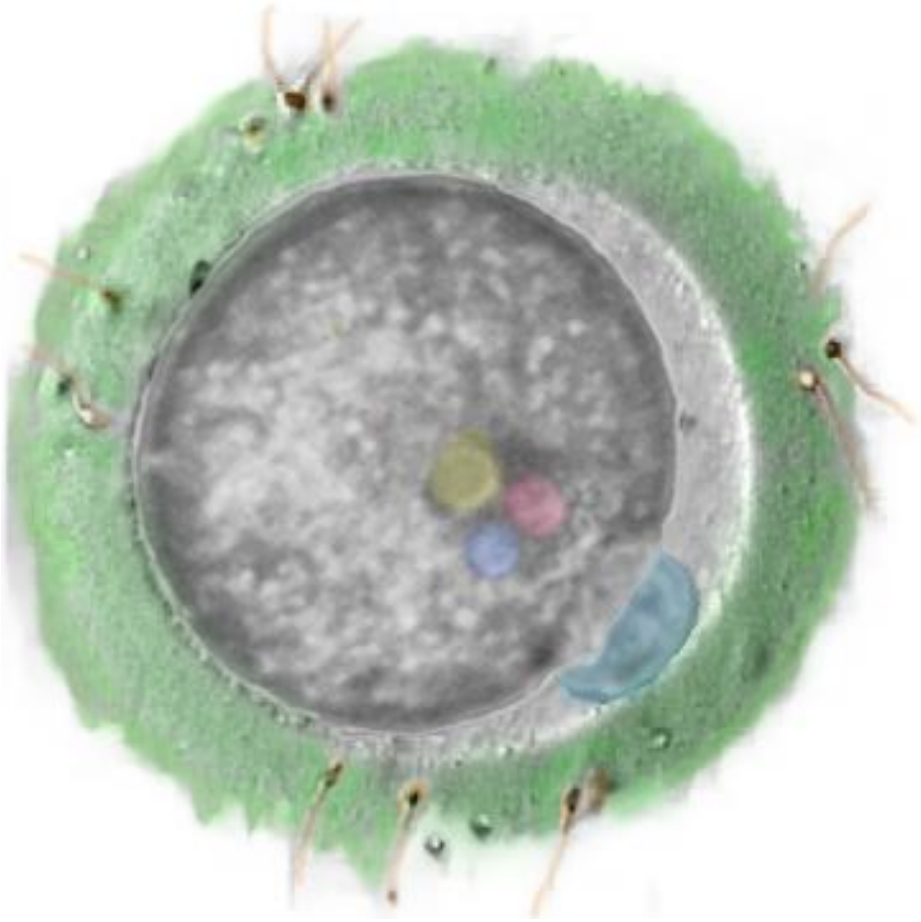
2024

Postgraduate course list

Biological Sciences

Te Kura Mātauranga Koiora



Credit: Photo by Janet Pitman & Ellie Stepney
Mouse triploidy embryo

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Updated 21th September 2023 to reflect information as at Jan 2024

VICTORIA UNIVERSITY OF WELLINGTON
TE HERENGA WAKA

WHO TO CONTACT

STUDENT AND ACADEMIC SERVICES - WELLINGTON FACULTY OF SCIENCE

Te Wāhanga Pūtaiao
Address: Level 1, Cotton Building
Phone: 04-463 5101
Email: **science-faculty@vuw.ac.nz**
Web: **www.wgtn.ac.nz/science**
Hours: 8.30 am–4.30pm Monday, Wednesday, Thursday, Friday
9.30 am–4.30pm Tuesday
Please note that at busy times of the year this office may close at 3.00pm

At the Faculty of Science Titoko – Centre for Student Success, 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, exam organisation and the maintenance of student records. The Student Success Advisors are located in CO144.

