

FACULTY OF ENGINEERING

DEPARTMENT OF NAVAL ARCHITECTURE, OCEAN AND MARINE ENGINEERING

NAVAL ARCHITECTURE, OCEAN AND MARINE ENGINEERING

Master of Engineering in Naval Architecture and Marine Engineering

Master of Engineering in Naval Architecture with Ocean Engineering

Master of Engineering in Naval Architecture with High Performance Marine Vehicles

Bachelor of Engineering with Honours in Naval Architecture and Marine Engineering

Bachelor of Engineering with Honours in Naval Architecture with Ocean Engineering

Bachelor of Engineering with Honours in Naval Architecture with High Performance Marine Vehicles

Bachelor of Engineering in Naval Architecture and Marine Engineering

Bachelor of Engineering in Naval Architecture with Ocean Engineering

Bachelor of Engineering in Naval Architecture with High Performance Marine Vehicles

Diploma of Higher Education in Naval Architecture and Marine Engineering

Certificate of Higher Education in Naval Architecture and Marine Engineering

These regulations are to be read in conjunction with [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).

Mode of Study

1. The programmes are available by full-time study only.

Curriculum

2. **First Year** - All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
16132	Engineering Mechanics1	1	20
NM102	Introduction to Naval Architecture and Marine Engineering	1	20
NM103	Analysis Tools for Marine Design	1	20
MM111	Mathematics 1B	1	20
MM112	Mathematics 2B	1	20
	Elective Module(s)		20

3. **Second Year** - All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
NM209	Principles of Marine Design and Production	2	20

NM210	Analysis and Design of Marine Structures 1	2	20
NM211	Engineering Applications for Naval Architects and Marine Engineers	2	10
NM212	Hydrostatics and Stability of Marine Vehicles	2	20
NM213	Marine Engineering Fundamentals	2	20
NM218	Fluid Mechanics in Naval Architecture, Ocean & Marine Engineering	2	10
MM211	Mathematics 3B	2	20

4. **Third Year** - All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
NM312	Analysis and Design of Marine Structures 2	3	20
NM313	Hydrodynamics, Resistance and Propulsion	3	20
NM314	Marine Design	3	20
NM316	Marine Engineering Systems and Control	3	20
NM335	Business Concepts and International Merchant Shipping	3	10
NM323	The Marine Environment	3	10
NM327	Professional Development	3	10

together with modules appropriate to the chosen programme:

Naval Architecture and Marine Engineering

Compulsory Modules

Module Code	Module Title	Level	Credits
NM324	Principles and Application of Marine Machinery	3	10

Naval Architecture with Ocean Engineering

Compulsory Module

Module Code	Module Title	Level	Credits
NM325	Offshore Oil and Gas Production Systems	3	10

Naval Architecture with High Performance Marine Vehicles

Compulsory Module

Module Code	Module Title	Level	Credits
NM305	Yacht and Powercraft Design	3	10

5. **Fourth Year** - All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
NM423	Seakeeping and Manoeuvring	4	20
NM402	Theory and Practice of Marine CFD	4	10
21452	Finite Element Analysis of Marine Structures	4	10

together with modules appropriate to the chosen programme:

Naval Architecture and Marine Engineering

Compulsory Modules

Module Code	Module Title	Level	Credits
NM421	Marine Power and Electrical Systems	4	20
NM428	Marine Engineering Project	4	40
NM415	Marine Refrigeration and Air Conditioning	4	10
NM409	Marine Transmission and Propulsion Systems	4	10

Naval Architecture with Ocean Engineering

Compulsory Modules

Module Code	Module Title	Level	Credits
NM430	Ocean Engineering Project	4	40
NM404	Ship Structural Dynamics	4	10
NM435	Structural Reliability	4	10
NM436	Dynamics of Offshore Structures	4	20

Naval Architecture with High Performance Marine Vehicles

Compulsory Modules

Module Code	Module Title	Level	Credits
NM439	High Performance Sailing Yachts	4	10
NM437	High Speed Ships	4	10
NM440	High Performance Marine Vehicles Project	4	40
NM404	Ship Structural Dynamics	4	10
NM443	High Performance Marine Structures	4	10

6. **Fifth Year** - All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
NM502	Group Design Project	5	40
21551	The Marine Regulatory Framework	5	10
NM527	Advanced Marine Design	5	10
NM528	Maritime Safety and Risk	5	10

together with modules appropriate to the chosen programme:

Naval Architecture and Marine Engineering

Module Code	Module Title	Level	Credits
21525	Advanced Marine Engineering	5	10
NM524	On-board Energy Management and Environment Protection	5	10

Naval Architecture with Ocean Engineering

Module Code	Module Title	Level	Credits
NM513	Design and Construction of FPSO's	5	10
NM536	Physical Testing of Offshore Renewable Energy Systems	5	10

Naval Architecture with High Performance Marine Vehicles

Module Code	Module Title	Level	Credits
NM529	Ship Operability and Control	5	10
NM530	Ship Powering in Service	5	10

Optional Modules

No fewer than 30 credits chosen from:

Module Code	Module Title	Level	Credits
NM522	Renewable Marine Energy Systems	5	10
NM523	Systems Availability and Maintenance	5	10
NM532	Shipping Economics and Market Sector Analysis	5	10

And depending on the degree:

Naval Architecture and Marine Engineering

Module Code	Module Title	Level	Credits
21526	Marine Engineering Simulation & Modelling	5	10
NM533	Autonomous Marine Vehicles Modelling and Digital Twin	5	10

Naval Architecture with Ocean Engineering

Module Code	Module Title	Level	Credits
NM539	Offshore Structural Integrity	5	10
NM538	OWT Dynamics II: Aero-Hydro-Servo-Elastic Coupled Dynamics with OpenFAST	5	10

Naval Architecture with High Performance Marine Vehicles

Module Code	Module Title	Level	Credits
21518	Computational Free Surface Hydrodynamics	5	10
NM537	Dynamics of Fixed and Floating Offshore Structures	5	10

Exceptionally, such other modules as may be approved by the Programme Director.

Progress

7. In order to progress to the second year of the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply.
8. In order to progress to the third year of the programme the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply.

9. In order to progress to the fourth year of the programme the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply.
10. In order to progress to the fifth year of the chosen programme in addition to satisfying the requirements of the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) a student must also gain passes in one of the following modules: NM428 Marine Engineering Project or NM430 Ocean Engineering Project or NM440 High Performance Marine Vehicles Project as appropriate.

Final Assessment and Classification

11. The final classification for the chosen programme will normally be based on the first assessed attempt at compulsory and specified optional modules taken in the third, fourth and fifth years.

Award

12. **MEng:** In order to qualify for the award of the degree of MEng in the chosen programme the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply and must include NM502 Group Design Project and either NM428 Marine Engineering Project or NM430 Ocean Engineering Project or NM440 High Performance Marine Vehicles Project as appropriate.
13. **BEng with Honours:** In order to qualify for the award of the degree of BEng with Honours in the chosen programme the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply and must include NM428 Marine Engineering Project or NM430 Ocean Engineering Project or NM440 High Performance Marine Vehicles Project as appropriate.
14. **BEng:** In order to qualify for the award of the degree of BEng in the chosen programme the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply.
15. **Diploma of Higher Education:** In order to qualify for the award of a Diploma of Higher Education in Naval Architecture and Marine Engineering the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply.
16. **Certificate of Higher Education:** In order to qualify for the award of a Certificate of Higher Education in Naval Architecture and Marine Engineering the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply.