

PROGRAMME SPECIFICATION



1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University, Ngee Ann Polytechnic (NP), Singapore Polytechnic (SP)
3	Final Award	BEng(Hons)
4	Programme Title	Naval Architecture with Marine Engineering; Naval Architecture with Offshore Engineering
5	UCAS/Programme Code	1205/1206/1207
6	Programme Accreditation	N/A
7	QAA Subject Benchmark(s)	Engineering
8	FHEQ Level	H
9	Date written/revised	20 August 2007

10 Programme Aims

The programme aims to produce marine technology graduates who:

- 1 have developed well founded knowledge, skills and understanding of naval architecture, with two streams of marine engineering and offshore engineering;
- 2 are able to couple a sound theoretical grasp of the subject with practical application, awareness of responsibilities to society and the environment, the requirement for flexibility and the ability to assemble information from a variety of sources;
- 3 have the ability to prioritise work and meet deadlines and the ability to work both alone and within multidisciplinary teams;
- 4 are prepared for employment in one of two well recognised sectors of the marine industries worldwide: shipbuilding/ship repair and offshore engineering.
- 5 provide a programme which meets the FHEQ at Honours level and which takes appropriate account of the subject benchmark statements in Engineering document as referenced in <http://www.qaa.ac.uk/crntwork/benchmark/engineering.pdf>

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for Engineering (E).

Knowledge and Understanding

On completing the programme students should have knowledge and understanding of:

- A1 Mathematics and physics that are relevant to naval architecture, marine engineering and offshore engineering(E);
- A2 The fundamental concepts, principles and theories of marine technology (E);
- A3 Business and management techniques that are relevant to marine technology and marine technologists (E);
- A4 Detailed knowledge and understanding of the essential facts, concepts, principles and theories relevant to the student's chosen area of specialisation within Marine Technology (E);
- A5 The role of marine technologists in society and the constraints within which their engineering judgement will be exercised (E);

- A6 The professional and ethical responsibilities of marine technologists (E);
 A7 The environmental issues that affect marine technology and the issues associated with sustainable engineering solutions;
 A8 Conceptual and detailed design of artefacts appropriate to their area of specialisation;
 A9 Production practice including codes of practice, design, the assessment of safety risks, and the legislative framework for safety.

Teaching and Learning Methods

Acquisition of A1 and A2 is through a combination of lectures, tutorials, example classes, laboratory experiments and coursework throughout the programme and through projects in Stage 3.
 Acquisition of A3 is through a combination of lectures, supervisions, coursework and projects in Stages 2 and 3.
 Acquisition of A4 is through a combination of lectures, laboratory experiments, coursework and projects in Stage 3.
 Acquisition of A5 and A6 is through lectures throughout the programme and coursework in Stage 3.
 Acquisition of A7 is through a combination of lectures, seminars, coursework and projects especially in Stage 3.
 Acquisition of A8 is through the design project in Stage 3 and lectures and coursework in Stages 2 and 3.
 Acquisition of A9 is addressed in lectures associated with Stage 2 and Stage 3 modules.

Assessment Strategy

Testing the knowledge base is through a combination of unseen written examinations (1-4, 9) and assessed coursework (1-9) in the form of laboratory experiment write-ups (1, 2, 4), examinations (8), coursework reports (3-9) and project reports and presentations (2, 3, 4, 7,8).

Intellectual Skills

On completing the programme students should be able to:

- B1. Plan, conduct and report a programme of investigative work;
- B2. Analyse and solve engineering problems (E);
- B3. Design a structure or component to meet a need (E);
- B4. Be creative in the solution of problems and in the development of designs (E);
- B5. Evaluate designs and make improvements (E);
- B6. Integrate and evaluate information and data from a variety of sources (E);
- B7. Take a holistic approach to solving problems and designing systems, applying professional judgements to balance risks, costs, benefits, safety, reliability, aesthetics and environmental impact (E).