Briar Smith manages all postgraduate students:
briar.smith@vuw.ac.nz 04-887 3103

Johan Barnard	Manager, Student and Academic Services	04-463 5980
Robert Keyzers	Associate Dean - Academic (Postgraduate)	04-463 5117

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

STAFF CONTACTS

STAFF		ROOM	CONTACT
Head of School	A/Prof Janet Pitman	TTR214	463 5435
Deputy Heads of School	A/Prof Wayne Patrick	TTR318	886 4411
Postgraduate Programme Coordinators			
Biomedical Science	A/Prof Davide Comoletti	AM307	463 6029
Biotechnology	Prof David Ackerley	TTR411	463 5576
Cell and Molecular Bioscience	A/Prof Bronwyn Kivell	TTR317	463 9707
Clinical Research	Prof Elaine Dennison	elaine.dennison@vuw.ac.nz	
Clinical Immunology	Prof Anne La Flamme	AM306	463 6093
Conservation Biology	Prof Nicola Nelson	TTR332	463 5435
Drug Discovery and Development	A/Prof Simon Hinkley	Ferrier	463 0052
Ecology and Biodiversity	Prof Phil Lester	TTR329	463 5096
Ecological Restoration	A/Prof Stephen Hartley	TTR330	463 5447
Marine Biology	Prof James Bell	TTR409	04 886 4426
Master of Marine Conservation	Prof James Bell	TTR409	04 886 4426
Molecular Microbiology	Dr Joanna MacKichan	AM303	04 887 3949

Academic Staff	Research Areas	Room	Contact
Prof David Ackerley	*Enzyme Engineering, Synthetic Biology*	TTR411	463 5576
Prof James Bell	*Marine Biology, Population Genetics and Conservation*	TTR409	04 886 4426
Prof Kevin Burns	*Evolutionary Ecology*	TTR326	463 6873
Dr Zaramasina Clark	*Reproductive Biology, Assisted Reproduction and Pacific Health*	TTR322	886 5608
A/Prof Davide Comoletti	*Molecular aspects of synaptic adhesion proteins*	AM307	463 6029
Dr Lisa Connor	*Immunology*	AM310	463 7542
Dr Christopher Cornwall	*Climate Change Processes and Global Change Biology*	TTR335	463 5720
Prof Simon Davy	*Marine Symbiosis and Coral Reef Biology*	TTR406	463 5573
Dr Darren Day	*Biochemistry, Molecular Biology*	TTR336	463 6087
Dr Nicola Day	*Plant and Microbial Ecology*	TTR321	463 6089
Prof Elaine Dennison	*Clinical Research*	elaine.dennison@vuw.ac.nz	
Dr Julie Deslippe	*Plant community ecology*	TTR334	463 6084
Dr Monica Gerth	*Microbiology and Biochemistry*	TTR316	886 4434
A/Prof Stephen Hartley	*Conservation and Restoration Ecology*	TTR330	463 5447
A/Prof Bronwyn Kivell	*Physiology and Neurobiology*	TTR317	463 9707
Prof Anne La Flamme	*Immunology and Cell Biology*	AM306	463 6093
Prof Phil Lester	*Insect Ecology*	TTR329	463 5096
Dr Joanna MacKichan	*Microbiology*	AM303	04 887 3949
Dr Melanie McConnell	*Cancer Cell Biology and Genetics*	AM309	04 886 4435
Dr Andrew Munkacsi	*Chemical Genetics*		
Prof Nicola Nelson	*Conservation Biology*	TTR332	463 5435
Dr Diane Ormsby	*Reproductive and Developmental Biology, Assisted Reproductive Technologies*	TTR331	463 5271
Dr Jeremy Owen	*Metagenomics*	TTR410	463 5277
A/Prof Wayne Patrick	*Biochemistry*	TTR318	463 4779
Dr Lifeng Peng	*Biochemistry, Molecular Biology, Proteomics*	AM302	463 5233 *Ext* 8076
A/Prof Peter Pfeffer	*Developmental and Reproductive Biology*	TTR319	463 7462
A/Prof Janet Pitman	*Reproductive Biotechnology*	TTR214	463 5435
A/Prof Peter Ritchie	*Evolutionary Genetics*	TTR407	04 886 4422
Dr Alice Rogers	*Climate change impact on fisheries*	TTR326	04 886 4413
Prof Ashley Rowden	*Marine biodiversity*	TTR327	463 6283
Dr Rachael Shaw	*Animal Cognition and Behaviour*	TTR321	04 886 4409
Prof Jeff Shima	*Marine Ecology and Fish Biology*	TTR328	463 6494
A/Prof Paul Teesdale-Spittle	*Biochemistry and Pharmacology*	AM308	463 6094
A/Prof Heiko Wittmer	*Conservation and Restoration Ecology*	TTR323	463 7432
Dr Helen Woolner	*Marine Fungi and Natural Products*	TTR325	463 6090
Prof Joe Zuccarello	*Molecular Biology and Phycology*	TTR324	463 6414

