2017

Postgraduate course list

Biological Sciences

Te Kura Mātauranga Koiora

A kākā looks over Julia Loepelt's research at Zealandia. Photo: Judi Miller

Office Location: 5th Floor, Kirk Building, Kelburn Campus
Office Hours: Monday–Friday, 8.00am–5.00pm
Phone: 04-463 5339 or 04-463 5581 or 0800 22 77 55 (toll free)
Email: biosci@vuw.ac.nz
Website: www.victoria.ac.nz/sbs
WHO TO CONTACT

STUDENT AND ACADEMIC SERVICES—FACULTY OF SCIENCE

Te Wāhanga Pūtaiao
Address: Level 1, Cotton Building
Phone: 04-463 5101
Email: science-faculty@vuw.ac.nz
Web: www.victoria.ac.nz/science
Hours: 8.30 am–5.00pm Monday, Wednesday, Thursday, Friday
9.30 am–5.00pm Tuesday

At the Faculty of Science Student Administration Office, student advisers can help with admission requirements, degree planning, changing courses and transfer of credit from other tertiary institutions. They also deal with other aspects of student administration such as enrolment, exams organisation and the maintenance of student records.

Patricia Stein manages all postgraduate students: patricia.stein@vuw.ac.nz 04-463 5982

Johan Barnard Manager, Student and Academic Services 04-463 5980
Shona de Sain Associate Dean (Students) 04-463 5092

Email: all staff can be reached at the address firstname.lastname@vuw.ac.nz where first name and last name are as in the list below.

STAFF CONTACTS

<table>
<thead>
<tr>
<th>STAFF CONTACTS</th>
<th>ROOM</th>
<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of School</td>
<td>Prof Simon Davy</td>
<td>KK505</td>
</tr>
<tr>
<td>Deputy Head of School</td>
<td>A/Prof Kevin Burns</td>
<td>KK623</td>
</tr>
</tbody>
</table>

Postgraduate Programme Coordinators

Biomedical Science | Dr Andrew Munkacsi | AM322 | 463 5171 |

Biotechnology | Prof John Miller | AM307 | 463 6082 |

Cell and Molecular Bioscience | Dr Andrew Munkacsi | AM322 | 463 5171 |

Clinical Research | Prof Elaine Dennison | FG120 | 463 6924 |

Clinical Immunology | Prof Anne La Flamme | AM306 | 463 6093 |

Conservation Biology | A/Prof Nicola Nelson | KK621 | 463 5435 |

Drug Discovery and Development | Dr Bradley Williams | Ferrier | 463 0065 |

Ecology and Biodiversity | A/Prof Ken Ryan | KK725 | 463 6083 |

Ecological Restoration | Dr Wayne Linklater | KK617 | 463 5233 |

Marine Biology | A/Prof James Bell | KK722 | 463 8104 |

Master of Marine Conservation | A/Prof James Bell | KK722 | 463 5233 |

Molecular Microbiology | Dr Joanna MacKichan | AM304 | 463 4711 |
<table>
<thead>
<tr>
<th>ACADEMIC STAFF</th>
<th>RESEARCH AREAS</th>
<th>ROOM</th>
<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/Prof David Ackerley</td>
<td>Enzyme engineering, biochemistry</td>
<td>KK803</td>
<td>463 5576</td>
</tr>
<tr>
<td>A/Prof James Bell</td>
<td>Marine Biology, Population Genetics and</td>
<td>KK722</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td>Conservation</td>
<td></td>
<td>Ext 8104</td>
</tr>
<tr>
<td>A/Prof Kevin Burns</td>
<td>Evolutionary Ecology</td>
<td>KK623</td>
<td>463 6873</td>
</tr>
<tr>
<td>Prof Simon Davy</td>
<td>Marine Symbiosis and Coral Reef Biology</td>
<td>KK505</td>
<td>463 5573</td>
</tr>
<tr>
<td>Dr Darren Day</td>
<td>Biochemistry, Molecular Biology</td>
<td>KK802</td>
<td>463 6087</td>
</tr>
<tr>
<td>Dr Julie Deslippe</td>
<td>Plant-microbial interactions</td>
<td>KK726</td>
<td>463 6084</td>
</tr>
<tr>
<td>Prof Jonathan Gardner</td>
<td>Marine Biology, Population and seascape</td>
<td>KK805</td>
<td>463 5574</td>
</tr>
<tr>
<td></td>
<td>Genetics, Marine Reserves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof Kevin Gould</td>
<td>Plant Ecophysiology</td>
<td>KK724</td>
<td>463 6649</td>
</tr>
<tr>
<td>Dr Stephen Hartley</td>
<td>Conservation and Restoration Ecology</td>
<td>KK620</td>
<td>463 5447</td>
</tr>
<tr>
<td>A/Prof Ian Hermans</td>
<td>Vaccine Research</td>
<td>MIMR</td>
<td>903 3043</td>
</tr>
<tr>
<td>Dr Bronwyn Kivell</td>
<td>Physiology and Neurobiology</td>
<td>KK605</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8336</td>
</tr>
<tr>
<td>Prof Anne La Flamme</td>
<td>Immunology and Cell Biology</td>
<td>AM306</td>
<td>463 6093</td>
</tr>
<tr>
<td>Prof Phil Lester</td>
<td>Insect Ecology</td>
<td>KK516a</td>
<td>463 5096</td>
</tr>
<tr>
<td>Dr Wayne Linklater</td>
<td>Wildlife Biology, Human Dimensions Ecology</td>
<td>KK617</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8575</td>
</tr>
<tr>
<td>Dr Melanie McConnell</td>
<td>Genetics and Cell Biology</td>
<td>AM309</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8136</td>
</tr>
<tr>
<td>Dr Joanna MacKichan</td>
<td>Microbiology</td>
<td>AM304</td>
<td>463 4711</td>
</tr>
<tr>
<td>Prof John Miller</td>
<td>Cell Biology and Physiology</td>
<td>AM307</td>
<td>463 6082</td>
</tr>
<tr>
<td>Dr Andrew Munkacsi</td>
<td>Chemical Genetics</td>
<td>AM322</td>
<td>463 5171</td>
</tr>
<tr>
<td>A/Prof Nicola Nelson</td>
<td>Conservation Biology</td>
<td>KK621</td>
<td>463 5435</td>
</tr>
<tr>
<td>Dr Diane Ormsby</td>
<td>Reproductive and Developmental Biology</td>
<td>KK616</td>
<td>463 5271</td>
</tr>
<tr>
<td>Dr Lifeng Peng</td>
<td>Biochemistry, Molecular Biology, Proteomics</td>
<td>AM302</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8076</td>
</tr>
<tr>
<td>Dr Peter Pfeffer</td>
<td>Developmental and Reproductive Biology</td>
<td>KK615</td>
<td>463 7462</td>
</tr>
<tr>
<td>Dr Nicole Phillips</td>
<td>Marine Ecology and Larval Biology</td>
<td>KK723</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8049</td>
</tr>
<tr>
<td>Dr Janet Pitman</td>
<td>Reproductive Biology</td>
<td>KK611</td>
<td>463 7450</td>
</tr>
<tr>
<td>Dr Peter Ritchie</td>
<td>Evolutionary Genetics</td>
<td>KK622</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8105</td>
</tr>
<tr>
<td>A/Prof Ken Ryan</td>
<td>Antarctic Biology and Ecophysiology</td>
<td>KK725</td>
<td>463 6083</td>
</tr>
<tr>
<td>Prof Jeff Shima</td>
<td>Marine Biology and Fish Biology</td>
<td>KK610</td>
<td>463 6494</td>
</tr>
<tr>
<td>A/Prof Paul Teesdale-</td>
<td>Biochemistry and Pharmacology</td>
<td>AM308</td>
<td>463 6094</td>
</tr>
<tr>
<td>Spittle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr Heiko Wittmer</td>
<td>Conservation and Restoration Ecology</td>
<td>KK618</td>
<td>463 7432</td>
</tr>
<tr>
<td>A/Prof Joe Zuccarello</td>
<td>Molecular Biology and Phycology</td>
<td>KK619</td>
<td>463 6414</td>
</tr>
</tbody>
</table>
### Adjunct Staff at the Malaghan Institute of Medical Research (MIMR)

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>MIMR/Medical Research Institute/Domain</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof Graham Le Gros</td>
<td>Asthma and Parasitic Diseases</td>
<td></td>
<td>499 6914 ext 822</td>
</tr>
<tr>
<td>Director</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof Mike Berridge</td>
<td>Cancer Cell and Molecular Biology</td>
<td></td>
<td>499 6914 ext 825</td>
</tr>
<tr>
<td>Dr Elizabeth Forbes-Blom</td>
<td>Gut Inflammation</td>
<td></td>
<td>499 6914 ext 881</td>
</tr>
<tr>
<td>Prof Franca Ronchese</td>
<td>Immune Cell Biology</td>
<td></td>
<td>499 6914 ext 828</td>
</tr>
</tbody>
</table>

