. In this case the student will receive an achieved status in the associated zero credit rated module and will be referred in the credit rated module element which will be capped at 50%.

Staff must record a history of all marks and number of attempts and the senior administrator must be informed of any in year referral mark changes and number of attempts.

Whilst every attempt to ensure the referral happens within the teaching periods will be made the referral may be given over the summer following panels and boards.

**Exceptions to CEP Design Guidelines**
The exception below was approved by David Coslett (Deputy Vice Chancellor) 7th July 2014.
Due to external accreditation and regulation the NMS programmes (FdSc and BSc) will retain their long thin 20 credit year-long modules whilst delivering in “short fat CEP style” blocks.

Stage 2 and the final stage will be timetabled within these blocks to fit the CEP model shown in the diagram over.

Stage 1 will be exempt from Plymouth Plus and will be delivered as per the diagram over.
# NMS CEP Plan as Approved

<table>
<thead>
<tr>
<th>Week</th>
<th>CEP Model 15/16 - Level 4 (credit hrs)</th>
<th>Module 15/16 - Level 5/6 (credit hrs)</th>
<th>NMS Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Module 1 (Introduction)</td>
<td>Module 1 (Introduction)</td>
<td>NMS 15/16</td>
</tr>
<tr>
<td></td>
<td>20 credits</td>
<td>20 credits</td>
<td>credits</td>
</tr>
<tr>
<td>2</td>
<td>Module 2</td>
<td>Module 2</td>
<td>NMS 15/16</td>
</tr>
<tr>
<td></td>
<td>20 credits</td>
<td>20 credits</td>
<td>credits</td>
</tr>
<tr>
<td>3</td>
<td>Module 3</td>
<td>Module 3</td>
<td>NMS 15/16</td>
</tr>
<tr>
<td></td>
<td>20 credits</td>
<td>20 credits</td>
<td>credits</td>
</tr>
</tbody>
</table>

**Notes:**
- NMS Delivery: Credits (hours) vary by topic.
- CEP Model 15/16 and Module 5/6 refer to credit hours and delivery methods specific to each level.

**Additional Information:**
- Module 4 (Midterm Plan) is included, with 20 credits.
- Easter Vacation periods are marked, with associated activities.
- PTA and Tutoring are scheduled for specific weeks.

**Project Dates:**
- Project 40 credits: Weeks 10-12
- Project 40 credits: Weeks 20-22

**Exams and Assessments:**
- Exams and assessments are scheduled for specific weeks.
- Personal Tutoring is noted for weeks 1, 11, and 21.

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**Table Details:**
- Weeks 1-28 are indicated with corresponding dates and activities.
- CEP and NMS delivery methods are aligned for effective program planning.

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12. Transitional Arrangements
The transitional arrangements for previous programmes are now complete.

13. Teaching and assessment strategies
The teaching and learning strategy is such that level 4 and 5 lectures are used to build a factual knowledge base, introduces the theoretical base underpinning the subject area, develops conceptual frameworks and develops learning skills. In stage 1 of the programme the emphasis then moves to field work and experiential learning, with sponsored students utilising their sea time opportunity and non-sponsored students using the University facilities to enhance and develop their taught underpinning knowledge. This is an intense period of student centred learning with the development of taught skills through on campus or remote tutelage in order for the students to complete a portfolio of work.

All sponsored students will be expected to establish a reliable way of communicating whilst on board and maintain contact with their allocated shore side tutor for guidance whilst off shore.

Levels 4 and 5 are designed to effectively prepare the student for the Level 6 work, where independent learning comes to the fore. The freedom from any accreditation requirements allows the tutors and students to really focus on the evaluative and reflective practices that run throughout the Level 6 modules.

In order to implement this strategy an innovative range of assessments are utilised across all four stages which take into account differing student learning styles. A mixture of examination and coursework is used, typical coursework elements include:

• Practical Application / Simulation: enables the student to demonstrate that theoretical knowledge can be applied in context and that the subject-related skills have been developed in a strictly controlled environment.
• Calculation: enables the student to demonstrate that the correct methodology can be identified and applied.
• Reports: enables the student to demonstrate effective written communication commensurate with the expectations of employers.
• Oral and Visual Presentation: enables the student to demonstrate effective oral and visual communication commensurate with the expectations of employers.
• Peer Assessment: used for both formative and summative elements to enable students to develop their team working and management skills again commensurate with the expectations of employers.