Teaching and Learning Methods

Skills B1 and B2 are developed during laboratory experiments, coursework and projects as well as through lectures, tutorials, example classes, laboratory experiments, coursework and projects associated with Stage 2 and Stage 3 modules.
 Skills B3, B4 and B5 are developed through engineering applications and marine engineering design as well as research project and dissertation modules which students study during Stages 2 and 3.
 Skill B6 is developed through coursework activities, laboratory experiments, and research and design projects as well as through tutorials, example classes, laboratory experiments, coursework and projects associated with Stage 2 and Stage 3 modules.
 Skill B7 is developed through design and project work carried out during Stage 3.

Assessment Strategy
<p>Analysis and problem solving skills are assessed through unseen written examinations and coursework.</p> <p>Experimental, research and design skills are assessed through laboratory experiment write-ups, coursework reports and project reports, presentations and unseen written examinations.</p> <p>Creative and design skills are assessed through coursework and unseen written examinations.</p>
Practical Skills
<p>On completing the programme students should be able to:</p> <ul style="list-style-type: none"> C1. Execute safely a series of experiments (E); C2. Use laboratory equipment to generate data (E); C3. Analyse experimental or computational results and determine their strength and validity(E); C4. Prepare technical drawings; C5. Prepare technical reports; C6. Give technical presentations; C7. Use the scientific literature effectively; C8. Take notes effectively; C9. Use computational tools and packages (E); C10. Produce a conceptual or elemental design to a specification; C11. Search for information to develop concepts.
Teaching and Learning Methods
<p>Practical skills are developed through the teaching and learning programme outlined above. Practical experimental skills (1-3) are developed through laboratory experiments and project work.</p> <p>Skill 4 is taught through lectures and developed through drawing coursework exercises.</p> <p>Skills 5 and 6 are taught through classes in Stage 2 and then developed through feedback on reports written and presentations made as part of coursework assignments.</p> <p>Skill 7 is developed through research project work.</p> <p>Skill 8 is practised throughout the programme.</p> <p>Skill 9 is taught and developed through coursework exercises and project work.</p> <p>Skill 10 is taught and developed through the design project in Stage 3 and lectures and coursework in Stages 2 and 3.</p> <p>Skill 11 is practised through the design project.</p>
Assessment Strategy
<p>Practical skills are assessed through laboratory experiment write-ups, coursework reports, project reports and presentations</p>
Transferable/Key Skills
<p>On completing the programme students should be able to:</p> <ul style="list-style-type: none"> D1. Communicate effectively (in writing, verbally and through drawings) (E); D2. Apply mathematical skills (algebra, geometry, modelling, analysis); D3. Work as a member of a team (E); D4. Use Information and Communications Technology (E); D5. Manage resources and time (E); D6. Learn independently in familiar and unfamiliar situations with open-mindedness and in the spirit of critical enquiry (E); D7. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career (E).

Teaching and Learning Methods

Transferable skills are developed through the teaching and learning programme outlined above.

Skill 1 is taught and practised through classes and the design project in Stage 3 and then developed through feedback on reports written and presentations made as part of coursework assignments.

Skill 2 is taught through lectures and tutorials and developed throughout the programme.

Skill 3 is developed through group project work.

Skill 4 is developed in many modules and is a skill developed as essential part of project work and report writing.

Skill 5 is developed through laboratory experiments, projects and other coursework activities and individual learning.

Skill 6 is introduced in Stage 2 and developed throughout the course with particular emphasis in Stage 3 on the investigative project.

Skill 7 is developed through lectures and tutorials and developed throughout the course.

Assessment Strategy

Skill 1 is assessed through coursework reports, presentations and oral examinations.

Skill 2 is assessed primarily through examinations.

Skill 4 is assessed through examinations and through research project work.

