

# Marine Science

Postgraduate Handbook 2018

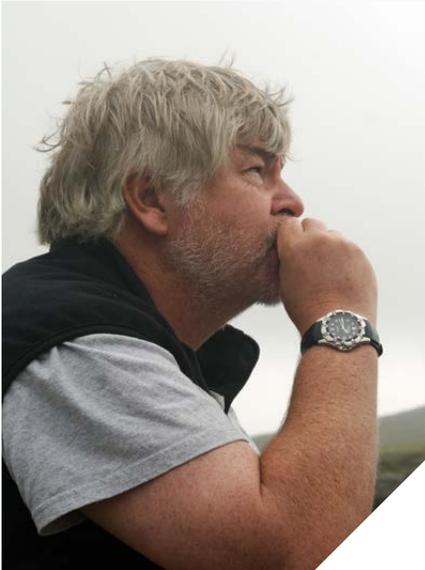


THE UNIVERSITY OF  
**AUCKLAND**  
Te Whare Wānanga o Tāmaki Makaurau  
NEW ZEALAND

**SCIENCE**  
SCHOOL OF ENVIRONMENT

# Welcome to the Institute of Marine Science

The marine environment plays an important role in many of our lives. Whether you are interested in seafood, conservation, management or contributing to the science that will influence our future, Marine Science offers you the opportunity to learn about many different facets of our coasts and oceans.



The Institute of Marine Science has an active and diverse programme of research in Marine Science.

One of the biggest changes you will find in moving from undergraduate to postgraduate study is that you have much more opportunity to define what you learn. This means you need to think more carefully about what you want to achieve and where you want to go with your degree.

If you are doing a Postgraduate Diploma in Science (specialising in Marine Science), choose your courses carefully. If you are doing a research year of a Masters in Science or a PhD, you need to think about research topics and supervisors. Do some research on possible supervisors, check our staff web pages, look at our CVs and talk to other students. And of course talk to us; we look forward to working with you.

**PROFESSOR SIMON THRUSH**  
Director Institute of Marine Science

## Why study with us?

The Institute of Marine Science provides purpose-built facilities for students undertaking their research at the Leigh Marine Laboratory.

Postgraduate students can also use facilities at NIWA research sites.

[www.marine.auckland.ac.nz/excellence](http://www.marine.auckland.ac.nz/excellence)

[www.marine.auckland.ac.nz/research](http://www.marine.auckland.ac.nz/research)



Cover photo: Cryptic sea urchin by Arie Spykisma  
(Photo taken at Nordic Reef, Leigh)

Photo: Paul Caiger (PhD, Marine Science)

# Postgraduate study options in Marine Science

Marine Science is a multi-disciplinary endeavour encompassing the physical, chemical, biological, social and economic dimensions of the marine environment.

## Postgraduate Diploma in Science (PGDipSci)

### Prerequisite

- An approved BSc, BE, or equivalent degree

### Programme structure

- 15 points: MARINE 701
- 15 points from BIOSCI 761, CHEM 795, ENVSCI 701
- 90 points from the following 700 level courses including at least two of the following subject areas: BIOSCI 724-727, 733, 738, 739, 749, CHEM 770, EARTHSCI 720, ENVMGT 742, 744, ENVSCI 702, 704, 714, FOODSCI 703, 708, GEOG 730, 746, 748, 771, MARINE 702, 703, PHYSICS 731, or other courses approved by the Programme Coordinator

*Please note: A student who is within 15 points of completing all the requirements for a BSc may, with the approval of the Head of School, enrol for the PGDipSci provided that the remaining course is completed within 12 months of entry to PGDipSci and is not a course required for the major.*

## Master of Science (MSc)

### Prerequisite

- A PGDipSci in Marine Science or equivalent

### Programme structure

- 120 points: MARINE 796 MSc Thesis in Marine Science



Photo: Paul Caiger (PhD, Marine Science).



Aerial view of Leigh Marine Laboratory. Photo credit: Peter Williams





# Doctor of Philosophy (PhD)

## Quick facts

**Points per degree:** 360 points

**Full-time study:** 3-4 years

**Part-time study:** 6-8 years

**Degree structure:** Research

**Application closing dates:** Apply at any time

**Start date:** Start at any time

For more information:

[www.science.auckland.ac.nz/phd](http://www.science.auckland.ac.nz/phd)

## Programme highlights

- Pursue independent and original research
- Work with experts in your field
- Present your work both locally and abroad

## Selection of supervisor

Students are required to select research supervisors for their MSc research thesis and PhD study in Marine Science. Please contact individual academic staff for the projects that are of interest to you. You should consult with at least 2-3 academic staff members.



**Research topics:**

[www.marine.auckland.ac.nz/research](http://www.marine.auckland.ac.nz/research)

**Find a thesis:**

[www.findathesis.auckland.ac.nz](http://www.findathesis.auckland.ac.nz)

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*"I am pursuing my PhD to improve my career prospects. I worked in the ecotoxicology area for couple of years before I started my PhD."*

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*"I really enjoy the research side of things, and all the processes involved from asking questions about nature, reading articles, creating experimental designs, performing the sampling to obtain valuable data, to final analysis of the results and the contribution toward new knowledge."*

*"The aim of my research is to develop and validate biomarkers in a New Zealand triplefin species for use in monitoring and evaluating the early response and effects of marine water pollution. I am working at molecular level and gene expression analysis, combining with histopathology to determine the medium to long-term effects of pollution (by detection of lesions or parasites). In the last chapter of my thesis, I am assessing a potential minimally invasive methodology using this triplefin fish to evaluate contaminant exposure in marine waters."*

*"The resources at University are great. There are workshops for coaching and leadership and the University also provides us with courses about statistical software, graphic design, and academic writing. I think I have taken all of them!"*

**Diana Montenegro** is studying toward a PhD in Marine Science, having completed her Bachelor of Science, Postgraduate Diploma and Master of Science in her homeland of Chile.