This is achieved through a mixture of individual and group assessments. The group elements develop and enhance team operation and management skills typically required for graduate career progression.

It should be noted that due to the sea time requirements of the programme, there will be an opportunity for students to submit work via a tiered formative assessment. This
will allow a student to receive formative feedback on submitted work, and gain the opportunity to develop the work further until the required threshold is achieved to the satisfaction of the module leader. Such process will be formally recorded, and reported through the Programme Review process.

Table 1 overleaf indicates the types of assessment currently undertaken to prove compliance with the learning outcomes.
Table 1. Assessment techniques.

<table>
<thead>
<tr>
<th>attributes and skills</th>
<th>examples</th>
<th>developed through</th>
<th>rationale for approach</th>
<th>assessed through (formative and/or summative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>knowledge / understanding</td>
<td>factual knowledge, basic precepts, comprehension, theories, methodologies</td>
<td>lectures and hand-outs, tutorials, seminars, practicals, problem-based learning, project work</td>
<td>Principles and theory are explained in lectures and demonstrated in practicals and simulations, encouraging ownership of learning.</td>
<td>coursework and examination, calculations, reports, projects, simulation, group work</td>
</tr>
<tr>
<td>cognitive / intellectual skills</td>
<td>application of methodology, critical analysis, synthesis, evaluation</td>
<td>project work, problem-solving, case studies, debate, critiques</td>
<td>The use of realistic scenarios to stimulate the assimilation and development of relevant intellectual processes.</td>
<td>coursework and examination, calculations, reports</td>
</tr>
<tr>
<td>key / transferable skills</td>
<td>communication, numeracy, teamwork, learning to learn</td>
<td>oral and visual presentations, practicals, seminars, report writing</td>
<td>The use of and active learning approach in the application of theory in a variety of situations.</td>
<td>self-assessment, peer assessment, simulation, posters, oral and visual presentations, group work, reports</td>
</tr>
<tr>
<td>practical skills (subject specific)</td>
<td>appropriate selection of methodology, position determination, navigation strategies</td>
<td>fieldwork, practicals</td>
<td>Linking theory to practice and working through examples.</td>
<td>Simulations, calculations, reports</td>
</tr>
<tr>
<td>employment-related skills</td>
<td>working with others, project</td>
<td>reflection on practice, group work</td>
<td>To provide the skills required in the industries linked to the career paths from the Marine</td>
<td>group work, peer assessment</td>
</tr>
<tr>
<td>management personal development planning</td>
<td>report writing Professional Development Planning</td>
<td>Studies scheme.</td>
<td>reports projects</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>reflection on practice and own development</td>
<td>career awareness and planning</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Version 5**

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Table 2 has been developed to assist the tutors in the marking criteria required for level 4 and level 5 outcomes. This should be considered in relation to the definitive module records, as this table will define the generic marking criteria for each module.