Administrative Staff			
Emily Brook	School Manager	TTR212	463 6022
Hannah Hollamby	Administrator-Contracts/Finance	TTR206	886 4517
Mary Murray	Administrator	TTR206	463 5339
Mark Stephen	Administrator – Postgraduate Students	TTR206	463 5581
Technical Staff			
	Manager Technical Services	TTR211	463 5579
Mel Dohner	Technical Officer	TTR401	463 4785
Craig Doney	Equipment Officer	TTR015	463 4707
Kayla Griffin	Technical Officer	TTR401	463 9759
Joanna Hamilton	Laboratory Technician	TTR401	
Jennifer Hanley	Laboratory Technical Officer	TTR401	
Neville Higgison	Equipment Officer	TTR015	463 5154
Sue Keall	Senior Technical Officer	TTR401	463 5324
Danyl McLauchlan	IT Systems Consultant, Computational Biologist	AM301	463 5735
Simon Maddalena	Technical Officer - WUCEL	WUCEL	
Daniel McNaughtan	Technical Officer - WUCEL	WUCEL101	470 9257
Sushila Pillai	Technical Officer	TTR041	463 4784
Dr Pisana Rawson	Technical Officer	TTR401	04 886 4443
Erika Robinson	Technician	TTR Level 0	463 4890
Paul Roulston	Equipment Officer	TTR015	463 4783
Chris Thorn	Laboratory Technical Officer	TTR401	463 9756
Mahima Yapa Nanayakkara	Laboratory Technician	TTR Level 0	886 4597

QUALIFICATIONS AVAILABLE

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

The School of Biological Sciences offers 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 https://www.wgtn.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 https://www.wgtn.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. You will then need to enrol for your selected courses through the online admissions process that can be found at https://www.wgtn.ac.nz/study/apply-enrol. Should you require assistance in formulating your course plan, please see the Student Success Advisors at Titoko – Centre for Student Success in the Cotton Building (CO144).

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 prospective students must enrol by 14th November for study the following January.

YOUR POSTGRADUATE STUDY OPTIONS

DIPLOMAS AND CERTIFICATES

The School of Biological Sciences 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 full-time 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 full-time 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).

NOTE: Master of Clinical Immunology (MClinIm) is not offered in 2024

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 Calendar are broken in so doing. The permission of the Head of School is needed for substitution of courses.

BIOMEDICAL SCIENCE

Mātai Koiora Rongoā

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 further points chosen from BIOL 430-435, BMSC 401–449; CLNR 410, 413, 414
- Research Project (BMSC 489).

MASTER OF BIOMEDICAL SCIENCE

Part 1 consists of:

- 30 points chosen from BMSC 401–406, CLNR 413, 414
- 60 further points chosen from BIOL 430-435, 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 30 points from BMSC 401–406, CLNR 410, 413, 414, and 90 further points from BIOL 430-435, BMSC 401–489, 580, CLNR 410, 413, 414.

BIOTECHNOLOGY

Hangarau Koiora

Entry requirements:

- BTEC 301; 35 points from (BIOL 340; BMSC 301-399;CHEM 301-399; SCIE 310)
- For Masters and 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/BIOL/BMSC/CHEM/CLNR/DRGD/MBIO 401–479

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/BIOL/BMSC/CHEM/CLNR/DRGD/MBIO 401–479

Part 2:

- BTEC 591 (thesis).

BIOTECHNOLOGY FOR PGDIPSC

The personal course of study shall consist of 15 points from BTEC 401–479; 105 further points from BTEC/BIOL/BMSC/CHEM/CLNR/DRGD/MBIO 401–479

Please note that in 2024, BTEC 436 will not be offered. Usually this course is partnered with BTEC 435 to make 30 points; however, for 2024 any other relevant 15 point BIOL, BMSC, MBIO, or CHEM course may be substituted for BTEC436 for a PGDipSc, BSc(Hons), or MSc majoring in Biotechnology.

CELL AND MOLECULAR BIOSCIENCE

Mātauranga Koiora Pūtau

Entry requirements:

- BIOL 340, BMSC 339
- 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, CBIO 489, 580

CELL AND MOLECULAR BIOSCIENCE FOR PGCERTSC

60 points from BIOL 430-440, BMSC 433, CBIO 489, 580.