The other skills are not formally assessed

12 Programme Curriculum, Structure and Features

Basic structure of the programme

Candidates who have successfully completed a diploma in Ngee Ann Polytechnic (NP) or Singapore Polytechnic (SP) will qualify for this programme. Other candidates who have completed similar programmes which are equivalent to stage 1 of BEng Degree Programme in School of Marine Science and Technology in Newcastle University will be also eligible to apply.

The normal Undergraduate year is approximately 31 weeks, arranged in three terms and divided into two Semesters. This programme normally lasts two years, although it is possible to take a gap year, for example to spend time in industry to gain practical experience. Every Honours student studies 120 credits in each year. Students graduating from this programme with a B.Eng. will have completed 240 credits.

Students elect to follow a specialisation either for Marine Engineering or Offshore Engineering at the start of Stage 2. This is enhanced and extended in Stage 3.

In addition it is possible to exit after successful completion of Stage 2 with a Diploma of Higher Education.

A University credit is the equivalent of 10 notional hours of student study. Each module is a self-contained part of the programme of study and carries a credit rating.

Key features of the programme (including what makes the programme distinctive)

This programme is specifically designed for those candidates who have successfully completed a Diploma in Ngee Ann Polytechnic or Singapore Polytechnic or any other programme equivalent to Stage 1 of a BEng Degree Programme in the School of Marine Science and Technology, Newcastle University.

This programme is delivered by Newcastle University in collaboration with NP and SP in Singapore. The quality and standard of delivery in Singapore will be the same as the delivery of the similar programmes in the School of Marine Science and Technology at Newcastle University. Successful candidates will be awarded a BEng degree from Newcastle University.

Candidates who achieve a satisfactory average (as defined in the degree programme handbook) shall be eligible to continue their studies at MEng level at Newcastle University. Entry to MSc programmes at Newcastle University is possible following successful completion of this programme at levels specified for individual MSc programmes.

After successful completion of Year 1 in Singapore, students will have the option of attending an immersion programme delivered at Newcastle University campus during the summer vacation. At least a 10 credit module, either selected from Year 2 module list or any other module approved by Degree Programme Director will be delivered in a short period of 3 to 5 weeks in Newcastle.

Students will also have the option of completing another 10 credit module during any vacation period depending on the availability of the proposed module, approval of Degree Programme Director and payment of associated costs, if any.

Programme regulations (link to on-line version)

<http://www.ncl.ac.uk/regulations/programme/>

13 Criteria for admission

Entry qualifications

Engineering requires a wide range of attributes and abilities, so selection is not solely based on academic grades.

Admission offers normally conform to the minimum requirements for entry to Stage 2 of the equivalent Newcastle University Bachelor of Engineering programme in any of the UG Degree programmes in the School of Marine Science and Technology. A Diploma in a relevant subject area awarded by Ngee Ann Polytechnic or Singapore Polytechnic is an accepted entry qualification, and other equivalent international qualifications, comprising of appropriate subjects and grades, may also be considered.

Admissions policy/selection tools

Undergraduate selectors at Newcastle University will consider applications from NP/SP graduates or outside candidates who may qualify to enter this degree programme. Selectors seek evidence of motivation and commitment from the Personal Statement and Reference on application forms and applicants are encouraged to attend for interview whenever possible.

Non-standard Entry Requirements

Additional Requirements

Level of English Language capability

Applicants from NU and SP who have successfully completed their diploma and previous education in English would qualify to apply for this degree programme. Other applicants, whose first language is not English, would be required to demonstrate achievement of IELTS 6.0 or an equivalent certificate in English.

14 Support for Student Learning

The Student Services portal provides links to key services and other information is available at: <http://www.ncl.ac.uk/students/>

Induction

During the first week of the first semester students attend an induction programme provided by Newcastle University, NP and SP. New students will be given a general introduction to life as a Newcastle University student in Singapore, to the principle support services that will be available to students and to general information about their programme, as described in the Degree Programme Handbook. New and continuing students will be given detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc.