<table>
<thead>
<tr>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding 86-100%</td>
<td>Comprehensive coverage of relevant issues. Extremely well informed knowledge base relevant to assignment. Very clearly written, logically structured and presented. Critical discussion of current issues and their influence on practice. Excellent application of underpinning knowledge. Consistent application of exemplary techniques, relevant to the level of safety required for that task.</td>
<td>Consistently logical and critical analysis throughout. Exemplary linkage of underpinning knowledge to application. Demonstrates consistent independent thought on relevant issues. Incorporates evidence of rationalised, safe, practice.</td>
</tr>
<tr>
<td>Excellent 70-85%</td>
<td>Thorough coverage of relevant issues. Well informed knowledge base relevant to assignment. Clearly written, logically structured and presented. Discussion of current issues and their influence on practice. Excellent application of</td>
<td>Well-argued presentation and critical analysis throughout. Identifies and discusses relevant underpinning knowledge and its application. Evidence of independent thought, clearly expressed. Comprehensive and wide</td>
</tr>
<tr>
<td><strong>underpinning knowledge.</strong> Consistent application of suitable techniques, relevant to the level of safety required for that task.</td>
<td><strong>ranging knowledge base of underpinning theory. Evidence of safe application of techniques.</strong></td>
<td><strong>techniques and maritime applications.</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Satisfactory</strong> 50-59%</td>
<td>Utilises appropriate and relevant theory. Consistent application of theory. Incorporates evidence of a safe approach to issues. Well-structured and developed presentation. References and/or</td>
<td>Sound knowledge of subject matter. Evidence of ability to apply knowledge to new situations. Analysis of current issues appropriate. Some arguments introduced. Correct citation of</td>
</tr>
<tr>
<td>Achieved 40-49% but not at a level to allow MCA certification in level 4 and 5.</td>
<td>Does not fully meet the criteria and requirements of the module assessment.</td>
<td>Does not fully meet the criteria and requirements of the module assessment.</td>
</tr>
<tr>
<td>Clear Failure to achieve. Less than 40%</td>
<td>Unreferenced or no supporting material. Lacking in theoretical content. Poorly organised presentation. Difficult to read and follow. Unsafe application of techniques in a safety critical area of study.</td>
<td>Limited and inaccurate referencing and or supporting materials. Lack of understanding of key issues relating to underpinning knowledge. Unsafe application of techniques in a safety critical area of study.</td>
</tr>
<tr>
<td>Supporting material generally accurate. Meets the criteria and requirements of the module assessment. Meets relevant module learning outcomes.</td>
<td>References and literature used. Structured and clear presentation. Meets relevant module learning outcomes.</td>
<td>Clear, with good structure, and meets all module outcomes.</td>
</tr>
<tr>
<td>Navigation and management techniques.</td>
<td>Serious misconceptions and basic errors of underpinning theory.</td>
<td></td>
</tr>
</tbody>
</table>
14. Mapping and Appendices:

Appendix 1 Guidance on Navigation and Maritime Science Student Status and Sea Time

Guidance on Navigation and Maritime Science Student Status and Sea Time

This document provides clarification for staff and students of the processes outlined in the Programme Specification for NMS programmes. Please read and ensure you respond to the student actions outlined in red.

Stage 1 going to sea

Stage 1 students who are sponsored (either FdSc or BSc) leave the university early (typically the end of February) to go to sea aboard their sponsoring companies vessels. They will complete some work based learning coursework as part of (NMS108) during the first part of this sea time.

These students will be aboard commercial vessels meeting Safety of Life at Sea (SOLAS) and International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) requirements which are both International Maritime Organisation (IMO) conventions.

Student Action

- If you are an International Student on a Tier 4 visa you must inform the UK Borders Agency, the University of Plymouth UKBA Compliance Office ukba-reporting@plymouth.ac.uk and the University Placements Office placements@plymouth.ac.uk in January of the dates you will be absent and your company/crewing agency address, email address and contact telephone number.

IMPORTANT: FAILURE DO THIS WILL RESULT IN YOUR VISAS BEING WITHDRAWN!

- All other students must email the University Placements Office placements@plymouth.ac.uk in January of the dates you will be absent and your company/crewing agency address, email address and contact telephone number.

Stage 1 students going to sea on large yachts or superyachts

Students without sponsorship or sponsored by superyacht companies, sail training organisations or privately owned vessels but who are not working for shipping companies also leave the university early (typically the end of February) to go to sea aboard these vessels providing they meet MCA requirements as laid out in MSN1802 (M) or any superseding M notice.

Essentially the vessel must fall under the categories described in MSN1802:-
a) Commercial yachts or sail training vessels of 24 metres and over in loadline length and of less than 3000gt and which do not carry cargo and do not carry more than 12 passengers, covered by the Maritime and Coastguard Agency (MCA) Large Commercial Yacht Code (LY2)1, and

b) Privately owned yachts, not in commercial use, of 24 metres and over in loadline length and of less than 3000gt used for sport or pleasure and which do not carry cargo and do not carry more than 12 passengers

The ability to leave early in stage 1 and undertake the work based learning option will only be offered to students serving aboard vessels which meet these requirements so that the sea time counts towards the MCA Master Yacht 3000GT qualification.

Students who have offers of places aboard vessels who do not meet these codes will have to remain at university until the end of the academic year.

Student Actions
- If you are an International Student on a Tier 4 visa you must inform the UK Borders Agency, the University of Plymouth UKBA Compliance Office ukba-reporting@plymouth.ac.uk and the University Placements Office placements@plymouth.ac.uk in January of the dates you will be absent and your company/crewing agency address, email address and contact telephone number.