CLINICAL IMMUNOLOGY

Ārai Mate Whakamātau

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: NOT offered in 2024

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 from the University, the Malaghan Institute of Medical Research, Capital and Coast District Health Board, and the Medical Research Institute of New Zealand.

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

Rangahau Whakamātau

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

Mātai Koiora Whāomoomo

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 401–440, 510–530, ERES 525–527.

CONSERVATION BIOLOGY FOR PGDIPSC

Course requirements:

- BIOL 420
- 90 points in an approved combination 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 *Invasive Species, Biosecurity and the Law* (BIOL 425), and two approved electives. There is potential to include an international postgraduate 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 - Academic (Postgraduate).

Course requirements:

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

Application deadline: October 15th 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 https://www.wgtn.ac.nz/explore/postgraduate-programmes/master-of-drug-discovery-and-development/overview or contact A/Prof Simon Hinkley, Programme Director **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 Academic (Postgraduate).

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 BIOL 430-440, 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 fromBIOL 430-440, 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 60 points from BIOL 430-440, BMSC 400-441, BTEC 435-441, CHEM 400-441, CLNR 401-405, DRGD 402-403, MBIO 434-440
- 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

Whakaora Mātai Hauropi

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 or other courses approved by the Head of School.

ECOLOGY AND BIODIVERSITY

Mātai Hauropi, ngā Momo Koiora hoki

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 422
- 60 further points from BIOL 401-424, 440, 519, ERES 525-527.

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

ECOLOGY AND BIODIVERSITY FOR MSC

Part 1 consists of:

- BIOL 422, 580
- 60 further points from BIOL 401–424, 440, 519, ERES 525–527.

Part 2:

- EBIO 591 (thesis)

ECOLOGY AND BIODIVERSITY FOR PGDIPSC

BIOL 422; 90 points from BIOL 401–424, 440, 519, ERES 525–527.

MARINE BIOLOGY

Mātai Koiora Moana

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 423, BMAR 489
- 60 points from (BIOL 403 to 529)

Specialisation:
You may obtain a specialisation in Fisheries Science by including BIOL 410 Fisheries Science, and approval from the Head of School that BMAR 489 focuses on the area of fisheries science.

MARINE BIOLOGY FOR MSC

Part 1 consists of:

- BIOL 423, 580
- 60 points from BIOL 401–440, 519, ERES 525–527 or other approved courses

Part 2:

- BMAR 591 (thesis)

Specialisation:
You may obtain a specialisation in Fisheries Science by including BIOL 410 Fisheries Science, and approval from the Head of School that BMAR 591 focuses on the area of fisheries science.

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

He Takimoana

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 405, 416, 417, 420, 422, 423, 436, ERES 526, ENVI 525, 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

Mātai Koiora Pūtau

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 COURSE DESCRIPTIONS

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

The courses listed in this prospectus may be cancelled by the University because of insufficient resources or student demand, or if other unforeseen circumstances arise.

HOW TO USE THIS GUIDE

Course	Reference number	Title	Points	Trimester
↓	↓	↓	↓	↓
BIOL 403	**CRN 588**	**EVOLUTIONARY ANALYSIS**	**30 PTS**	**2/3**

BIOL 403	**CRN 588**	**EVOLUTIONARY ANALYSIS**	**30 PTS**	**2/3**
Prerequisites:		BIOL 329 or approval of the Head of School		
Coordinator:		Dr Peter Ritchie		

This course focuses on classic questions in evolution including speciation processes, reconstruction of biological history from modern specimens, macroevolution, the origin(s) of complexity, and human evolution. Special emphasis is given to the impact of data produced by modern molecular techniques, including DNA sequences.

BIOL 405	**CRN 29141**	**PEST MANAGEMENT, BIOSECURITY AND LAW**	**30 PTS**	**2/3**
Restrictions:		BIOL 425 prior to 2017		
Coordinator:		Prof Phil Lester and Prof Suzy Frankel (School of Law)		

Legal and biological perspectives on pest management, invasive species and biosecurity. The course examines national and international law regulating pest management and biosecurity including key international agreements and related dispute settlement processes. It explores issues in domestic and international biosecurity management and includes recent case studies and Māori perspectives on biodiversity and biosecurity.