### Adjunct Academic Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Location/Institution</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Simon Bann</td>
<td>Oesophagogastric; Laparoscopic and Bariatric Surgeon</td>
<td>Wakefield</td>
<td>381 8120</td>
</tr>
<tr>
<td>Prof Richard Beasley</td>
<td>Clinical Research</td>
<td>MRINZ</td>
<td>805 0238</td>
</tr>
<tr>
<td>Prof Timothy Blackmore</td>
<td>Infectious Diseases Physician &amp; Microbiologist</td>
<td>CCDHB</td>
<td>918 6834</td>
</tr>
<tr>
<td>Dr Richard Carroll</td>
<td>Endocrinologist</td>
<td>CCDHB</td>
<td></td>
</tr>
<tr>
<td>Prof Brett Delahunt</td>
<td>Pathology</td>
<td>Otago</td>
<td>385 5575</td>
</tr>
<tr>
<td>Dr Sinead Donnelly</td>
<td>Palliative Medicine</td>
<td>CCDHB</td>
<td></td>
</tr>
<tr>
<td>Dr Andrew Fidler</td>
<td>Molecular and Chemical Ecology</td>
<td>Cawthron</td>
<td>539 3223</td>
</tr>
<tr>
<td>Dr Shane Geange</td>
<td>Marine Ecology</td>
<td>CCDHB</td>
<td></td>
</tr>
<tr>
<td>Prof Alexander Garden</td>
<td>Patient Safety</td>
<td>CCDHB</td>
<td></td>
</tr>
<tr>
<td>Dr Rosemary Hall</td>
<td>Endocrinology</td>
<td>CCDHB</td>
<td></td>
</tr>
<tr>
<td>Prof Scott Harding</td>
<td>Cardiology and Vascular Immunology</td>
<td>CCDHB</td>
<td>385 5999</td>
</tr>
<tr>
<td>Dr Shaun Holt</td>
<td>Evidence-Based Medicine</td>
<td>MRINZ</td>
<td>0292001111</td>
</tr>
<tr>
<td>Prof David Lamb</td>
<td>Radiation Oncology</td>
<td>Otago</td>
<td>385 5569</td>
</tr>
<tr>
<td>A/Prof Peter Larsen</td>
<td>Cardiology and Vascular Immunology</td>
<td>Otago</td>
<td></td>
</tr>
<tr>
<td>Dr Pamela Mace</td>
<td>Fisheries Science</td>
<td>MPI</td>
<td>0800 00 83 33</td>
</tr>
<tr>
<td>Dr Kyle Perrin</td>
<td>Influenza</td>
<td>MRINZ</td>
<td>805 0147</td>
</tr>
<tr>
<td>Prof Geoff Robinson</td>
<td>Alcohol &amp; Drug Abuse</td>
<td>CCDHB</td>
<td></td>
</tr>
<tr>
<td>Dr Kenneth Romeril</td>
<td>Haematology</td>
<td>CCDHB</td>
<td>381 5900</td>
</tr>
<tr>
<td>Prof Alexander Sasse</td>
<td>Cardiology &amp; Stem Cell Therapy</td>
<td>CCDHB</td>
<td>381 8115</td>
</tr>
<tr>
<td>Dr Richard Steele</td>
<td>Pathology</td>
<td>CCDHB</td>
<td>384 4944</td>
</tr>
<tr>
<td>Dr Mike Taylor</td>
<td>Microbiology of autism spectrum disorder</td>
<td>Auckland</td>
<td>923 2280</td>
</tr>
<tr>
<td>Dr Penny Truman</td>
<td>Cell Biology</td>
<td>ESR</td>
<td>914 0761</td>
</tr>
<tr>
<td>Dr Erik van Eyndhoven</td>
<td>Biodiversity Advice</td>
<td>MPI</td>
<td>0800 00 83 33</td>
</tr>
<tr>
<td>Dr Murray Williams</td>
<td>Ornithology, Conservation Restoration</td>
<td>KK418</td>
<td>463 6089</td>
</tr>
</tbody>
</table>

### Emeritus Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Daugherty</td>
<td>Conservation biology</td>
<td>KK419</td>
</tr>
<tr>
<td>Phil Garnock-Jones</td>
<td>Plant Taxonomy, Phylogeny &amp; Evolution</td>
<td>KK811</td>
</tr>
<tr>
<td>Ken McNatty</td>
<td>Reproductive Biology</td>
<td>KK419</td>
</tr>
<tr>
<td>John Wells</td>
<td>Taxonomy of Copepoda</td>
<td>KK419</td>
</tr>
</tbody>
</table>
### Administrative Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Office</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesley Thompson</td>
<td>School Manager</td>
<td>KK506</td>
<td>463 5332</td>
</tr>
<tr>
<td>Charlotte Ansell</td>
<td>Administrator</td>
<td>KK507</td>
<td>463 5207</td>
</tr>
<tr>
<td>Paul Marsden</td>
<td>Administrator</td>
<td>KK516</td>
<td>463 5555</td>
</tr>
<tr>
<td>Mary Murray</td>
<td>Administrator</td>
<td>KK507</td>
<td>463 5339</td>
</tr>
<tr>
<td>Mark Stephen</td>
<td>Administrator</td>
<td>KK516</td>
<td>463 5581</td>
</tr>
<tr>
<td>Sandra Taylor</td>
<td>Administrator</td>
<td>KK507</td>
<td>463 5747</td>
</tr>
</tbody>
</table>

### Technical Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Office</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Stephen Meyer</td>
<td>Manager Technical Services</td>
<td>KK503</td>
<td>463 5579</td>
</tr>
<tr>
<td>Sushila Pillai</td>
<td>Teaching Technician Coordinator</td>
<td>KK420</td>
<td>463 5580</td>
</tr>
<tr>
<td>Craig Doney</td>
<td>Equipment Officer</td>
<td>KK404</td>
<td>463 4707</td>
</tr>
<tr>
<td>Dan Crossett</td>
<td>Technical Officer - VUCEL</td>
<td>VUCEL101</td>
<td>470 9257</td>
</tr>
<tr>
<td>Angela Fleming</td>
<td>Technical Officer</td>
<td>KK704</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8240</td>
</tr>
<tr>
<td>Shaun Graham</td>
<td>Equipment Officer</td>
<td>KK415</td>
<td>463 5154</td>
</tr>
<tr>
<td>Derek Heath</td>
<td>Technical Officer</td>
<td>KK420</td>
<td>463 5580</td>
</tr>
<tr>
<td>Pisana Rawson</td>
<td>Technical Officer</td>
<td>KK420</td>
<td>463 5580</td>
</tr>
<tr>
<td>Neville Higgison</td>
<td>Equipment Officer</td>
<td>KK415</td>
<td>463 5154</td>
</tr>
<tr>
<td>Jennifer Howe</td>
<td>Technical Officer</td>
<td>KK704</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8240</td>
</tr>
<tr>
<td>Sue Keall</td>
<td>Senior Technical Officer</td>
<td>KK514</td>
<td>463 5324</td>
</tr>
<tr>
<td>TBC</td>
<td>Equipment Officer</td>
<td>KK404</td>
<td></td>
</tr>
<tr>
<td>Danyl McLauchlan</td>
<td>Computational Biologist</td>
<td>AM301</td>
<td>463 5735</td>
</tr>
<tr>
<td>Daniel McNaughtan</td>
<td>Technical Officer - VUCEL</td>
<td>VUCEL101</td>
<td>470 9257</td>
</tr>
<tr>
<td>Dr Lesley Milicich</td>
<td>Technical Officer</td>
<td>KK514</td>
<td>463 5233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 5324</td>
</tr>
<tr>
<td>Adrian Pike</td>
<td>Technical Officer</td>
<td>KK420</td>
<td>463 5580</td>
</tr>
<tr>
<td>Sushila Pillai</td>
<td>Technical Officer</td>
<td>KK420</td>
<td>463 5580</td>
</tr>
<tr>
<td>John van der Sman</td>
<td>Technical Officer - VUCEL</td>
<td>VUCEL101</td>
<td>470 9250</td>
</tr>
<tr>
<td>Chris Thorn</td>
<td>Technical Officer</td>
<td>KK704</td>
<td>4635233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ext 8240</td>
</tr>
</tbody>
</table>
QUALIFICATIONS AVAILABLE

The diagram below represents the structure of postgraduate study in science.

