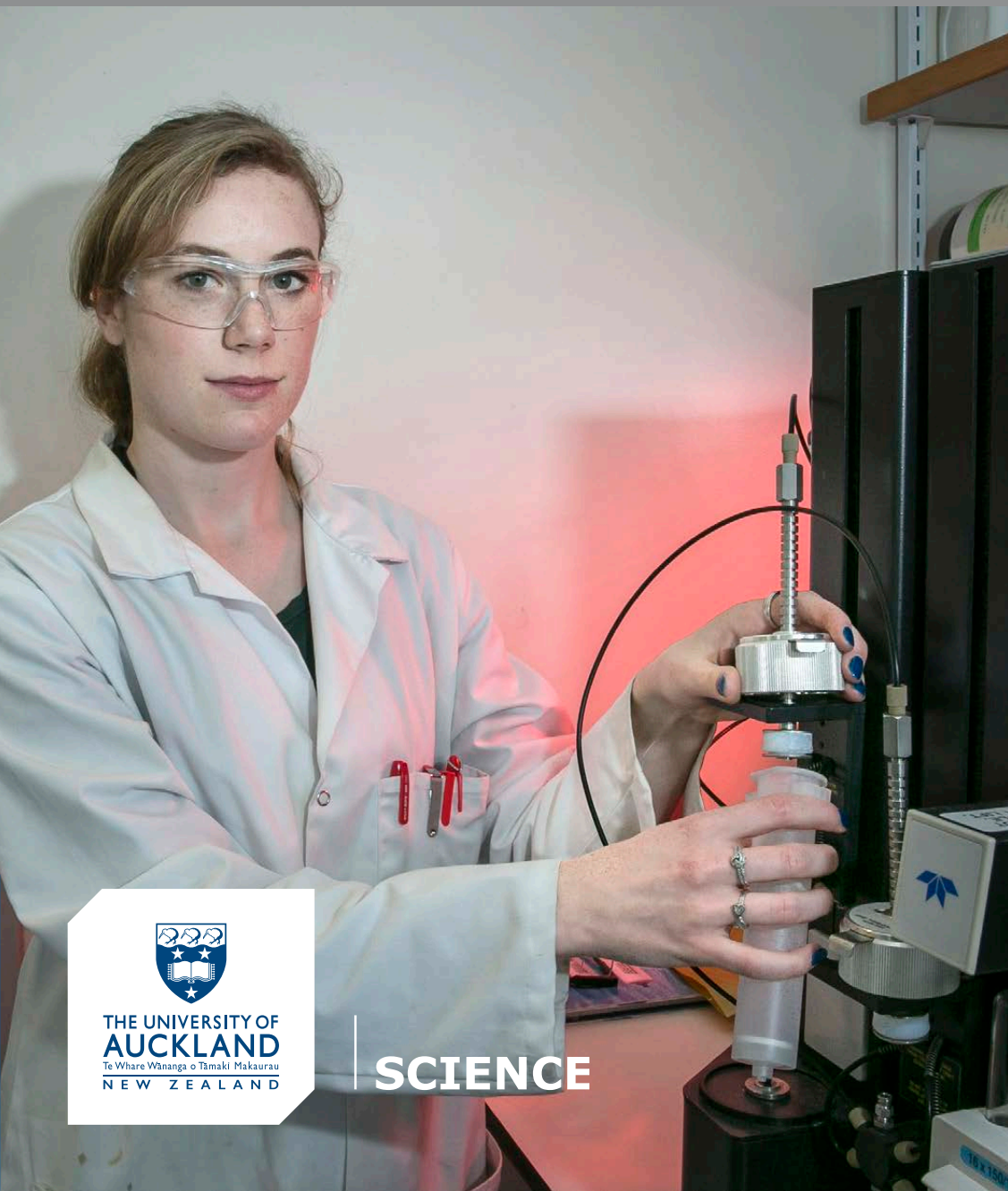


MEDICINAL CHEMISTRY

POSTGRADUATE HANDBOOK

2017



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

SCIENCE

Welcome to Medicinal Chemistry

Medicinal Chemistry is one of the most rapidly developing areas within the discipline of Chemistry, both globally and locally. It is the study of the design, biochemical effects, regulatory and ethical aspects of drugs for the treatment of disease. The aim of this programme is to produce graduates with an appropriate background in biology and pharmacology, built upon a strong chemistry foundation. The Medicinal Chemistry programme at the University of Auckland is the only programme of its kind in New Zealand.