IMPORTANT: FAILURE DO THIS WILL RESULT IN YOUR VISA BEING WITHDRAWN!

- All other students must email the University Placements Office placements@plymouth.ac.uk in January of the dates you will be absent and your company/crewing agency address, email address and contact telephone number.

Stage 2 students going to sea sponsored by shipping companies

Between Stage 2 and the final year

Between stage 2 and the final stage of the BSc students may go to sea for a year to complete training towards a professional certificate of competence. Typically this is for sponsored students who will suspend their study after completion of stage 2 and sail aboard their sponsoring companies’ vessels which are registered and maintained to international standards specified above. They are in effect during this time employees of the company and not University students as they have suspended study.

Student Action
- If you are a student in this position you must and inform the Science and Environment Faculty office Senior Administrator (for NMS Programmes by email (at time of writing: Susan Pearce susan.pearce@plymouth.ac.uk) stating that you will be taking a year out and will be suspending study. Please
note that if you suspend your studies you will not be eligible for a student loan and will be liable for Council Tax.

- If you are an International Student on a Tier 4 visa you must also inform the UK Borders Agency and the University of Plymouth UKBA Compliance Office that you are suspending your studies – you must do this BEFORE you suspend as it may affect your visa. Email ukba-reporting@plymouth.ac.uk and Science and Environment Faculty office Senior Administrator for NMS Programmes (at time of writing: susan.pearce@plymouth.ac.uk), with your company/crewing agency address, email address and contact telephone numbers.

FAILURE DO THIS WILL RESULT IN YOUR VISA BEING WITHDRAWN!

Stage 2 students going to sea on large yachts or superyachts

Some of our students are not sponsored but wish to take a similar year out aboard again a vessel that meets Maritime and Coastguard Agency (MCA) standards in MSN1802. Students in this position may suspend studies for a year or may wish to undertake a placement year on a BPIE337 module which is a 0 credit rated module and will cost them £900.00 (approx.) in student fees. However, it does allow them to access student funding and students will be awarded their BSc with a Certificate of Industrial Experience.

Please note if the vessel you are serving aboard does not meet the MCA requirements and you cannot complete the MCA Training Record book you are not eligible for the BPIE placement option.

Student Action

- If you are a student in this position you must and inform the Science and Environment Faculty office Senior Administrator (for NMS Programmes by email (at time of writing: Susan Pearce susan.pearce@plymouth.ac.uk) stating that you will either be taking a year out and suspending study or will be going out on placement. If you are going on placement you must register with the placements office and complete the necessary paperwork. Please email the University Placements Office with your company/crewing agency address, email address and contact telephone numbers at placements@plymouth.ac.uk requesting that you undertake BPIE337. If you follow the placement year option NMS staff will inspect and review your TRB on return as you must pass the placement module, BPIE337, in order to pass the placement.

- If you are an International Student on a Tier 4 visa you must also inform the UK Borders Agency and the University of Plymouth UKBA Compliance Office that you are either suspending your studies or undertaking BPIE337. Email ukba-reporting@plymouth.ac.uk with your company/crewing agency address, email address and contact telephone numbers.

FAILURE DO THIS WILL RESULT IN YOUR VISA BEING WITHDRAWN!
## Appendix 2 Learning Outcomes Map

**BSc(Hons) Navigation and Maritime Science - ES3 Benchmarks and QAA Foundation Degree Benchmark Statements (for transfer clarity).**