- 3-year BSc/BBmedSc
- 1–2 year GDipSc
- 1-year Honours/PGDip/
  Master's Part 1
- 1-year Master's
  Part 2
- 3–4 year PhD

The School of Biological Sciences offer’s postgraduate degrees at Honours, Master’s and PhD levels, as well as graduate and postgraduate certificates and diplomas.

The PhD is the highest degree offered by the School of Biological Sciences. The Faculty of Graduate Research is the initial contact point for all PhD students. Please visit http://www.victoria.ac.nz/fgr for all queries, including available funding, the role of a supervisor and the application process.

ENROLLING IN POSTGRADUATE STUDY WITH SBS

Read the course list and visit www.victoria.ac.nz/sbs/, and then discuss your interests and options with staff members in the disciplines you’re interested in. They’ll suggest research topics if applicable (or you can discuss your own ideas with them) and advise you on the courses you should consider taking. Then complete the form at the back of the postgraduate prospectus and hand it to the postgraduate advisor for your subject. **This process is not a substitute for formal pre-enrolment, but we’ll notify you if you are provisionally accepted before you have to confirm your enrolment.**

It is recommended that students plan early as some programmes, for example Ecology and Biodiversity and Marine Biology, have summer fieldwork or have seasonal requirements.

Please note also that two of the taught master’s courses (MConBio and MMarCon), require participation in a field course (BIOL 424). This course runs in January and intending students must enrol by 15 October for study the following January.
YOUR POSTGRADUATE STUDY OPTIONS

DIPLOMAS AND CERTIFICATES

The School offers a Graduate Diploma in Science (GDipSc), Postgraduate Certificates in Science (PGCertSc), Drug Discovery and Development (PGCertDDD) and Marine Conservation (PGCertMarCon), and Postgraduate Diplomas in Science (PGDipSc), Biomedical Science (PGDipBmedSc), Clinical Research (PGDipClinRes) and Drug Discovery and Development (PGDipDDD).

POSTGRADUATE CERTIFICATE IN SCIENCE

This is a postgraduate programme that can permit the completion of postgraduate study in a focused area within an achievable timeframe while in full-time work or managing other commitments. The PGCertSc can also provide an earlier exit point from an MSc or BSc(Hons) programme.

The PGCertSc:

- one trimester fulltime or up to two years part-time
- usually consists of all course work (60 points) at PG level
- usually requires a B grade average in related 300-level subjects for admission
- is endorsed in a subject offered for the MSc degree
- can lead to a PGDipSc with 60 further approved points.

POSTGRADUATE DIPLOMA IN SCIENCE

This is a one-year postgraduate programme. The PGDipSc provides an alternative path of postgraduate study for students wanting a coursework postgraduate qualification or for those not admitted to the BSc(Hons) or MSc Part 1 and for those who are not permitted to progress to Part 2 of the MSc but have passed an appropriate 120 points at postgraduate level.

The programme:

- one year fulltime or up to four years part-time
- usually consists of all course work (120 points) at PG level
- usually requires a B grade average in related 300-level subjects for admission
- is endorsed in a subject offered for the MSc degree
- may permit admission to an MSc by research if achieved at a high academic level.

HONOURS AND MASTER’S

HONOURS

The degree is normally undertaken over two semesters and involves 120 points of study, 30 of which come from a research project and requires submission of a thesis.

Prerequisites: An undergraduate degree in the chosen field, with a B+ grade average in relevant 300-level courses.
The school offers programmes as part of the BSc(Hons) with majors in Biotechnology, Cell and Molecular Bioscience, Conservation Biology, Ecology and Biodiversity, Marine Biology and Molecular Microbiology, and a specialist Honours programme in Biomedical Science.

RESEARCH MASTER’S

The degree is normally undertaken over two years (Part 1 and 2). Part 1 involves three courses worth equal marks, plus a research preparation course. Part 2 is full time research. **Prerequisite:** An undergraduate degree in the chosen field, with a B+ grade average in relevant 300-level courses.

Entry to Part 2 is dependent on performance in Part 1. Students with an existing qualification equivalent to Honours may enter directly into Part 2. Under these circumstances the Master’s degree is graded Pass, Merit or Distinction and is awarded without Honours. You must have a thesis topic and an agreed supervisor before you can enrol.

TAUGHT MASTER’S

These degrees are normally undertaken over one calendar year and are designed to provide a professional focus in a variety of subject areas including Master of Clinical Immunology (MClinIm), Master of Conservation Biology (MConBio), Master of Drug Discovery and Development (MDDD) and Master of Marine Conservation (MMarCon).

**Prerequisite:** An undergraduate degree in the chosen field, with a B+ grade average in relevant 300-level courses.

SUBSTITUTION OF COURSES

It is possible to substitute **optional** courses in graduate programmes with courses from other subjects offered at graduate/postgraduate level within the following restrictions: points for the substituted courses are not more than half of those required for the programme; substitute courses are complementary and relevant to the programme; and that no regulations of the Victoria Calendar are broken in so doing. Permission of the Head of School is needed for substitution of courses.
BIOMEDICAL SCIENCE

Entry requirements:
- The requirement for acceptance is to have satisfied the requirements of at least one specialisation of the BBmedSc undergraduate degree, or equivalent. For honours, students must have a B+ grade average in relevant 300-level courses.

BACHELOR OF BIOMEDICAL SCIENCE WITH HONOURS

The degree is normally undertaken over two semesters and involves 90 points worth of courses and a 30-point research project.

Course requirements:
- 30 points chosen from BMSC 401–406; CLNR 413, 414
- 60 points chosen from BMSC 401–499; CLNR 410, 413, 414
- a research project (BMSC 489).

MASTER OF BIOMEDICAL SCIENCE

Part 1 consists of:
- 30 points chosen from BMSC 401–406, CLNR 413, 414.
- 60 points chosen from BIOL 430-432, BMSC 401-499, CLNR 410, 413, 414
- BMSC 580 Research Preparation.

Part 2:
- BMSC 591 (thesis)

The Master’s degree in Biomedical Science Part 2 involves a year of full-time work on a research topic in biomedical science. Students must have the equivalent of a BBmedSc(Hons) degree with research experience before enrolling in the programme. Research areas are listed under individual staff interests, and enrolment is only possible after an academic staff member has agreed to act as primary supervisor for the student.

POSTGRADUATE DIPLOMA IN BIOMEDICAL SCIENCE

Before enrolment, a candidate shall have completed a BBmedSc degree or equivalent Bachelor's degree. The personal course of study shall consist of 120 points from BMSC 401–489, CLNR 410 including 30 points from BMSC 401–406, CLNR 413, 414.
BIOTECHNOLOGY

Entry requirements:
- BTEC 301, SCIE 310
- At least 35 points from BMSC 301, BIOL/BMSC 334–354, CHEM 305 or 306 (or equivalent courses subject to approval)
- For honours, the minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

BIOTECHNOLOGY FOR BSC WITH HONOURS

Course requirements:
- BTEC 489, 435
- 75 points from courses BTEC 401–479, BIOL, CHEM or MBIO 400–480 to include at least 15 points from BTEC 401–479
- BTEC 436 strongly recommended.

Substitution of up to two courses from the BSc(Hons) schedule may be made with approval from the Head of School.

BIOTECHNOLOGY FOR MSC

Part 1 consists of:
- BTEC 580, 435
- 75 points from courses BTEC 401–479, BIOL, CHEM or MBIO 400–480 to include at least 15 points from BTEC 401–479.

Part 2:
- BTEC 591 (thesis)

BIOTECHNOLOGY FOR PGDIPSC

The personal course of study shall consist of 120 points from BTEC 401–488, BIOL, CHEM or MBIO 400–480, to include at least 30 points from BTEC 401–479.
CELL AND MOLECULAR BIOSCIENCE

Entry requirements:
- BIOL/BMSC 339, 340
- 40 points from BMSC 301, BIOL/BMSC 329–354.

For Honours, the minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

CELL AND MOLECULAR BIOSCIENCE FOR BSC WITH HONOURS

Course requirements:
- CBIO 489
- 90 points in an approved combination from BIOL 430–440, BMSC 433.

CELL AND MOLECULAR BIOSCIENCE FOR MSC

Part 1 consists of:
- CBIO 580
- 90 points in an approved combination from BIOL 430–440, BMSC 433.

Part 2:
- CBIO 591 (thesis)

CELL AND MOLECULAR BIOSCIENCE FOR PGDIPSC

The personal course of study shall consist of 120 points from BIOL 430–440, BMSC 433.

CELL AND MOLECULAR BIOSCIENCE FOR PGCERTSC

60 points from BIOL 430-440, BMSC 433, CBIO 489, 580
Postgraduate course list 2017

CLINICAL IMMUNOLOGY

Entry requirements:
- A Bachelor of Biomedical Science (BBmedSc degree) with a major in Molecular Pathology or an equivalent qualification, with a B grade average or better in the relevant coursework; and
- Acceptance by the Head of School of Biological Sciences as capable of proceeding with the proposed course of study.