BIOL 410	**CRN 27047**	**FISHERIES SCIENCE**	**30 PTS**	**1/3**
Prerequisite:		30 pts of relevant statistics at 200-level or above or permission of Head of School		
Coordinator:		Dr Alice Rogers		

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.

BIOL 420	CRN 5036	CONSERVATION ECOLOGY	30 PTS	1/3
Prerequisite:		300-level Ecology or approval of the Head of School		
Coordinator:		A/Prof Heiko Wittmer		

Ecological theory, principles and practice relating to biological conservation: island biogeography and nature reserves, ecological restoration, conservation genetics, ecosystem threats, landscape ecology, ecological evaluation, 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 Nicola Day		

In this course we will critically evaluate current and past concepts in ecology. To do this, we will examine 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 BIODIVERSITY AND ECOLOGY	30 PTS	1/3
Coordinator:		Prof Simon Davy		

Selected current research topics in Marine Biology, including marine ecology, diversity and conservation.

BIOL 424	CRN 9629	NEW ZEALAND CONSERVATION PRACTICE	30 PTS
Prerequisite:		300-level Ecology or the approval of the Head of School	
Coordinator:		Prof Nicola Nelson *(non-standard dates - does not conforr standard trimester dates)*	

A practical, field-based course in New Zealand's fauna and flora and their conservation. Students visit a range of important field sites to learn about major conservation problems affecting the New Zealand biota. A case study approach is used to examine the conservation practices of New Zealand conservation scientists and managers. October 15 is the deadline for applications to take the course. The field work is of 4 weeks duration, commencing in late-January through to late-February. Assessment of the practical work continues until the end of April. This course is primarily available to students enrolled on the Master of Marine Conservation or Master of Conservation Biology programmes.

notify Prof Nelson as early as possible if you are interested.

Applications close 15 October 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		
Coordinators:		Dr Melanie McConnell		

An in-depth review of research and modern concepts in heredity, genomics, gene regulation and molecular microbiology.

BIOL 431	CRN 9229	CELL 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:		Approved courses to include at least 20 points from BIOL 340, BMSC 343. All 45 points to be achieved at B grade or above.		
Coordinators:		A/Prof Bronwyn Kivell		

Advances in cellular structure, function, and behaviour, including aspects of developmental biology.

BIOL 432	CRN 9230	PHYSIOLOGY AND PHARMACOLOGY	30 PTS	1/3
Prerequisite:		45 points from approved combination of 300-level BIOL, BMSC, CHEM, PSYC courses or permission of Head of School		
Approved 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.		
Coordinators:		A/Prof Peter Pfeffer, Dr David Comoletti, A/Prof Paul Teesdale-Spittle		

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

BIOL 435	CRN 34054	RESEARCH SKILLS IN THE LIFE SCIENCES	15 PTS	1/3
Prerequisite:		P 40 points from (BIOL 329, BIOL 340, BMSC 301-354, BTEC 301), or permission of Head of School		
Restriction:		BIOL 580; BIOL 427 in 2019-2021		
Coordinators:		A/Prof Wayne Patrick		

This course is designed to develop skills in using primary research literature, experimental design, record keeping, data presentation, statistical analysis and scientific writing. It also emphasises the importance of communicating scientific results to a variety of audiences.

This course is not offered in 2024.

BIOL 440	DIRECTED INDIVIDUAL STUDY	30 PTS
Prerequisite:	Permission of the Head of School	

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.

BIOL 519	CRN 26208	PRINCIPLES OF MARINE CONSERVATION	30 PTS	2/3
Prerequisite:		60 points from 300-level Marine Biology, Ecology, Environmental Studies or permission of Head of School		
Restrictions:		BIOL 419		
Coordinators:		Dr Chris Cornwall		

This course focusses 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 resources, including fisheries ecology; bioinvasions and disease; global climate change; marine reserve ecology; and scenario planning.

BIOL 529	**CRN 26209**	**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.		
Coordinators:		Prof James Bell		

Students should notify the Course Coordinator of their intention to enrol by 1 March 2024.

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 is taught overseas and is only available to students enrolled on the Master of Marine Conservation programme.