### Certificate Level

<table>
<thead>
<tr>
<th>Attribute/Skills</th>
<th>Aim</th>
<th>Benchmark Statement</th>
<th>Related Core Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge and Understanding</strong></td>
<td></td>
<td>FDQ B</td>
<td>ES3</td>
</tr>
<tr>
<td>The scope of the complex interaction of the marine environment, the human element and technology.</td>
<td>1,3,4</td>
<td>A</td>
<td>A,B,D</td>
</tr>
<tr>
<td>Basic navigation techniques.</td>
<td>1,2</td>
<td>B</td>
<td>B,F,K, M,T</td>
</tr>
<tr>
<td>Knowledge of the underlying concepts and principles associated with their area of study, and an ability to evaluate and interpret these within the context of that area of study.</td>
<td>3,4</td>
<td>C,D</td>
<td>A,C,</td>
</tr>
<tr>
<td><strong>Cognitive and Intellectual Skills</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognise the importance of planning before carrying out a task.</td>
<td>1,3</td>
<td>B,E</td>
<td>D,G,S,X</td>
</tr>
<tr>
<td>Collect, analyse and evaluate information.</td>
<td>2,4</td>
<td>F</td>
<td>B,E,H,I</td>
</tr>
<tr>
<td>Demonstrate an ability to present, evaluate, and interpret qualitative and quantitative data, to develop lines of argument and make sound judgements in accordance with basic theories and concepts in their subject area.</td>
<td>1,2,4</td>
<td>F,G</td>
<td>E,H,I</td>
</tr>
<tr>
<td><strong>Key Transferable Skills</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make use of appropriate ICT, including standard business applications and the internet.</td>
<td>3</td>
<td>H</td>
<td>U,P</td>
</tr>
<tr>
<td>Write short structured reports.</td>
<td>3</td>
<td>G</td>
<td>P,N,Q</td>
</tr>
<tr>
<td>Organise their own learning.</td>
<td>3</td>
<td>H,I,J</td>
<td>Y</td>
</tr>
<tr>
<td>Evaluate the appropriateness of different approaches to solving problems related to their area of study and/or work.</td>
<td>1,2</td>
<td>F</td>
<td>M,G,V</td>
</tr>
<tr>
<td>Communicate the results of their study/work accurately and reliably, and with structured and coherent arguments.</td>
<td>4</td>
<td>G</td>
<td>P</td>
</tr>
</tbody>
</table>

---

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### Practical Skills

| Conduct basic navigation tasks | 1,2 | A,B | F | NMS101 NMS108 |

### Employment Related Skills and Other Professional Skills

| Recognise the need to establish a management framework for dealing with situations where problem-solving is a key requirement. | 3,4 | D | W,V | NMS106 |

### Foundation Degree Level

<table>
<thead>
<tr>
<th>Attribute/Skills</th>
<th>Aim</th>
<th>Benchmark Statement</th>
<th>Related Core Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge and Understanding</strong></td>
<td></td>
<td>FDQ B ES3</td>
<td></td>
</tr>
<tr>
<td>Execute the requirements of the core technical and academic knowledge and skills for STCW deck officer certificates of competency.</td>
<td>1, 6</td>
<td>A,B, E A,C,F, K,T,J</td>
<td>NMS206</td>
</tr>
<tr>
<td>Draw on the taught information and concepts to prove their competency in the specific areas of underpinning knowledge required by the accrediting body.</td>
<td>1,2, 6</td>
<td>A,F, G A,C,F, K,T</td>
<td>NMS206</td>
</tr>
<tr>
<td>Demonstrate knowledge and understanding of calculations and methodologies required for marine position determination and prediction.</td>
<td>1,2,5, 7</td>
<td>A,B, G A,C,M</td>
<td>NMS201 NMS205 NMS206</td>
</tr>
<tr>
<td>Identify decision support methodologies appropriate to the marine environment, including passage planning, collision avoidance.</td>
<td>2,3,6</td>
<td>E,F C,D,E, F,M</td>
<td>NMS201 NMS204</td>
</tr>
<tr>
<td>Recognise and explain the principles and theories relevant to naval architecture, engineering and stability.</td>
<td>1,2,4, 7</td>
<td>A,C, G C,D,S</td>
<td>NMS202</td>
</tr>
<tr>
<td>Identify the planning, safety and commercial considerations relating to cargo and service ship operation.</td>
<td>1,2,5</td>
<td>A A,D,F</td>
<td>NMS202 NMS203</td>
</tr>
<tr>
<td>To develop an appreciation of a range of positioning instrumentation, and analysis of the derived data.</td>
<td>1,4</td>
<td>D B,E,K, M,S</td>
<td>NMS201 NMS204</td>
</tr>
</tbody>
</table>