Studying Medicinal Chemistry at honours level offers students a chance to expand on their undergraduate knowledge by providing a choice of postgraduate papers in chemistry, biology and medical sciences. Additionally, students enhance their laboratory skills and put their understanding into practice by embarking on a year-long research project supervised by an academic staff member in the School of Chemical Sciences. The research is written up in the form of a dissertation.

This handbook outlines the courses offered and provides information to assist you in planning your degree. We look forward to you joining us in this exciting field of research.

DISTINGUISHED PROFESSOR MARGARET BRIMBLE
Director of Medicinal Chemistry

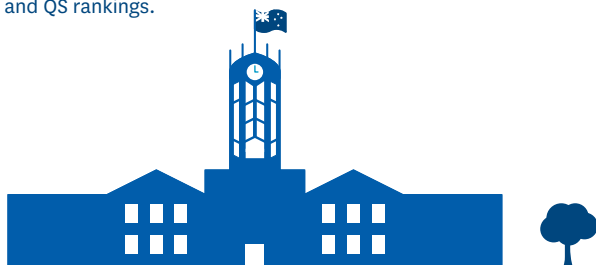


The Faculty of Science has over

7600
students

13% of these are
international students*

The University of Auckland is the highest
ranked university in New Zealand by both
Times Higher Education and QS rankings.



Postgraduate study options in Medicinal Chemistry

Medicinal Chemistry involves the design and synthesis of biologically active molecules with therapeutic properties suitable for clinical application.

BSc

BSc(Hons)

PhD

Bachelor of Science (Honours) in Medicinal Chemistry

This programme is an option for well-prepared students wishing to study Medicinal Chemistry in greater depth than a BSc. The BSc(Hons) can also provide a faster path to the PhD degree for students intending to perform advanced research.

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The average number of years it takes to complete a Bachelor of Science (Honours) degree



Prerequisite

- A BSc major in Medicinal Chemistry and at least 90 points at Stage III or equivalent as approved by the School of Chemical Sciences.

Programme structure

- 15 points: CHEM 735
- 45 points: CHEM 710–780, BIOSCI 756, 757, 759, MEDSCI 708, 715, 716, 721, 722
- 60 points: CHEM 793 (Dissertation)

Students are advised to consult the University Calendar for detailed regulations for this degree.

A candidate for BSc(Hons) must achieve a GPA average of B- or above to be awarded this degree.

www.science.auckland.ac.nz/medicinal-pg





Selection of supervisor

Students need to select a research supervisor in parallel with the application to enrol for BSc(Hons) in Medicinal Chemistry.

- Consult with at least three academic staff members on the research topics that interest you
- Fill out a supervisor selection form (link to follow)
- Submit this form to the by 20 November (for Semester 1) or 5 July (for Semester 2)

We will endeavour to offer students their first choice and will confirm supervisor selection to students as soon as possible after the application closing dates.

For more information and to access the form, go to www.chemistry.auckland.ac.nz/supervisors

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Best student city
in the world*

QS Best Student Cities 2016

Doctor of Philosophy (PhD)