BIOL 489	**RESEARCH PROJECT**	**30 PTS**
BMAR 489	**RESEARCH PROJECT**	**30 PTS**
EBIO 489	**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	**RESEARCH PREPARATION**	**30 PTS**
CBIO 580	**RESEARCH PREPARATION**	**30 PTS**

A course of study in preparation for a Master's Part 2 research programme. Typical activities include undertaking preliminary research investigations and developing key practical and theoretical skills, that aid in the development of your Master's thesis proposal.

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.		

This course is not offered in 2024

BMSC 406	CRN 19799	ADVANCED TOPICS IN BIOMEDICAL SCIENCE	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		
Coordinators:		Dr Diane Ormsby		

A course in which you gain tools to examine and communicate concepts within currently developing areas of major importance in biomedical science.
A detailed examination of a selection of currently developing areas of major importance in biomedical science.

BMSC 433	CRN 9861	HUMAN AND CLINICAL BIOCHEMISTRY	30 PTS	
Prerequisite:		45 points from BIOL 301–354 or an approved combination of 300-level BMSC, CHEM, PSYC courses		
Restriction:		BIOL 433		

This course is not offered in 2024.

BMSC 440	DIRECTED INDIVIDUAL STUDY	30 PTS	1+2/3
Prerequisite:	Permission of Head of School		

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:		Permission of Head of School		

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

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. Typical activities include undertaking preliminary research investigations and developing key practical and theoretical skills, that aid in the development of your Master's thesis proposal.

BIOTECHNOLOGY

BTEC 435	**CRN 15708**	**SCIENCE OF BIOTECHNOLOGY**	**15 PTS**	**1/3**
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.		
Coordinator:		Prof David Ackerley		

Seminars introducing topics of current interest in biotechnology research.

BTEC 436	**CRN 15709**	**BIOTECHNOLOGY/BUSINESS DEVELOPMENT**	**15 PTS**	
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.		

This course is not offered in 2024.

BTEC 440	**CRN 15710**	**DIRECTED INDIVIDUAL STUDY**	**30 PTS**	**1+2/3**

A supervised programme of study in biotechnology approved by the Head of School.

If you wish to take this course, contact Prof David Ackerley in the first instance. Acceptance 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 Prof Ackerley.

BTEC 441	**CRN 15711** **CRN 18016**	**DIRECTED INDIVIDUAL STUDY**	**15 PTS**	**1/3** **2/3**

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 Prof David Ackerley. For acceptance see BTEC 440 above.

BTEC 489	**CRN 15712**	**RESEARCH PROJECT**	**30 PTS**	**1+2/3**
CBIO 489	**CRN 9276**	**RESEARCH PROJECT**	**30 PTS**	**1+2/3**
Prerequisite:		Permission of Head of School		

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

BTEC 580	**CRN 15713**	**RESEARCH PREPARATION**	**30 PTS**	**1+2/3**

A course of study in preparation for a Master's Part 2 research programme. Typical activities include undertaking preliminary research investigations and developing key practical and theoretical skills, that aid in the development of your Master's thesis proposal.

Please note that in 2024, BTEC 436 will not be offered. Usually this is partnered with BTEC435 to make 30 points; therefore, for 2024 any other relevant 15 point BIOL, BMSC, MBIO, or CHEM course may be substituted for BTEC 436 for a PGDipSc, BSc(Hons) or MSc majoring in Biotechnology.

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 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.

This course is not offered in 2024, will be offered in 2025.

CLNR 411	CRN 28222	PRACTICUM IN CLINICAL IMMUNOLOGY	30 PTS	3/3
Prerequisite:		Enrolment in MClinIm; and permission of 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.

This course is not offered in 2024, will be offered in 2025.

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

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

This course is not offered in 2024, will be offered in 2025.

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.		
Restrictions:		BMSC 403 prior to 2017		
Coordinator:		Prof Anne La Flamme		

This course is not offered in 2024, will be offered in 2025.

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 courses including BMSC 334 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.		
Restrictions:		BMSC 404 prior to 2017		
Coordinator:		Prof Anne La Flamme		

This course aims to develop an advanced understanding of specialist clinical areas within the broad discipline of clinical research. In particular, the subjects covered may include such topics as pharmacology, haematology, or surgical interventions and shall include knowledge of current research activity in terms of theory and practice. This course is organised into modules, each covering independent topics with specific clinical aspects. Individual modules may include lectures, seminars, oral presentations or written assignments. This course will take place at the Wellington Hospital site.