<p>| <strong>Cognitive and Intellectual Skills</strong> | | |
| Analyse their own capabilities set against the MNTB Occupational Standards and related documentation. | 3 | E,I,J X,Y | NMS204 |
| Independently organise information and develop their own personal development plans. | 2,4 | H X,L,G | NMS204 NMS205 |
| Critically evaluate marine navigation techniques and shipboard practice. | 4 | C,D B,D,Q | NMS201 NMS202 NMS205 |</p>
<table>
<thead>
<tr>
<th>Solve problems based on critical safety related scenarios.</th>
<th>1,3</th>
<th>A,D</th>
<th>K,F,M</th>
<th>NMS204</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply appropriate navigational methodology to a variety of problems and scenarios.</td>
<td>1</td>
<td>A,D</td>
<td>B,M,T,Q</td>
<td>NMS201, NMS205, NMS206</td>
</tr>
<tr>
<td>Understand the limits of their knowledge, and how this influences their analysis of a situation and influences decision making, both in the context of their academic work and in their contextual application at sea.</td>
<td>2,4</td>
<td>E</td>
<td>W,V</td>
<td>NMS204, NMS205</td>
</tr>
</tbody>
</table>

### Key Transferable Skills

<table>
<thead>
<tr>
<th>Make further extended use of appropriate ICT, the internet and specialist software.</th>
<th>2,3,6,7</th>
<th>H</th>
<th>H,S,T,U</th>
<th>NMS202</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectively communicate information, arguments and analysis in a variety of forms.</td>
<td>1,3,7</td>
<td>G</td>
<td>P,N,O</td>
<td>NMS204, NMS205, NMS203</td>
</tr>
<tr>
<td>Appreciate the group dynamics encountered in teamwork situations.</td>
<td>3</td>
<td>G,H</td>
<td>G,V,W,Z</td>
<td>NMS204, NMS205</td>
</tr>
<tr>
<td>Recognise the benefits if undertaking further training and development, both in respect of learned and new skills.</td>
<td>2</td>
<td>I,J</td>
<td>X,Y</td>
<td>NMS205</td>
</tr>
</tbody>
</table>

### Practical Skills

<table>
<thead>
<tr>
<th>Acquire and use weather information.</th>
<th>1</th>
<th>A</th>
<th>E,R</th>
<th>NMS205</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine risk of collision and take appropriate action.</td>
<td>1,2</td>
<td>A,B</td>
<td>A,M</td>
<td>NMS201, NMS204</td>
</tr>
<tr>
<td>Determine a vessels position.</td>
<td>1</td>
<td>A,B</td>
<td>A,C,F,S</td>
<td>NMS201</td>
</tr>
</tbody>
</table>

### Employment Related Skills and Other Professional Skills

<table>
<thead>
<tr>
<th>Perform a supporting role in the management of situations where problem solving is a key requirement.</th>
<th>3,4</th>
<th>F,H</th>
<th>V,P,Z</th>
<th>NMS204, NMS205</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraise the factors affecting trim, stability and stress for a variety of vessel types.</td>
<td>1,2</td>
<td>A,B</td>
<td>E,H,I,Q,R</td>
<td>NMS202, NMS205</td>
</tr>
<tr>
<td>Appraise the factors affecting the loading, carriage and discharge of cargo.</td>
<td>1,2</td>
<td>A,B</td>
<td>E,H,I,Q,R</td>
<td>NMS202, NMS205</td>
</tr>
<tr>
<td>Undertake further training, develop existing skills and acquire new competencies that will enable them to assume significant responsibilities within organisations.</td>
<td>2,3,7</td>
<td>I,J</td>
<td>X,Y,Z</td>
<td>NMS203, NMS206</td>
</tr>
</tbody>
</table>
| Qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision making. | 3,6 | H | X, Y, Z | NMS204
NMS205 |
Honours Degree Level (note mapping now against ES3 benchmarks only)