Quick facts

Points per degree: 360 points

Full-time study: 3-4 years

Part-time study: 6-8 years

Degree structure: research

Application closing dates: apply at anytime

Start date: start on the first day of the month

For more information, go to

www.science.auckland.ac.nz/phd

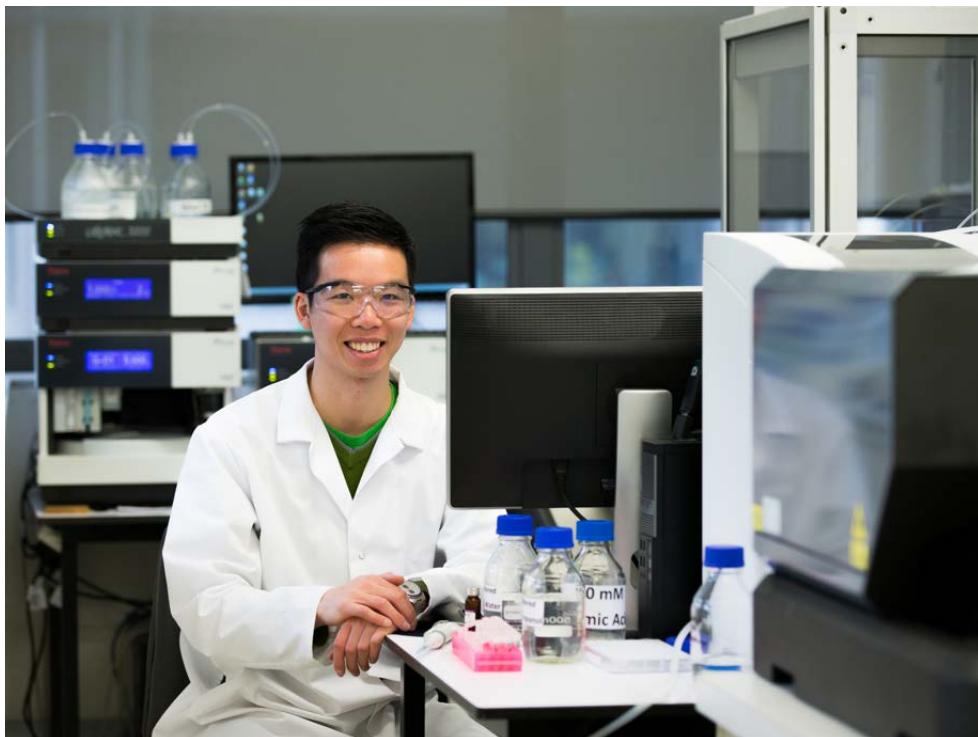
Entry to PhD

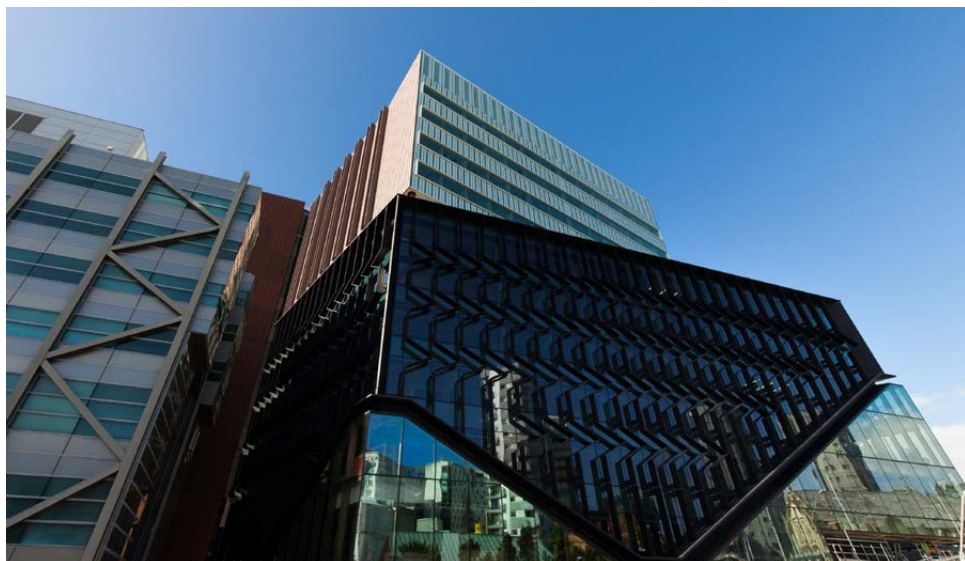
The normal requirement for admission to the PhD is an honours degree with second class honours (first division or better), either MSc, BSc(Hons), or BTech. Candidates with overseas qualifications should consult the school for advice and assessment of their qualifications. Candidates may be required to enrol in one or more courses concurrent with research work to complement either their research work or their background in the subject.

Our postgraduate programmes are designed to take students to the cutting edge of their discipline.