MASTER OF CLINICAL IMMUNOLOGY

The Master of Clinical Immunology (MClinIm) is a one-year (full-time) taught Master’s programme which combines advanced immunological theory, biostatistics, clinical practice and the opportunity to undertake an individual research project in immunology. Students will be equipped with the skills required to assess, analyse and undertake clinical research in immunology.

While based at Victoria University of Wellington, the programme is delivered by staff at Victoria, the Malaghan Institute of Medical Research, Capital and Coast District Health Board and the Hutt Valley District Health Board.

Students start in Trimester One. Standard trimester closing dates apply.

Part 1 consists of: CLNR 401, 403, 410, 413, 414; 30 points from CLNR 411, 412 or other approved electives.

Part 2: CLNR 510, 511

CLINICAL RESEARCH

Entry requirements:
- All students must apply to be accepted by the Programme Director.
- Those entering the PGDipClinRes will need to have completed a relevant degree in health, medicine, neuroscience, psychology, biomedical science or biostatistics or equivalent (typically with a B+ average in relevant subjects) or demonstrate extensive relevant experience in the field.
- The Master’s programme is by thesis only and requires completion of the PGDipClinRes or equivalent. Students with extensive relevant experience directly relevant to the area of their proposed thesis study may also be considered.

POSTGRADUATE DIPLOMA IN CLINICAL RESEARCH

The Postgraduate Diploma in Clinical Research (PGDipClinRes) is a distance taught diploma. It is ideal for people already working in clinical research, or who would like to work in clinical research. It prepares students for undertaking clinical research projects in a professional setting and covers research ethics, statistics, and clinical trial design. The diploma is part of a collaboration with Capital and Coast District Health Board and other medical organisations in the Wellington area, and the teaching staff includes clinicians.
It is offered part time and can be completed over a total of up to four years and consists of all course work (120 points). Students must have a relevant bachelor’s degree and/or professional experience for admission.

Course requirements:
- CLNR 401, 402, 403, 404, 405, 580

MASTER OF CLINICAL RESEARCH

The Master of Clinical Research (MClinRes) is a Master’s by thesis rather than a taught Master’s. Many applicants may choose to undertake this part-time at their place of residence, allowing them to continue work commitments. However, it is important that a potential project and local supervisor have been identified if this route is pursued. An applicant who wishes to relocate to Wellington is invited to discuss potential research projects with the Programme Director. The MClinRes will in many cases lead to an application to undertake a PhD in clinical research.

Course requirements:
- CLNR 591 (thesis)
CONSERVATION BIOLOGY

Entry requirements:

- 60 points in approved BIOL courses numbered 300-399, STAT 193 or equivalent. The minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

CONSERVATION BIOLOGY FOR BSC WITH HONOURS

Course requirements:

- BIOL 420
- 60 points in an approved combination from BIOL 403, 404, 421–424
- Research project (CONB 489)

With permission of the Head of School an approved course may be substituted for one of BIOL 403, 422–42, 519, 529.

CONSERVATION BIOLOGY FOR PGDIPSC

Course requirements:

- BIOL 420
- 90 points from BIOL 401–440, 519, ERES 525–527 or other approved courses.

MASTER OF CONSERVATION BIOLOGY

The Master of Conservation Biology (MConBio) programme is a professional one year Master’s drawing on scientific expertise and its application to conservation throughout New Zealand. The programme is 180 points of study, including three core courses and 90 points of electives within an approved programme of study.

The January/February start to the programme begins with a four-week field course, *New Zealand Conservation Practice* (BIOL 424). Upon return to Wellington, students conduct critical analyses of key management issues, and take two seminar-style courses; *Conservation Ecology* (BIOL 420) and an approved elective. The July start to the programme includes a field based course, *Invasive Species, Biosecurity and the Law* (BIOL 425), and two approved electives. There is potential to include an international post-graduate exchange. There is no thesis component to the MConBio.

Entry requirements:

A Bachelor’s degree in a biological or other relevant discipline with a B+ average in relevant 300-level courses, or approval of the Associate Dean (Students).

Course requirements:

BIOL 405, 420, 424 and 90 points from BIOL 401–440, 510–530, ENVI 505, ERES 525–527 or other courses approved by the Head of School.

Application deadline: October 15 in the year prior for studies starting in January, and normal university enrolment dates for a July start.
**DRUG DISCOVERY AND DEVELOPMENT**

Research in drug discovery and development enables the identification of new drug targets and therapeutics. Postgraduate programmes in Drug Discovery and Development programmes are offered in collaboration between the Centre for Biodiscovery, the Ferrier Research Institute and the Schools of Biological Sciences and Chemical and Physical Sciences.

These programmes (Postgraduate Certificate, Postgraduate Diploma and Master’s) operate on the interface between the fields of chemistry and biological sciences, drawing on the research expertise of the Ferrier Research Institute in drug design and development and on expertise from the Centre for Biodiscovery in the discovery and design of bioactive compounds and the determination of their modes of action.

Students will be provided with a programme of study tailored to their personal skills and interests, with flexibility being offered by the opportunity to undertake directed individual study courses. It uses a mix of academic and practical skills, and is closely aligned to the needs of pharmaceutical industry in the areas of drug design and development, including bioanalytical, chemical and related industries, nutraceuticals and agrichemicals.

For more information see [www.victoria.ac.nz/scps/study/postgraduate-study/drug-discovery-and-development](http://www.victoria.ac.nz/scps/study/postgraduate-study/drug-discovery-and-development) or contact Dr Simon Hinkley, Programme Director [simon.hinkley@vuw.ac.nz](mailto:simon.hinkley@vuw.ac.nz) 04-463 0065

**Entry requirements:** A Bachelor’s degree in a biological or other relevant discipline or approval of the Associate Dean (Students).

**POSTGRADUATE CERTIFICATE IN DRUG DISCOVERY AND DEVELOPMENT**

The personal course of study shall consist of 60 points including:

- DRDG 401; one of CHEM 421, DRDG 402
- a further 30 points from BMSC 400-441, BTEC 435-441, CHEM 400-441, CLNR 401-405, DRGD 402-403, MBIO 434-440

**POSTGRADUATE DIPLOMA IN DRUG DISCOVERY AND DEVELOPMENT**

The personal course of study shall consist of 120 points including:

- DRDG 401; one of CHEM 421, DRDG 402
- a further 60 points from BMSC 400-441, BTEC 435-441, CHEM 400-441, CLNR 401-405, DRGD 402-403, MBIO 434-440
- DRDG 580

**MASTER OF DRUG DISCOVERY AND DEVELOPMENT**

The Master of Drug Discovery and Development (MDDD) is a one-year (full-time) 180-point Master’s programme that includes a 60-point research project.

**Part 1 consists of:**

- DRDG 401; one of CHEM 421, DRDG 402
- a further 30 points from BMSC 400-441, BTEC 435-441, CHEM 400-441, CLNR 401-405, DRGD 402-403, MBIO 434-440
Postgraduate course list 2017

- DRDG 580

Part 2:
- DRGD 561 or 590

The MDDD may be endorsed with one of the following specialisations:

**Drug Development**: DRGD 401, 402 and 403

**Drug Discovery**: DRGD 401; one of DRGD 402 or CHEM 421; 15 further points from DRGD 402, CHEM 421, BMSC 432, BTEC 435, MBIO 401

**Chemical Biology**: DRGD 401, CHEM 421; 15 further points from BMSC 405, 430–433, CHEM 424–425

The option of a thesis is available for suitably qualified students. Students may replace DRGD 580 or 590 with DRGD 595 (Research Thesis) with permission from the Programme Director.
ECOLOGICAL RESTORATION

Entry requirements:
- 60 points in approved BIOL courses numbered 300-399 and STAT 193 or equivalent. The minimum internal requirement for acceptance for both MSc and PGDipSc is a B+ grade average in relevant 300-level courses.

ECOLOGICAL RESTORATION FOR MSC

The Master of Science in Ecological Restoration is a two year programme. For part 1 there are two compulsory courses (ERES 525 and 580) and two other approved courses. Part 2 consists of a research thesis (ERES 591).

Part 1 consists of:
- ERES 525, 526, 580
- 30 points in an approved combination from BIOL 403, 404, 421–440, 519, ENVI 503–529 or other courses approved by the Head of School.