<table>
<thead>
<tr>
<th>Core Programme Intended Learning Outcomes</th>
<th>Aim</th>
<th>Subject Benchmark</th>
<th>Related Core Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge / Understanding</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculations required in marine operations, including vessel stability, position, course and distance.</td>
<td>1; 3, 10,11</td>
<td>f; t</td>
<td>NMS301, NMS302</td>
</tr>
<tr>
<td>Problem-solving methodologies appropriate to the marine environment, including project management, team management.</td>
<td>1; 3, 10,11</td>
<td>d</td>
<td>NMS301, NMS302, NMS303</td>
</tr>
<tr>
<td>How to communicate information to the intended audience, including research output.</td>
<td>2; 3, 8,9</td>
<td>p</td>
<td>NMS301, NMS302, NMS303</td>
</tr>
<tr>
<td>Recognise the legal framework relating to the practice of vessel management and the carriage of goods and passengers by sea.</td>
<td>1, 11</td>
<td>c</td>
<td>NMS303, NMS306</td>
</tr>
<tr>
<td><strong>Cognitive / Intellectual Skills (generic)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determine appropriate methodologies for solving complex problems.</td>
<td>1; 3, 9,10,11</td>
<td>c</td>
<td>NMS301, NMS303, NMS302, NMS306</td>
</tr>
<tr>
<td>Apply appropriate problem-solving techniques to complex marine situations.</td>
<td>3, 8</td>
<td>f; t</td>
<td>NMS301, NMS303, NMS304, NMS306</td>
</tr>
<tr>
<td>➢ Appraise the effectiveness of methods employed.</td>
<td>3, 8,11</td>
<td>e</td>
<td>NMS304, NMS303, NMS308, NMS306</td>
</tr>
<tr>
<td>➢ Analyse the legal concepts applicable to the shipping industry.</td>
<td>3, 4,11</td>
<td>e</td>
<td>NMS308</td>
</tr>
<tr>
<td><strong>Key / Transferable Skills (generic)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Make use of appropriate ICT, including standard business applications, the Internet and specialist software.</td>
<td>3, 10</td>
<td>u</td>
<td>NMS303, NMS304, NMS308</td>
</tr>
</tbody>
</table>
- Communicate effectively in written, oral and visual formats.  
  2,3,10,11  
  NMS303  
  NMS301  
  NMS302

- Optimise their performance across a range of activities, including self-directed learning, research and project management.  
  2,3,9,10,11  
  NMS304  
  NMS308

- Work effectively in a team, at any level.  
  2,3,8,10  
  NMS303  
  NMS301  
  NMS308

**Practical Skills (subject specific)**

- Determine a vessel's position and appraise the limitations of the method employed.  
  1,3,8  
  NMS303

**Employment-related Skills**

The aspiration for this programme is to be career-oriented, therefore many of the skills described above may be considered as employment-related. The following skills are also developed:

- Take the lead in the management of situations where problem-solving is a key requirement.  
  1; 2; 3; 4,10,11  
  NMS301  
  NMS308  
  NMS303

- The ability to act appropriately within the legal frameworks relevant to the shipping industry.  
  1; 4,11  
  NMS308  
  NMS301
Appendix 3  MNTB approved changes 2014
The following changes were noted on the annual approval form and approval was subsequently granted.

MNTB Programme re-approval process, May 2014

Submitting Institution – *(University of Plymouth)*
Programme name – *(FdSc Navigation and Maritime Science)*

<table>
<thead>
<tr>
<th>Nature of the change</th>
<th>Rationale for the change/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary staff changes</td>
<td>Alastair McCallien and Neil Northmore are replacing Chris Pollard (who has taken a career break) From Sept 2013-Sept 2014 Alastair is an experienced hydrographic surveyor Neil is an experienced maritime solicitor.</td>
</tr>
<tr>
<td>Permanent staff changes</td>
<td>Andrew Eccleston has retired without replacement</td>
</tr>
<tr>
<td>WBL module titular change (second sea phase)</td>
<td>The BPIE module is now chargeable at a cost of £900.00 per cadet. To give a zero cost option the WBL in the second sea phase will now be managed from within the Orals prep and EDH Course structure for FdSc cadets with no extra cost to the student of company. BPIE will remain an option for any unfunded/unsponsored students as it allows access to loan facilities but it is not envisaged that any sponsored cadets will take that option.</td>
</tr>
</tbody>
</table>

NB – if there are no changes to the programme from last year, please state this above.

I confirm that this programme meets the requirements of STCW as mapped in the 2013 submission against the STCW 2010 Manila amendments.

Signed:

[Signature]

Job title: Associate Head Navigation and Maritime Science

Date: 21/05/2014
MNTB Programme re-approval process, May 2014

Submitting Institution – *(University of Plymouth)*
Programme name – *(BSc Navigation and Maritime Science)*

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Job title: Associate Head Navigation and Maritime Science

Date: 21/05/2014

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