This course is not offered in 2024, will be offered in 2025.

CLNR 510	CRN 28223	ADVANCED CLINICAL IMMUNOLOGY	30 PTS	2/3
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.

This course is not offered in 2024.

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

CLNR 401	**CRN 18711**	**INTRODUCTION TO CLINICAL RESEARCH AND CLINICAL TRIAL PRACTICE**	**15 PTS**	**1/3**
Prerequisite:		Approval of Course Coordinator		
Coordinator:		Dr Richard Carroll & Dr Irene Braithwaite		

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

CLNR 402	**CRN 18712**	**ETHICS AND RESEARCH IN SPECIAL POPULATIONS AS APPLIED TO CLINICAL RESEARCH**	**15 PTS**	**1/3**
Prerequisite:		Approval of Course Coordinator		
Coordinator:		Dr Richard Carroll		

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.

CLNR 403	**CRN 18713**	**BIOSTATISTICS AND INFORMATICS**	**15 PTS**	**2/3**
Prerequisite:		Approval of Course Coordinator		
Coordinator:		Dr Lisa Woods		

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

CLNR 404	**CRN 18714**	**QUALITIVE METHODS IN CLINICAL RESEARCH**	**15 PTS**	**2/3**
Prerequisite:		Approval of Course Coordinator		
Coordinator:		Dr Martin Woods		

An understanding of the place of qualitative research in clinical research both as stand-alone 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 DESIGN, MANAGEMENT AND ANALYSIS**	**30 PTS**	**1/3**
Prerequisite:		CLNR 401, 402, 403, 404		
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:		CLNR 405		
Coordinator:		TBC		

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:		PGDipClinRes or its equivalent or approval by Programme Director	
Coordinator:		TBC	

Master's thesis in Clinical Research.

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 (or CHEM 441 as co-requisite)		

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		

One or more problem-solving projects that provide 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**	**2/3**
Prerequisite:		120 points from an approved combination of 400-level BMSC, BIOL, CBIO, CHEM, DRGD courses to include 30pts from DRGD 580, CHEM 580, CBIO 580 or approval of the Programme Director		
Restrictions:		DRGD 561		

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

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

A research project leading to a research thesis.

ECOLOGICAL RESTORATION

ERES 525	CRN 13632	ECOLOGICAL RESTORATION	30 PTS	1/3
Coordinator:		A/Prof Stephen Hartley		

Theory and practice behind the restoration of flora and fauna and functions to degraded sites, with presentations by leading NZ scientists and restoration practitioners. Students will visit current restoration projects, e.g., Zealandia.

NOTE: This course capacity for 2024 is capped at 15 students, with preferential entry for students with an ERES major.

ERES 526	CRN 13758	ECOLOGICAL RESTORATION PRACTICUM	30 PTS	2/3
Coordinator:		A/Prof Stephen Hartley		

A project-based exploration of practical issues underpinning ecological restoration. Students will develop practical skills and obtain knowledge enabling them to contribute to a local restoration project. Focus will be placed on the skills required to develop a restoration plan, implement restoration management and to evaluate the success of restoration efforts.

NOTE: This course capacity for 2024 is capped at 15 students.

MOLECULAR MICROBIOLOGY

MBIO 434	**CRN 13742**	**MICROBIOLOGY**	**30 PTS**	**1/3**
Coordinator:		Dr Joanna MacKichan		

Seminars introducing topics of current interest in microbiology research, providing insight into techniques used in microbiology and the development of new knowledge in the field.

MBIO 440	**CRN 13743**	**DIRECTED INDIVIDUAL STUDY IN MICROBIOLOGY**	**30 PTS**
Prerequisites:		Permission of the Head of School	
Restriction:		BIOL 440	
Coordinator:		Dr Joanna MacKichan	

A supervised programme of study approved by the Head of School.

Note: 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.

MBIO 489	**CRN 13744**	**RESEARCH PROJECT**	**30 PTS**	**1+2/3**
Prerequisites:		Permission of the Head of School		

A supervised project involving original research and leading to the production of a dissertation.

MBIO 580	**CRN 13745**	**RESEARCH PREPARATION**	**30 PTS**	**1+2/3**

A course of study in preparation for a Master's Part 2 research programme. Typical activities include undertaking preliminary research investigations and developing key practical and theoretical skills, that aid in the development of your Master's thesis proposal.