Services and facilities available to support students' learning include the following:

- Degree Programme Handbook (including Degree Regulations and Module sheets);
- Ngee Ann Polytechnic and Singapore Polytechnic libraries and Newcastle University's electronic Library;
- E-mail facilities;
- Extensive laboratories and computing facilities in both Ngee Ann and Singapore Polytechnics;

Study skills support

Students will develop a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification, provided by Newcastle University, NP and SP. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

Academic support

The initial point of contact for a student is with a lecturer or module leader, their tutor in the first instance (see below for more generic issues). Thereafter the Degree Programme Director (Newcastle University) or Head of School (Newcastle University) may be consulted. Issues relating to the programme may be raised at the Staff-Student Committee, and/or at the Board of Studies.

Pastoral support

All students are assigned a personal tutor in Singapore whose responsibility is to monitor the academic performance and overall well-being of their tutees.

In addition Newcastle University, NP and SP offer a range of support services, details of which are available on the following websites:

For Newcastle University:

<http://www.ncl.ac.uk/undergraduate/support/>

For NP:

<http://www.np.edu.sg/ss/>

For SP:

http://www.sp.edu.sg/SPweb/appmanager/home/default?_nfpb=true&_pageLabel=SP_P_PCS_SSS_O&_nfls=false

Support for students with disabilities

The NP and SP Disability Support Services provide help and advice for disabled students. They provides individuals with: advice about the NP/SP facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies.

Learning resources

Newcastle University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and by Information Systems and Services, which supports campus-wide computing facilities.

Students on this programme will be able to have access to a wide range of computing facilities through Newcastle University's "Remote Access System" or ras.ncl.ac.uk.

Increasingly, library material is available electronically via remote access so some of Newcastle University's library holdings will be available to students in Singapore

NP provides an extensive and advanced library facility with access to media, e-books, databases, e-journals and many other information resources such as OPAC on their library catalogues.

The Computer and Information Systems Department provides campus-wide IT services to the entire SP population where an integrated digital environment is provided to facilitate accessibility to and use of information and e-services to students.

15 Methods for evaluating and improving the quality and standards of teaching and learning

Module reviews

All modules are subject to review by questionnaires which are considered by the relevant Board of Studies in Newcastle University. Changes to, or the introduction of new modules are considered at the School of Marine Science and Technology's Teaching and Learning Committee and consequently at the Board of Studies. Student opinion is sought at the Staff-Student Committee in Singapore, which reports back to Board of Studies, and/or by comments from students' representatives directly sent to the Board of Studies at Newcastle University. New modules and major changes to existing modules are subject to approval by the Faculty Teaching and Learning Committee at Newcastle University.

Programme reviews

The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee.

External Examiner reports

External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with institutional student representatives, either through the Staff-Student Committee or by direct communication between student representatives.

Student evaluations

All modules, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Staff-Student Committee in Singapore (see above). The UK National Student Survey is sent out every year to final-year undergraduate students on UK university programmes, and consists of a set of questions seeking the students' views on the quality of the learning and teaching in their university. Further information is at www.thestudentsurvey.com/. With reference to the outcomes of the NSS and institutional student satisfaction surveys actions are taken at all appropriate levels by the institution.

Mechanisms for gaining student feedback

Feedback is channelled via the Staff-Student Committee in Singapore and the Board of Studies in Newcastle.

Faculty and University Review Mechanisms

The programme is subject to Newcastle University's Internal Subject Review process.

Accreditation reports

Accreditation for this programme will be sought from:

- Institute of Marine Engineering, Science and Technology (IMarEST)
- Royal Institution of Naval Architects (RINA)

Internal Review Reports

N/A

Previous QAA Reports

N/A

Additional mechanisms

16 Regulation of assessment

Pass mark

The pass mark is 40

Course requirements

Progression is subject to the NU's Undergraduate Progress Regulations and Undergraduate Examination Conventions. In summary, students must pass, or be deemed to have passed, 120 credits at each Stage. Limited compensation up to 40 credits and down to a mark of 35 is possible at Stage 2 and there are resit opportunities, with certain restrictions.

