

CHEMISTRY

POSTGRADUATE HANDBOOK

2017



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

SCIENCE

Welcome to the School of Chemical Sciences

Chemistry is the branch of science that deals with the identification of the substances of which matter is composed; the investigation of their properties and the ways in which they interact, combine, and change; and the use of these processes to form new substances. It is of fundamental importance. Chemistry is intrinsically interdisciplinary, and plays a key role in related disciplines, such as medicine, engineering, biological science, food science, forensic science, environmental science, and materials science.



We are the largest academic chemistry programme in the country. We offer courses in Pure and Applied Chemistry, as well as in Medicinal Chemistry, Forensic Science, Food Science and Nutrition, and in Wine Science.

The School is a stimulating intellectual environment. Over 30 academics and 200 postgraduate students are active in a wide range of research programmes. Our research enhances our teaching programmes, and you can expect to be taught by academics who are leading scholars in their fields.

This handbook describes the full range of courses offered, together with information to assist you in planning your degree programmes and potentially advancing into post graduate study and research. You are joining a thriving and exciting School. Welcome!

PROFESSOR KEVIN E SMITH
Head of School



The Faculty of Science has over

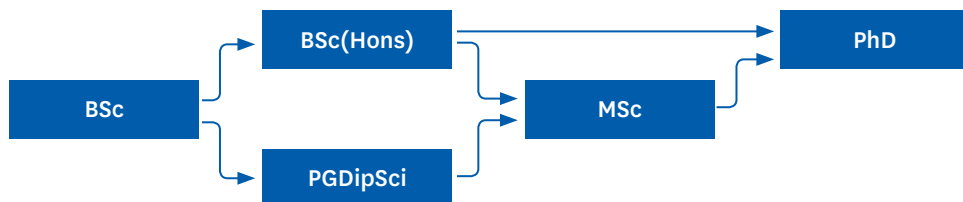
7600
students

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 Chemistry



Bachelor of Science (Honours)

For admission to the BSc(Hons), please consult the *University of Auckland Calendar*.

Prerequisites

- Bachelor of Science majoring in Chemistry
- At least 90 points at Stage III

Programme structure

Part-time: two year programme

Option one:

- 60 points from CHEM 793 (Dissertation)
- 60 points from CHEM 710-780

Option two:

- 60 points from CHEM 793 (Dissertation)
- 45 points from CHEM 710-780
- 15 points from 700 level courses in a related subject (subject to Head of Department approval)

1

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



A candidate for BSc(Hons) must achieve a GPA average of 4 or above to be awarded this degree. A student who completes the BSc(Hons) year but does not attain the minimum grade for honours may credit the 700 - level courses towards a Postgraduate Diploma in Science (PGDipSci).



Postgraduate Diploma in Science (PGDipSci)

Prerequisites

- Bachelor of Science majoring in Chemistry
- Or an approved degree of equivalent completed at another university

1

The average number of years it takes to complete a Postgraduate Diploma in Science



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

Programme structure

Part-time: Must be completed within four years

- Consists of 120 points (usually eight courses)
- At least 90 points from CHEM 691, 710-780, 795
- Up to 30 points from 600 or 700 level courses in Chemistry or related subjects with approval of the Head of Department
- CHEM 750 is strongly recommended



Note: Students intending to study for a Master of Science in Chemistry must take CHEM 795

Students may elect to take CHEM 691 the Postgraduate Diploma Dissertation (30 point) carried out under the supervision of an academic staff member.

Please complete the Expression of Interest for PGDipSci research supervision form (see www.chemistry.auckland.ac.nz/selectingsupervisor)

Master of Science (MSc) in Chemistry

Prerequisite

- A BSc(Hons) or PGDipSci in Chemistry including CHEM 795 OR an approved degree of equivalent standing completed at another university

Please note: A student who is within 15 points of completing a BSc(Hons) or PGDipSci may, with the approval of the Head of School, enrol for MSc provided that the remaining course is completed within 12 months of entry to MSc.

Programme structure

- 120 points: CHEM 796 MSc Thesis in Chemistry

Note that mid-year enrolment is possible for the MSc, please consult a course coordinator for advice.

1

The average number of years it takes to complete a Master of Science



Selection of supervisor

Students need to select a research supervisor in parallel with the application to enrol for BSc(Hons) and MSc in Chemistry. Please contact individual staff members to discuss the projects that are interesting to you. You should consult with at least three staff members. Fill out a supervisor selection form and indicate, in order of preference, three supervisors with whom you would like to work. Submit this form by 20 November (for semester 1 intake) or 5 July (for semester 2 intake). The School of Chemical Sciences will endeavour to offer students their first choice and will confirm supervisor selection to students as soon as possible after the application closing dates.



Doctor of Philosophy (PhD)

Quick facts

Points per degree: 360 points

Fulltime study: 3-4 years

Part-time study: 6-8 years

Degree structure: Research

Taught at: All Campuses or off-campus registration (subject to approval)

Application closing dates: Apply at anytime

Start date: Start at anytime

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 of Chemical Sciences 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.

Postgraduate Chemistry courses

Course code	Title	Semester
CHEM690 A & B	Graduate Diploma Dissertation (Chemistry)	S1/S2
CHEM691* A & B	PG Diploma Dissertation (Chemistry)	S1/S2
CHEM701	PG Topics in Chemistry 1	
CHEM702	PG Topics in Chemistry 2	
CHEM710	Advanced Physical Chemistry	S2
CHEM720	Advanced Inorganic Chemistry	S1
CHEM730	Modern Methods for the Synthesis of Bioactive Molecules	S1
CHEM735	Advanced Medicinal Chemistry	S1
CHEM738	Biomolecular Chemistry	S2
CHEM740	Current Topics in Analytical Chemistry	S2
CHEM750/751	Advanced Topics in Chemistry 1 & 2	S1/S2
CHEM770	Advanced Environmental Chemistry	S2
CHEM780	Advanced Materials Chemistry	S2
CHEM793	BSc(Hons) Dissertation in Chemistry	S1/S2
CHEM795	Research Methods in Chemistry	S1/S2
CHEM796	MSc Thesis in Chemistry	S1/S2

*Limited number of topics are available for CHEM 691 projects.

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

For a searchable database where you can find masters and doctoral supervisors and research projects that you can join visit www.findathesis.auckland.ac.nz

Careers in Chemistry

Analytical chemist
Biochemist
Chemistry technician
Higher education lecturer
Inorganic chemist
Management of research and development units
Materials chemist
Organic chemist
Physical chemist
Research scientist
Science technician
Scientific advisor
Secondary teacher
Technical assistant

Industries and fields may include:

Crown Research Institutes
Pharmaceutical, polymers and coatings industries
Food, paper, brewing, paint and plastics, ceramics, metals and agricultural industries

Special applications include forensic science, and the running of hospital laboratories.



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.



"I am currently working on self-healing conductors based on conducting polymers. My aim is to develop an intrinsically conductive, stretchable plastic material that will be able to heal itself. These materials can be applied to newly emerging areas such as stretchable electronics and health care devices.

"What I like most about my PhD programme is being able to pursue my own research interests and the ability to produce quality results. Overall, I think it is really cool, being able to contribute your share of knowledge into the world."

Paul Baek is studying toward a PhD in Chemistry having completed a Bachelor of Science majoring in Chemistry (Hons).



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

Email Dr Viji Sarojini, v.sarojini@auckland.ac.nz for any enquiries



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