Part 2:
- ERES 591 (thesis)

ECOLOGICAL RESTORATION FOR PGDIPSC

Course requirements:
- ERES 525, 526
- 60 points in an approved combination from BIOL 403, 404, 421–440, ENVI 503–508, ERES 526 or other courses approved by the Head of School.
ECOLOGY AND BIODIVERSITY

Entry requirements:

- 60 points in approved BIOL courses numbered 300-399; STAT 193 or equivalent. The minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

ECOLOGY AND BIODIVERSITY FOR BSC WITH HONOURS

Course requirements:

- EBIO 489, BIOL 403, 422
- 30 points from BIOL 420, 423, 405, 436, 519.

With permission of the Head of School, one of BIOL 427, 428, 430, 440 may be substituted for one course from the second bullet-point above.

ECOLOGY AND BIODIVERSITY FOR MSC

Part 1 consists of:

- BIOL 422 or 405, 580
- 60 points from BIOL 401–440, 519, ERES 525–527 or other approved courses.

Part 2:

- EBIO 591 (thesis)

ECOLOGY AND BIODIVERSITY FOR PGDIPSC

BIOL 422 or 425; 90 points from BIOL 401–440, 519, ERES 525–527 or other approved courses.
MARINE BIOLOGY

Entry requirements:

- 60 points in approved BIOL courses numbered 300-399, STAT 193 or equivalent.
- The minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

MARINE BIOLOGY FOR BSC WITH HONOURS

Course requirements:

- BIOL 422, 423, BMAR 489
- 30 points from (BIOL 403, 410, 416, 417, 420, 421, 405, 436, 519)

MARINE BIOLOGY FOR MSC

Part 1 consists of:

- BIOL 423, 580
- 60 points from BIOL 401–440, 519, ERES 525–529 or other approved courses

Part 2:

- BMAR 591 (thesis)

MARINE BIOLOGY FOR PGDIPSC

Course requirements:

- BIOL 423 and 90 points from BIOL 401–440, 519, ERES 525–527 or other approved courses
MARINE CONSERVATION

Entry requirements:
- 60 points in approved BIOL courses numbered 300-399, STAT 193 or equivalent.
- The minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

MASTER OF MARINE CONSERVATION

The Master of Marine Conservation (MMarCon) is a 12-month 180 point taught professional degree, which can be started in either January or June.

Part 1 (January-June) consists of:
- BIOL 424
- 60 further points from the MMarCon Schedule (e.g. BIOL 416, 417, 405, 420, 422, 423, 436 ERES 526, ENVI 505, MAOR 411)

Part 2 (June-December):
- BIOL 519 and 529,
- 30 further points from the MMarCon Schedule (e.g. BIOL 403, 410, 440, BMAR 580, ERES 526, ENVI 506, MAOR 409, PASI 402–403)

The Trimester 1 start to the programme begins with a four-week field course in January/February, New Zealand Conservation Practice (BIOL 424). Upon return to Wellington, students conduct critical analyses of key management issues, and take two seminar-style courses.

Application deadline: October 15 in the year prior for studies starting in Trimester 1, and March 1 for studies starting in Trimester 2.

POSTGRADUATE CERTIFICATE IN MARINE CONSERVATION

The 90-point certificate consists of courses chosen from the Master of Marine Conservation schedule, and includes at least one of BIOL 424, 519 and 529. The certificate is usually completed in six months (full-time) or twelve months (part-time).
MOLECULAR MICROBIOLOGY

Molecular Microbiology is at the forefront of developments in the biosciences. It addresses some of the most pressing biological needs of mankind including the discovery of new medicines to prevent and treat infectious diseases. It examines microbes at the cellular and community levels in a range of environments including humans. It aims to define the molecular basis for important processes such as host-pathogen interactions, antibiotic resistance, and cell-cell communication. Whole genome sequencing has facilitated the identification of stages in the life cycle of microbes that can be targeted with respect to advancing human health or biotechnologies. The School of Biological Sciences, together with its partner research institutes, offers BSc(Hons), MSc and PhD degrees in Molecular Microbiology.

Entry requirements:

- BIOL 340, BMSC 301, BTEC 201
- 20 points from BIOL 236, BMSC 334, BTEC 301, or equivalent

For honours, the minimum internal requirement for acceptance is a B+ grade average in relevant 300-level courses.

MOLECULAR MICROBIOLOGY FOR BSC WITH HONOURS

Course requirements:

- BIOL 430, MBIO 434, 489
- 30 points from (BIOL 400–429, 431–439, MBIO 440)

Substitution of up to two optional courses from the BSc(Hons) schedule may be made with approval from the Head of School.

MOLECULAR MICROBIOLOGY FOR MSC

Part 1 consists of:

- BIOL 430, MBIO 434, 580
- 30 points from BIOL 400–429, 431–439, MBIO 440

Substitution of up to two optional courses from the BSc(Hons) schedule may be made with approval from the Head of School.

Part 2:

- MBIO 591 (thesis)
**400 – 500 LEVEL COURSES**

The following courses are available for study of Cell and Molecular Bioscience, Ecology and Biodiversity, Marine Biology, and may be applicable to students planning programmes in the subject areas listed from page 26.

### Course information index

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course reference number</th>
<th>Title</th>
<th>Points</th>
<th>Trimester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 403</td>
<td>CRN 588</td>
<td>EVOLUTION</td>
<td>30 PTS</td>
<td>2/3</td>
</tr>
</tbody>
</table>

**BIOL 403 CRN 588 EVOLUTION 30 PTS 2/3**

**Prerequisite:** BIOL 329 or permission of the Head of School

**Coordinators:** Dr Peter Ritchie, A/Prof Joe Zuccarello

The course focuses on the fundamental ideas in evolution reconstruction. There is focus on both the theory and the practice of evolutionary biology, with an emphasis on DNA sequence analysis and using these types of data to interpret the patterns and processes of evolution.

**BIOL 405 CRN 13573 INVASIVE SPECIES, BIOSECURITY AND LAW 30 PTS 2/3**

**Prerequisite:** 45 points from an approved combination of 300-level EBIO, BMAR, BIOL, or LAWS courses, or permission of Head of School.

**Coordinator:** Prof Phil Lester and Prof Suzy Frankel (School of Law)

This course will encompass biosecurity management from both biological and legal perspectives, including relevant statutes and key international agreements and related dispute settlement processes. Students in this course will study both national and international law regulating invasive species and biosecurity management. The course will include recent case studies and Maori perspectives on biodiversity and biosecurity.

**Subject to approval for 2017**

**BIOL 410 CRN 27047 FISHERIES SCIENCE 30 PTS 2/3**

**Prerequisite:** 30 points of statistics at 200-level or above, or permission of Head of School

**Coordinators:** TBA

Underlying principles and techniques used in fisheries science. Topics include population responses to exploitation, collection of fish biology and fishery data, statistical data analysis and population models, and the application of science in resource management. The course is interdisciplinary, with a focus on putting theory into practice.

**Not offered in 2017**
This course explores the biology of isolated landmasses. The primary focus of the course is a field trip to Lord Howe Island (LHI). First, students will learn the ecological principles that shape the evolution of island biotas in readings and pre-recorded lectures prior to the field trip. Next, students will travel to LHI for a week to conduct a range of field exercises that reinforce concepts that were covered previously readings and lectures. Students will also explore the specific conservation issues facing LHI and how they relate to the challenges that will likely face New Zealand in the future.

An advanced course in the development of practical skills in research design, implementation and analysis in Marine Science. Students will participate in two field components: one compulsory unit based at Victoria University, the other unit to be chosen from those offered by Otago or Auckland Universities. Each field course is one week in duration and is scheduled out of normal teaching time. Students wishing to take this course should contact the course coordinator (jonathan.gardner@vuw.ac.nz) in early December 2016 for more details and to confirm their interest.

A seminar-based examination of selected current issues in marine science. Seminars will be jointly run using the KAREN computer network link between the Universities of Auckland, Otago and Victoria. The topics and material will recognise the wide range of experience of the participants and emphasise the value of cross-disciplinary approaches to marine science (not just marine biology).

Ecological theory, principles and practice relating to biological conservation. A selection of prescribed and optional ecological topics in conservation including island biogeography and nature reserves, sex and mating systems, species harvesting and utilisation, determining
priorities, invasion risk and ecosystem threats, conservation genetics, landscape and urban ecology, ecological evaluation and services, species ecology, management and conservation.

**BIOL 422 CRN 9586 ECOLOGY 30 PTS 1/3**

Prerequisite: 300-level Ecology or permission of the Head of School
Coordinator: Dr Nicole Phillips

In this course we will evaluate how foundational ecological ideas/concepts have originated and changed over time, and obtain an appreciation for some of the innovative approaches that researchers today are applying to address long-standing (i.e. "classic") ideas/questions in ecology. We integrate material across a variety of disciplines and systems.