A wide range of postgraduate research topics in Medicinal Chemistry are offered by the School of Chemical Sciences.

www.chemistry.auckland.ac.nz/medchem-research



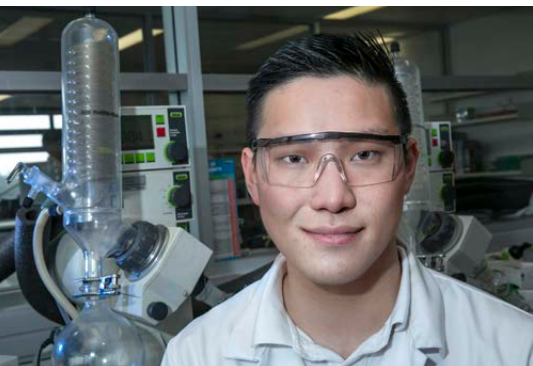


Postgraduate Medicinal Chemistry courses

Course code	Title	Semester
BIOSCI 756	Proteomics	S1
BIOSCI 757	Structural Biology	S2
BIOSCI 759	Molecular Cell Biology and Biomedicine	S1
CHEM 710	Advanced Physical Chemistry	S2
CHEM 720	Advanced Inorganic Chemistry	S1
CHEM 730	Modern Methods for the Synthesis of Bioactive Molecules	S1
CHEM 735	Advanced Medicinal Chemistry	S1
CHEM 738	Biomolecular Chemistry	S2
CHEM 740	Current Topics in Analytical Chemistry	S2
CHEM 750	Advanced Topics in Chemistry 1	S1/S2
CHEM 751	Advanced Topics in Chemistry 2	S1/S2
CHEM 770	Advanced Environmental Chemistry	S2
CHEM 780	Advanced Materials Chemistry	S2
CHEM 793	BSc(Hons) Dissertation in Chemistry	S1/S2
MEDSCI 708	Advanced Immunology and Immunotherapy	S1
MEDSCI 715	Molecular Toxicology	S1
MEDSCI 716	Advanced Drug Disposition and Kinetics	S1
MEDSCI 721	Advanced Toxicology	S2
MEDSCI 722	Clinical Pharmacology	S2

For course descriptions and more information, go to www.chemistry.auckland.ac.nz/pgcourses

Careers in Medicinal Chemistry



“Medicinal chemistry and organic chemistry go hand-in-hand and its a fascinating combination.

“When a new binding target is discovered, a medicinal chemist will generate a model using computer simulations and calculations in order to suggest possible lead compounds. This is where organic chemistry comes in, where you apply the chemistry in the literature to synthesise the said compounds in the lab. It can also go in the other direction, where a molecule you synthesise is then tested against cell lines to determine its binding capacities and the biological activities which can then be looked at from a pharmaceutical point of view.

“I’ve always been fascinated by how molecules, which are invisible to the naked eye, can influence the world so much and I hope to use my qualification to work in the pharmaceuticals industry.”

Hans Choi is studying toward a Doctor of Philosophy (PhD) majoring in Chemistry.

Our postgraduate students are trained in synthesis, reactivity and analysis of organic compounds and will develop the ability to provide valuable insight into the pharmacological, regulatory and ethical aspects of these bioactive molecules.

What roles could you expect?

Academic
Chemist
Investigator
Lab chemist
Medicinal chemist
Research chemist
Researcher
Scientist
Synthetic chemist
Teacher
Technician

Who may employ you?

Biomedical and pharmaceutical companies
Crown Research Institutes
Hospitals
Government authorities and agencies
Private research institutions



Disclaimer

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

Helpful information

Academic dates	www.auckland.ac.nz/dates
Accommodation	www.accommodation.auckland.ac.nz
Apply for postgraduate study	www.auckland.ac.nz/applynow
Career Development and Employment Services	www.cdes.auckland.ac.nz
Childcare	www.auckland.ac.nz/childcare
Degree planning and course advice	www.science.auckland.ac.nz/student-centre
Disability Services	www.disability.auckland.ac.nz
How to enrol	www.auckland.ac.nz/enrolment
Information for postgraduate students	www.postgraduate.ac.nz
International students	www.international.auckland.ac.nz
Libraries and Learning Services	www.library.auckland.ac.nz
Māori and Pacific students	www.science.auckland.ac.nz/tuakana
Need help?	www.askauckland.ac.nz
Postgraduate Students' Association	www.pgsa.org.nz
Rainbow Science Network for LGBTI students	www.science.auckland.ac.nz/rainbowsience
Scholarships, awards and fees	www.scholarships.auckland.ac.nz www.auckland.ac.nz/fees www.auckland.ac.nz/studentloansandallowances
Support for Science students	www.science.auckland.ac.nz/support

Questions about Medicinal Chemistry?
Email Margaret Brimble (m.brimble@auckland.ac.nz).



Connect with us

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