Weighting of stages

The marks from Stage 2 and Stage 3 will contribute to the final classification of the degree. The weighting of marks contributing to the degree for Stage 2 and Stage 3 is 1:2.

Common Marking Scheme

Newcastle University employs a common marking scheme, which is specified in the Undergraduate Examination Conventions, namely

	Honours	Non-honours
<40	Fail	Failing
40-49	Third Class	Basic
50-59	Second Class, Second Division	Good
60-69	Second Class, First Division	Very Good
70+	First Class	Excellent

Role of the External Examiner

An External Examiner, a distinguished member of the subject community, is appointed by Faculty Teaching and Learning Committee, after recommendation from the Board of Studies.

The External Examiner is expected to:

- See and review examination papers
- Moderate examination and coursework marking
- Attend the Board of Examiners
- Report to the University on the standards of the programme

In addition, information relating to the programme is provided in:

Newcastle University's Undergraduate Prospectus (see <http://www.ncl.ac.uk/undergraduate/>)

The School Brochure (contact enquiries@ncl.ac.uk)

The NU's Regulations (see <http://www.ncl.ac.uk/calendar/university.regs/>)

The Degree Programme Handbook

The NP's general information (see <http://www.np.edu.sg/aa/index.html> and <http://soe.np.edu.sg/soe/diploma/mot/index.html>

The SP's prospectus (see http://www.sp.edu.sg/SPweb/appmanager/home/default?_nfpb=true&_pageLabel=SP_AB_T_News_Pub_Prospectus)

The SP's info for Diploma in Marine Engineering (see http://www.sp.edu.sg/SPweb/appmanager/home/default?_nfpb=true&_pageLabel=SP_FS_Courses_SMA_FT_ME)

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Either

Intended Learning Outcome	Module codes (Comp/Core in Bold)
A1	MAR2112-ENG2008-EEE2010
A2	MAR2102-MAR2103-MAR2108-MAR2106-MAR2114-MAR2110-MAR2101
A3	ENG2001-MAR3121-MAR3127-MAR2101-MAR2114
A4	MAR3101-MAR3198-MAR3103-MAR3112-MAR3116-MAR3113-MAR3119-MAR2101-MAR2110-MAR3119
A5	MAR2113-MAR3127
A6	MAR3101-MAR3103-MAR3127-MAR2113
A7	MAR3101-MAR3103-MAR3127-MAR3198
A8	MAR3198-MAR3101-MAR3103-MAR2114
A9	ENG2001-MAR2113-MAR3101-MAR3103
B1	MAR3198- MAR3101-MAR3103-MAR2114- MAR2112
B2	MAR2114-MAR3101-MAR3103-MAR3127
B3	MAR2107-MAR3119-MAR3198
B4	MAR3101-MAR3103-MAR3198
B5	MAR3198-MR3101-MAR3103
B6	MAR2114-MAR3198
B7	MAR3198-MAR3101-MAR3103
C1	MAR2106-EEE2010-MAR2103-MAR3113-MAR2114
C2	MAR2106-EEE2010-MAR2103-MAR3113
C3	MAR2114
C4	MAR3198-MAR3103-MAR3101-MAR2107-MAR3119
C5	MAR3198-MAR3101-MAR3103
C6	MAR3198-MAR3101-MAR3103
C7	MAR3198-MAR3101-MAR3103
C8	All modules
C9	MAR2114
C10	MAR2107-MAR3119
C11	MAR3198-MAR3101-MAR3103
D1	MAR3101-MAR3103-MAR3198
D2	All modules
D3	MAR3198-MAR3101-MAR3103
D4	MAR2114
D5	MAR3198-MAR3101-MAR3103
D6	MAR3198-MAR3101-MAR3103
D7	MAR3127-MR3198