**BIOL 423 CRN 9587 MARINE BIOLOGY 30 PTS 1/3**

Coordinators: A/Prof Ken Ryan

Discussion and critical evaluation of current research topics in marine biology, including marine diversity and ecology, and the physiology of marine organisms.

**BIOL 424 CRN 9629 NEW ZEALAND CONSERVATION PRACTICE 30 PTS NS**

Prerequisite: 300-level Ecology or permission of the Head of School
Coordinator: A/Prof Nicola Nelson

A practical and field based course in New Zealand’s terrestrial and marine flora and fauna and its conservation. In consultation with professional, governmental and nongovernmental organisations we aim to provide an understanding of the practical processes of conservation biology in New Zealand. The course will focus around field trips in late January–February to different conservation sites around New Zealand. The topics we cover will include the role of the Treaty of Waitangi in New Zealand conservation, invasive species, endangered species, commercial use of conservation resources, land use issues, mainland islands and island conservation.

There is a course charge to pay for expenses incurred in the field. This covers transport, accommodation, food etc. Please notify Dr Nelson as early as possible if you are interested.

**Applications close 15 October 2016 for enrolment in this course.**

**BIOL 430 CRN 9228 GENETICS AND MOLECULAR BIOLOGY 30 PTS 2/3**

Prerequisite: 45 points from approved combination of 300-level BIOL, BMSC, CHEM, PSYC courses or permission of Head of School
Approved courses to include at least 20 points from BIOL 340, BMSC 343. All 45 points to be achieved at B grade or above.
Restriction: BMSC 430
Coordinator: Dr Melanie McConnell

An in-depth review of research and modern concepts in heredity, genomics, gene regulation, and molecular biology.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 431</td>
<td>CRN 9229</td>
<td>CELL BIOLOGY</td>
<td>30</td>
<td>2/3</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>45 points from approved combination of 300-level BIOL, BMSC, CHEM, PSYC courses or permission of Head of School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved courses to include at least 20 points from BIOL 340, BMSC 343. All 45 points to be achieved at B grade or above.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restriction:</td>
<td>BMSC 431</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator:</td>
<td>Dr Janet Pitman</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Advances in cellular processing, function and architecture, including aspects of developmental biology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 432</td>
<td>CRN 9230</td>
<td>PHYSIOLOGY AND PHARMACOLOGY</td>
<td>30</td>
<td>1/3</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>45 points from approved combination of 300-level BIOL, BMSC, CHEM, PSYC courses or permission of Head of School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved courses to include at least 20 points from BIOL 340, BMSC 343. All 45 points to be achieved at B grade or above.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restriction:</td>
<td>BMSC 432</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinators:</td>
<td>Prof John Miller, A/Prof Paul Teesdale-Spittle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Advances in physiological and pharmacological sciences at the molecular, cellular and organismal levels, including integrative physiology of organ systems, the mechanics of drug interactions with biological systems, pharmacokinetics and the structural design, targeting and biological reactivity of molecular probes and drugs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 436</td>
<td>10771</td>
<td>SPECIAL TOPIC: PLANT-ENVIRONMENT</td>
<td>30</td>
<td>1/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTERACTIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>BIOL 325 or permission of the Head of School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator:</td>
<td>Prof Kevin Gould</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This ‘special topics’ course focuses on the mechanisms through which plants detect, respond and acclimate to environmental pressures, and the effects of anthropogenic activities on these processes. Through guided enquiry, students will explore the effects of climate change, altered land use, and pollution on plant function.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 440</td>
<td></td>
<td>DIRECTED INDIVIDUAL STUDY</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A supervised programme of study approved by the Head of School. If interested in taking this course, in the first instance you are advised to contact the graduate programme coordinator in the subject area you are interested in. There are no formal prerequisites for this course which is available for all trimesters: permission must be obtained from the Head of School.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 519</td>
<td>CRN 15159</td>
<td>PRINCIPLES OF MARINE CONSERVATION</td>
<td>30</td>
<td>2/3</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td>60 points from 300-level marine biology, ecology or environmental studies or permission of the Head of the School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator:</td>
<td>A/Prof James Bell</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This course focuses on the underlying principles of marine conservation and management. Topics may include: population and extinction risks; coastal dynamics; marine chemistry and pollution; exploitation of marine bio-resources, including fisheries ecology; bio-invasions and disease; global climate change; marine reserve ecology; and scenario planning.
BIOL 529  CRN 15160  TROPICAL MARINE CONSERVATION PRACTICE  30 PTS  2/3

Prerequisite: Enrolment in PGCertMarCon, MMarCon or MSc in Marine Biology or permission of the Head of School.
Coordinator: Prof Simon Davy

Students should notify the course coordinator of their intention to enrol by 1 March 2016.

An examination of conservation issues and practices in tropical coastal environments, with particular emphasis on coral reefs, mangroves and seagrasses. This two-week field course provides practical experience of identifying, monitoring and managing impacts on tropical marine ecosystems. The course will be taught in Indonesia in 2016.

Please note: there are additional field trip costs for this course.

BIOL 489  CRN 3201  RESEARCH PROJECT  30 PTS
BMAR 489  CRN 9579  RESEARCH PROJECT  30 PTS
EBIO 489  CRN 9580  RESEARCH PROJECT  30 PTS

A research project on a topic approved by the Head of School. There are multiple offerings of these courses throughout the academic year, please contact the postgraduate coordinator to discuss your options.

BIOL 580  CRN 9580  RESEARCH PREPARATION  30 PTS
CBIO 580  RESEARCH PREPARATION  30 PTS

A course of study in preparation for a Master’s part 2 research programme. The course is to be no less than 300 hours study or research and to be agreed with the research supervisor (or postgraduate coordinator if the supervisor is not yet known). Typical activities could include undertaking preliminary research investigations, developing key practical or theoretical skills, undertaking in depth analysis of the literature or an existing dataset. There are multiple offerings of these courses throughout the academic year, please contact the postgraduate coordinator to discuss your options.
BIOMEDICAL SCIENCE

BMSC 405  CRN 19800  ADVANCED TOPICS IN BIOMEDICAL SCIENCE I  15 PTS  1/3
Prerequisite:  45 points from an approved combination of 300-level BMSC, BIOL, CHEM, PSYC courses or permission of Head of School.
Approved courses:  BMSC 301–354 (or BIOL equivalents). All 45 points to be achieved at B grade or above.
Coordinator:  Dr Janet Pitman

A detailed examination of currently developing areas of major importance in biomedical science including but not limited to molecular pathology, vaccine immunology, and medicinal chemistry.

BMSC 406  CRN 19799  ADVANCED TOPICS IN BIOMEDICAL SCIENCE II  15 PTS  2/3
Prerequisite:  45 points from an approved combination of 300-level BMSC, BIOL, CHEM, PSYC courses or permission of Head of School
Approved courses:  BMSC 301–354 (or BIOL equivalents). All 45 points to be achieved at B grade or above.
Coordinator:  Prof Anne La Flamme

A detailed examination of currently developing areas of major importance in biomedical science including but not limited to immunology, pathology, and ethics.

BMSC 433  CRN 9861  HUMAN AND CLINICAL BIOCHEMISTRY  30 PTS  1/3
Prerequisite:  45 points from BIOL 301–354 or an approved combination of 300-level BMSC, CHEM, PSYC courses
Approved courses to include at least 20 points from BIOL 340, BMSC 343. All 45 points to be achieved at B grade or above.
Restriction:  BMSC 433
Coordinators:  Dr Darren Day, Dr Bronwyn Kivell

Cellular and molecular biochemistry of normal and pathological cell function with an emphasis on human disease processes and therapeutic treatments.

BMSC 440  CRN 10013  DIRECTED INDIVIDUAL STUDY  30 PTS  1+2/3
CRN 16012
A supervised programme of study approved by the Head of School. If interested in taking this course, in the first instance you are advised to contact the graduate programme coordinator in the subject area you are interested in. There are no formal prerequisites for this course: permission must be obtained from the Head of School.

BMSC 489  CRN 9862  BIOMEDICAL SCIENCE RESEARCH PROJECT  30 PTS  1+2/3
Prerequisite:  BMSC 361 or CHEM 305

A research project on a topic approved by the Head of School.
CLNR 413  CRN 29083  ADVANCED TOPICS IN CLINICAL RESEARCH 1  15 PTS  1/3
Prerequisite:  45 points from an approved combination of 300-level BMSC, BIOL, CHEM, PSYC courses or permission of Head of School
Approved courses:  BMSC 301–354 (or BIOL equivalents). All 45 points to be achieved at B grade or above.
Coordinator:  Prof Anne La Flamme

A detailed examination of selected topics in developing areas of clinical science and practice. In particular, the subjects covered may include such topics as immunology, epidemiology, or molecular therapeutics and shall include knowledge of current research activity in terms of theory and practice. This course will take place at the Wellington Hospital site.