## Postgraduate Marine Science courses

Course code	Title	Semester
MARINE 701	Current Issues in Marine Science	S1
MARINE 702	Field Techniques in Marine Science	S1
MARINE 703	Marine Protected Areas	S2
MARINE 796A & B	MSc Thesis in Marine Science	S1 and 2
BIOSCI 724	Marine Ecology	S1
BIOSCI 725	Ecological Physiology	S1
BIOSCI 727	Aquaculture	S2
BIOSCI 733	Molecular Ecology and Evolution	S2
BIOSCI 738	Advanced Biological Data Analysis	S1
BIOSCI 739	Dialogues in Biology	S1
BIOSCI 749	Ecology of Microbial Interactions	S2
BIOSCI 761	MSc Thesis Proposal	S1 and 2
CHEM 770	Advanced Environmental Chemistry	S2
CHEM 795	Research Methods in Chemistry	S1 and 2
EARTHSCI 720	Geochemistry of Our World	S1
ENVMG 742	Social Dimensions of Global Environmental Change	S2
ENVMG 744	Resource Management	S1
ENVSCI 701	Research Practice in Environmental Science	S1
ENVSCI 702	Special Topic: Applied Estuarine Ecology	S2
ENVSCI 704	Modelling of Environmental and Social Systems	S2
ENVSCI 714	Water Quality Science	S1
FOODSCI 703	Food Processing	S1
FOODSCI 708	Advanced Food Science	S2
GEOG 730	Climate Change: Past, Present, and Future	S1
GEOG 746	Applied Coastal Geomorphology	S1
GEOG 748	Current Issues in Coastal Management	S2
GEOG 771	Spatial Analysis and Geocomputation	S2
PHYSICS 731	Wave Propagation	S1

Prerequisites apply: [www.marine.auckland.ac.nz/pg-courses](http://www.marine.auckland.ac.nz/pg-courses)



*The ambush predator northern scorpionfish (Scorpaena cardinalis) keeps an eye on blue maomao overhead.  
Photo: Paul Caiger (PhD, Marine Science).*

# Careers in Marine Science

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New Zealand has the world's fifth largest coastal exclusive economic zone. It must be managed sustainably to ensure it provides for our social and economic wellbeing. For this reason, Marine Science graduates have many opportunities to work in a variety of areas, including government, research organisations and the private sector. A specialisation in Marine Science will enable you to pursue employment opportunities here and around the world in:

- Aquaculture
- Biodiversity management
- Conservation
- Consulting
- Fisheries management
- Marine biology
- Marine education
- Pharmaceutical development
- Policy advice
- Research
- Resource planning
- Teaching

## Who would employ you?

- Crown Research Institutes (CRIs)
- Local councils
- Government departments and ministries, such as conservation, fisheries
- Museums
- Private sector, such as mussel and salmon farming
- Universities

[www.marine.auckland.ac.nz/careers](http://www.marine.auckland.ac.nz/careers)

# Helpful information

## Academic dates

[www.auckland.ac.nz/dates](http://www.auckland.ac.nz/dates)

## Accommodation

[www.accommodation.auckland.ac.nz](http://www.accommodation.auckland.ac.nz)

## Apply for postgraduate study

[www.auckland.ac.nz/applynow](http://www.auckland.ac.nz/applynow)

## Career Development and Employment Services

[www.cdes.auckland.ac.nz](http://www.cdes.auckland.ac.nz)

## Childcare

[www.auckland.ac.nz/childcare](http://www.auckland.ac.nz/childcare)

## Degree planning and course advice

[www.science.auckland.ac.nz/student-centre](http://www.science.auckland.ac.nz/student-centre)

## Disability Services

[www.disability.auckland.ac.nz](http://www.disability.auckland.ac.nz)

## How to enrol

[www.auckland.ac.nz/enrolment](http://www.auckland.ac.nz/enrolment)

## Information for postgraduate students

[www.postgraduate.ac.nz](http://www.postgraduate.ac.nz)

## International students

[www.international.auckland.ac.nz](http://www.international.auckland.ac.nz)

## Libraries and Learning Services

[www.library.auckland.ac.nz](http://www.library.auckland.ac.nz)

## Māori and Pacific students

[www.science.auckland.ac.nz/tuakana](http://www.science.auckland.ac.nz/tuakana)

## Need help?

[www.askauckland.ac.nz](http://www.askauckland.ac.nz)

## Postgraduate Students' Association

[www.pgasa.org.nz](http://www.pgasa.org.nz)

## Rainbow Science Network for LGBTI students

[www.science.auckland.ac.nz/rainbowsience](http://www.science.auckland.ac.nz/rainbowsience)

## Scholarships, awards and fees

[www.scholarships.auckland.ac.nz](http://www.scholarships.auckland.ac.nz)

[www.auckland.ac.nz/fees](http://www.auckland.ac.nz/fees)

## Support for Science students

[www.science.auckland.ac.nz/support](http://www.science.auckland.ac.nz/support)



**Questions about Marine Science?**  
[pgscience@auckland.ac.nz](mailto:pgscience@auckland.ac.nz)

### Disclaimer

Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the University of Auckland Calendar, to ensure that they are aware of and comply with all regulations, requirements and policies.



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