CLNR 414  CRN 29084  ADVANCED TOPICS IN CLINICAL RESEARCH 2  15 PTS  2/3
Prerequisite:  45 points from an approved combination of 300-level BMSC, BIOL, CHEM, PSYC courses or permission of Head of School.
Approved courses:  BMSC 301–354 (or BIOL equivalents). All 45 points to be achieved at B grade or above.
Coordinator:  Prof Anne La Flamme

A detailed examination of further selected topics in developing areas of clinical science and practice. In particular, the subjects covered may include such topics as pharmacology, haematology, or surgical interventions and shall include knowledge of current research in terms of theory and practice. This course will take place at the Wellington Hospital site.

BMSC 580  CRN 9863  RESEARCH PREPARATION  30 PTS  1+2/3
A course of study in preparation for a Master’s part 2 research programme. The course is to be no less than 300 hours study or research and to be agreed with the research supervisor (or postgraduate coordinator if the supervisor is not yet known). Typical activities could include undertaking preliminary research investigations, developing key practical or theoretical skills, undertaking in depth analysis of the literature or an existing dataset.
**BIOTECHNOLOGY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Time Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEC 435</td>
<td>15708</td>
<td>BIOTECHNOLOGY</td>
<td>15</td>
<td>1/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved courses: BTEC 301, BIOL/BMSC 301–354, CHEM 301–306 to include at least 20 points from BTEC 301, BIOL/BMSC 339, 340. All 45 points to be achieved at B grade or above.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coordinator: A/Prof David Ackerley</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seminars introducing topics of current interest in biotechnology research.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTEC 436</td>
<td>15709</td>
<td>BIOTECHNOLOGY - BUSINESS DEVELOPMENT</td>
<td>15</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved courses: SCIE 310, BTEC 201, 301, BIOL/BMSC 301–354, CHEM 301–306 to include at least 20 points from SCIE 310, BTEC 201. All 45 points to be achieved at B grade or above.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coordinator: A/Prof Paul Teesdale-Spittle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evaluation of business strategic decision-making and intellectual property as applied within a biotechnology business context.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTEC 440</td>
<td>15710</td>
<td>DIRECTED INDIVIDUAL STUDY</td>
<td>30</td>
<td>1+2/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A supervised programme of study in biotechnology approved by the Head of School. If you are interested in taking this course, contact A/Prof David Ackerley in the first instance. Acceptance into such courses will be for exceptional reasons only (e.g. for a student-designed project that will interface directly with a specific biotechnology company). There are no formal prerequisites: permission must be obtained from the Head of School, following the initial consultation with A/Prof Ackerley.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTEC 441</td>
<td>15711</td>
<td>DIRECTED INDIVIDUAL STUDY</td>
<td>15</td>
<td>1/3</td>
</tr>
<tr>
<td></td>
<td>18016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A supervised programme of study in biotechnology approved by the Head of School. If interested in taking this course, in the first instance you should contact A/Prof David Ackerley. For acceptance see BTEC 440 above.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTEC 489</td>
<td>15712</td>
<td>RESEARCH PROJECT</td>
<td>30</td>
<td>1+2/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prerequisite: 55 points from BTEC 301, BMSC 301, 334, 335, 339, 340, 343, 354, CHEM 305</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A research project on a topic approved by the Head of School.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBIO 489</td>
<td>9276</td>
<td>RESEARCH PROJECT</td>
<td>30</td>
<td>1+2/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prerequisite: 55 points from BIOL/BMSC 301, 334, 335, 339, 340, 343, 354, CHEM 305</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A research project on a topic approved by the Head of School.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTEC 580</td>
<td>15713</td>
<td>RESEARCH PREPARATION</td>
<td>30</td>
<td>1+2/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A course of study in preparation for a Master’s part 2 research programme. The course is to be no less than 300 hours study or research, and to be agreed with the research supervisor (or postgraduate coordinator if the supervisor is not yet known). Typical activities could include undertaking preliminary research investigations, developing key practical or theoretical skills, undertaking in depth analysis of the literature or an existing dataset.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## CLINICAL IMMUNOLOGY

### CLNR 410 CRN 27056
#### CLINICAL IMMUNOLOGY
30 PTS 1/3
Prerequisite:
45 points from an approved combination of 300-level BMSC and BIOL courses including BIOL/BMSC 334 or permission of Head of School
All 45 points to be achieved at B grade or above
Coordinator:
Prof Anne La Flamme

This course will provide a broad understanding of recent advances in immunology as well as advanced understanding in specialist areas of clinical immunology. In particular, the subjects covered shall include knowledge of current research activity in terms of theory and practice.

### CLNR 411 CRN 28222
#### PRACTICUM IN CLINICAL IMMUNOLOGY
30 PTS 2/3
Prerequisite:
Enrolment in MClinIm; and approval by Head of School
Coordinator:
Prof Anne La Flamme

This course enables students to gain professional work experience in clinical immunology. Each student is supervised by a host organisation involved in immunological research or applications in the public or private sectors. The placement allows students to further develop teamwork and communication skills.

### CLNR 412 CRN 29135
#### RESEARCH PROJECT IN CLINICAL IMMUNOLOGY
30 PTS 2/3
Prerequisite:
Enrolment in MClinIm; and approval by Head of School
Coordinator:
Prof Anne La Flamme

A research project in Clinical Immunology approved by the Head of School

### CLNR 510 CRN 28223
#### ADVANCED CLINICAL IMMUNOLOGY
30 PTS 3/3
Prerequisite:
Enrolment in the MClinIm and approval to proceed to Part 2
Coordinator:
Dr Lisa Connor

This course will enable the development of an advanced understanding in clinical immunology. Specifically, this course shall promote critical analysis of recent advances and clinical trials and will emphasize the development of skills in science communication.

### CLNR 511 CRN 28224
#### RESEARCH DESIGN AND IMPLEMENTATION
30 PTS 3/3
Prerequisite:
Enrolment in the MClinIm and approval to proceed to Part 2
Coordinator:
Prof Anne La Flamme

This course consists of the mentor-guided development of a clinical or immunological study including the implementation pathway. In particular, students will design and produce a research proposal complete with a literature review, methodological detail, a budget, and ethical considerations.
# CLINICAL RESEARCH

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLNR 401</td>
<td>CRN 18711</td>
<td>INTRODUCTION TO CLINICAL RESEARCH AND CLINICAL TRIAL PRACTICE</td>
<td>15</td>
<td>1/3</td>
</tr>
<tr>
<td>Prerequisite</td>
<td></td>
<td>Approval from course coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td></td>
<td>Dr Richard Carroll &amp; Dr Rosemary Hall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A broad framework for understanding clinical research including the critical appraisal of the literature, clinical trials planning, preparation and implementation.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLNR 402</td>
<td>CRN 18712</td>
<td>ETHICS AND RESEARCH IN SPECIAL POPULATIONS AS APPLIED TO CLINICAL RESEARCH</td>
<td>15</td>
<td>1/3</td>
</tr>
<tr>
<td>Prerequisite</td>
<td></td>
<td>Approval from course coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td></td>
<td>Dr Richard Carroll &amp; Dr Rosemary Hall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An understanding of the place of ethics in clinical research common ethical issues that arise and how to analyse them and find solutions. The role of ethics committees, applications to ethics committees and Good Clinical Practice. An in-depth consideration of obligations under the Treaty of Waitangi with special regard to ethics and community based research. The development of an appropriate and inclusive approach to clinical research with special populations.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLNR 403</td>
<td>CRN 18713</td>
<td>BIOSTATISTICS AND INFORMATICS</td>
<td>15</td>
<td>2/3</td>
</tr>
<tr>
<td>Prerequisite</td>
<td></td>
<td>Approval from course coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td></td>
<td>Dr Richard Carroll &amp; Dr Rosemary Hall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biostatistics relevant to clinical research with the focus on quantitative method and applications for clinical trials. Informatics will be introduced with its application to clinical research including information gathering, processing and storage.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Course Title</th>
<th>Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLNR 404</td>
<td>CRN 18714</td>
<td>QUALITATIVE METHODS IN CLINICAL RESEARCH</td>
<td>15</td>
<td>2/3</td>
</tr>
<tr>
<td>Prerequisite</td>
<td></td>
<td>Approval from course coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td></td>
<td>Dr Richard Carroll &amp; Dr Rosemary Hall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An understanding of the place of qualitative research in clinical research both in a stand-alone context and combined with quantitative research. This course will include interview techniques contrasting advantages and disadvantages of different approaches and a range of other qualitative techniques.
### CLNR 405 CRN 18715 ADVANCED CLINICAL RESEARCH
**30 PTS 1/3**

**Design, Management and Analysis**

**Prerequisite:** Approval from course coordinator

**Coordinator:** Prof Elaine Dennison

An understanding of the practices and processes of clinical research, including clinical trials, project management, regulatory reports and audits, requirements specific to industry-funded research and the preparation and submission of study reports for publication.

Students must complete courses CLNR 401–404, prior to enrolling in CLNR 580.

### CLNR 580 CRN 18716 RESEARCH PREPARATION
**30 PTS 2/3**

**Prerequisite:** Approval from course coordinator

**Coordinator:** Dr Richard Carroll & Dr Rosemary Hall

Students will bring together material from many of the other courses and write an original, full, research grant application describing a proposed clinical research project: background and aims, clinical relevance, hypotheses to be tested, design and methods, analysis of results, dissemination of results, a plan for project management including staffing, budget, timeline and milestones for project delivery and quality management issues, consultation, an ethics committee application for the project and any other regulatory body applications required.

### CLNR 591 CRN 23059 THESIS IN CLINICAL RESEARCH
**120 PTS**

**Prerequisite:** Approval from Prof Elaine Dennison

**Coordinator:** Prof Elaine Dennison

Students are part time and enrol in 30 points at a time, beginning in trimester 1, and complete the programme on a part-time basis over two years.
DRUG DISCOVERY AND DEVELOPMENT

DRGD 401 CRN 28255 CHEMICAL BIOLOGY AND DRUG DISCOVERY 15 PTS 1/3
Prerequisite: CHEM 301
Corequisite: CHEM 441

An advanced course covering target identification and validation, biological assays and use of natural products in the context of drug discovery.

DRGD 402 CRN 28256 DRUG DESIGN 15 PTS 2/3
Prerequisite: CHEM 201; 30 points from an approved combination of 300-level BMSC, BIOL, CHEM courses

An advanced course with a focus on medicinal chemistry and the formulation of active pharmaceutical products.

DRGD 403 CRN 28257 DRUG DEVELOPMENT 15 PTS 2/3
Prerequisite: 15 points from CHEM 201, 203, 225; 30 points from an approved combination of 300-level BMSC, BIOL, CHEM, SCIE

An introduction to advanced-stage development of drugs, synthesis scale-up and cGMP practices, pharmaceutical analytical chemistry, protection of intellectual property and regulatory requirements.

DRGD 561 CRN 28258 APPLIED RESEARCH PROJECT 60 PTS 3/3
Prerequisite: 120 points from approved combination of 400-level BMSC, BIOL, CHEM, DRGD courses or approval of the Programme Director
Restrictions: DRGD 590, 595

One or more problem-solving projects providing students with experimental and research skills.

DRGD 580 CRN 28259 RESEARCH PREPARATION 30 PTS 1+2/3
Prerequisite: As required for acceptance into the programme

A course which equips students with the skills required to effectively perform research, and includes literature retrieval and surveys, report writing, data reporting and statistical analysis, development of a research proposal and problem-solving skills.

DRGD 590 CRN 28260 RESEARCH PROJECT 60 PTS 3/3
Prerequisite: 120 points from an approved combination of 400-level BMSC, BIOL, CBIO, CHEM, DRGD courses
Restrictions: DRGD 561, 595 or approval of the Programme Director.
A research project leading to a comprehensive report.

DRGD 595 CRN 28261 RESEARCH THESIS 90 PTS 1+2+3
Prerequisite: 45 points from an approved combination of 400-level BMSC, BIOL, CBIO, CHEM, DRGD with a minimum grade average of B+ or approval of the Programme Director
Restrictions: DRGD 561, 580, 590
### ECOLOGICAL RESTORATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Title</th>
<th>Points</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERES 525</td>
<td>13632</td>
<td>ECOLOGICAL RESTORATION</td>
<td>30</td>
<td>1/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coordinator: A/Prof Wayne Linklater</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Restoration Ecology is considered alongside Reservation and Reconciliation Ecology to develop an understanding of the relationship of people with the environment and biodiversity. The course begins by considering the philosophical, political, economic and social aspects underlying the science of ecology for biodiversity reservation, restoration and reconciliation. Course content is topical and structured around debating current dilemmas and challenges in applied ecology, especially for those whose solution requires that the social and ecological sciences be integrated.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CRN</th>
<th>Title</th>
<th>Points</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERES 526</td>
<td>13758</td>
<td>ECOLOGICAL RESTORATION PRACTICUM</td>
<td>30</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coordinator: Dr Stephen Hartley, Dr Heiko Wittmer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students will develop practical skills and obtain knowledge enabling them to become involved in restoration projects. Special focus will be placed on skills that enable students to develop and implement a restoration plan but projects designed to evaluate the success of restoration efforts are also suitable. Students are expected to work with either government agencies (e.g. Wellington City Council, Greater Wellington Regional Council, Department of Conservation) and/or local community groups to get hands-on experience with actual restoration projects. Within this general framework (and with input from staff), students are expected to develop their own project.
MOLECULAR MICROBIOLOGY

**MBIO 434**  **CRN 13742**  **MOLECULAR MICROBIOLOGY**  **30 PTS**  **1/3**  
Coordinator: Dr Joanna MacKichan  
Prerequisites: BMSC 301 and 20 points from BIOL/BMSC 334, 339, 340, 343

This course will consist of seminars introducing topics of contemporary importance in microbiology research, providing insight into the techniques used in microbiology and the development of advanced concepts and knowledge in the field. The course will be assessed by a combination of in-term assessments and a final exam. Students are strongly advised to have taken BMSC 301 or an equivalent level of microbiology as preparation for this course.

**MBIO 440**  **CRN 13743**  **DIRECTED INDIVIDUAL STUDY**  **30 PTS**  **1+2/3**  
Restriction: BIOL 440

This course consists of a supervised programme of study in microbiology approved by the Head of School. You are advised to contact the coordinator of the Microbiology graduate programme. There are no formal prerequisites for this course.

**MBIO 489**  **CRN 13744**  **RESEARCH PROJECT**  **30 PTS**  **1+2/3**  
Prerequisite: BMSC 301 and 35 points from BIOL/BMSC 334, 335, 339, 340, 343, 354, CHEM 305 or permission of the Head of School.

A research project on a topic approved by the Head of School.

**MBIO 580**  **CRN 13745**  **RESEARCH PREPARATION**  **30 PTS**  **1+2**

A course of study in preparation for a Master’s part 2 research programme. The course is to be no less than 300 hours study or research and to be agreed with the research supervisor (or postgraduate coordinator if the supervisor is not yet known). Typical activities could include undertaking preliminary research investigations, developing key practical or theoretical skills, undertaking in depth analysis of the literature or an existing dataset.
QUESTIONNAIRE FOR INTENDING GRADUATE STUDENTS IN SBS FOR 2017

Applicants for admission to the graduate group should discuss their general interests with the appropriate staff such as potential supervisors, or the relevant graduate coordinator, preferably before the summer vacation break. You are encouraged also to discuss possible projects with the staff member in your general area of interest; this must be done early if your project is likely to involve fieldwork over the summer period. Projects in Cell and Molecular Bioscience will not be allocated until the beginning of the 2017 academic year.

PLEASE COMPLETE THE FOLLOWING AND RETURN IT TO YOUR POST-GRADUATE ADMINISTRATOR AS SOON AS POSSIBLE

Note that the closing date for the Master of Marine Conservation and Master of Conservation Biology is 15 October 2016. For other programmes you may apply at any time.

1. Name: ___________________________ Student ID: ___________________________
2. Address for contact during summer:

   Email: ___________________________ Telephone: (____)____

3. Intended degree (circle one):

   - BSc(Hons)
   - MSc Pt1
   - GDipSc
   - BBmedSc(Hons)
   - MBmedSc
   - PGDipSci
   - MConBio
   - MMarCon
   - M ClinIm
   - MDDD

4. Subject of study:

   - Biotechnology
   - Cell and Molecular Bioscience
   - Clinical Immunology/Research
   - Conservation Biology
   - Ecology and Biodiversity
   - Ecological Restoration
   - Marine Biology/Conservation
   - Molecular Microbiology

5. Level of certainty (circle one):

   - definitely
   - probably
   - possibly

6. General area of research interest. At this stage all you need indicate is some undergraduate course(s) that have interested you most.

   ........................................................................................................................................

7. I have discussed possible project topics with the following academic staff member(s):

   ........................................................................................................................................

8. Teaching position. Do you wish to be considered for a teaching position (sessional assistant) in 2016? (Circle one).

   - Interested
   - Possibly Interested
   - Not Interested

   Tick preferred subject area:

   - Plants
   - Cell and Molecular Biosciences
   - Ecology
   - Marine Biology
   - Animals
   - Conservation Biology