

Chemistry

Undergraduate Handbook 2018



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

SCIENCE

SCHOOL OF CHEMICAL SCIENCES

Welcome to the School of Chemical Sciences

An undergraduate degree in Chemistry gives you a sound understanding of the chemical nature of matter and a grounding in laboratory-based chemical science.



Chemistry is rightly referred to as the central and enabling science. Society's ability to meet our social and economic needs while minimising our environmental impact is underpinned by science.

A Chemistry degree will provide you with knowledge of chemical processes, design of new instruments, development of new medicinal drugs, and synthesis of new materials.

Many of the most exciting scientific discoveries are occurring at the boundaries of chemistry with other applied and fundamental sciences. The major in Chemistry provides you with a solid chemical education but also allows you to incorporate subjects such as Biological Sciences or Physics.

Our School of Chemical Sciences also offers undergraduate qualifications in Medicinal Chemistry and Food Science and Nutrition and postgraduate qualifications in Food Science, Forensic Science, Medicinal Chemistry and Wine Science for those students who seek extended applications of their chemical education.

We welcome you to our School of Chemical Sciences, and hope you are inspired by our vibrant intellectual community.

GORDON MISKELLY
Head of School

Bachelor of Science in Chemistry

Studying chemistry will help you understand and appreciate the world in which you live. Advances in chemistry have had an enormous influence on our modern lifestyle and standard of living. Inventions such as semiconductors, polymers, pharmaceuticals and advanced materials of all kinds are based on chemical science. The study of chemistry leads to a deep appreciation of the scientific method, particularly the intellectual skills needed to develop new theories and to design experiments to test the validity of these theories.

Preparation for school leavers

Preparatory chemistry online is designed to assist prospective first year chemistry students who have had some years away from formal study, or who do not have a strong background in chemistry.

www.chemistry.auckland.ac.nz/preparatory

For course planning and enrolment:

www.science.auckland.ac.nz/student-centre



Complementary majors

A double major is strongly recommended as it will enhance your career options by providing a broader base of skills and knowledge.

CHEMISTRY +

[Biology](#)

[Geography](#)

[Earth Sciences](#)

[Environmental Science](#)

[Geophysics](#)

[Pharmacology](#)

[Physics](#)

[Physiology](#)

www.science.auckland.ac.nz/doublemajors

BSc degree planner – Chemistry

BSc

Year 1

CHEM 110	CHEM 120	MATHS 110*					
-------------	-------------	---------------	--	--	--	--	--

*With appropriate prerequisites can also be filled by Stage II or III. *MATHS 108 or 150 can also be counted.*

Year 2

CHEM 210-240	CHEM 210-240	CHEM 210-240						GEN ED
-----------------	-----------------	-----------------	--	--	--	--	--	--------

**We recommend selecting all four CHEM 210-240 courses and consider CHEM 260 as an additional option*

Any Stage

**We strongly recommend taking additional papers from related subjects such as Mathematics, Physics, Biological Sciences, and Statistics*

Year 3

CHEM 310-340	CHEM 310-340	CHEM 310-392	CHEM 310-392					GEN ED
-----------------	-----------------	-----------------	-----------------	--	--	--	--	--------

Stage III Science

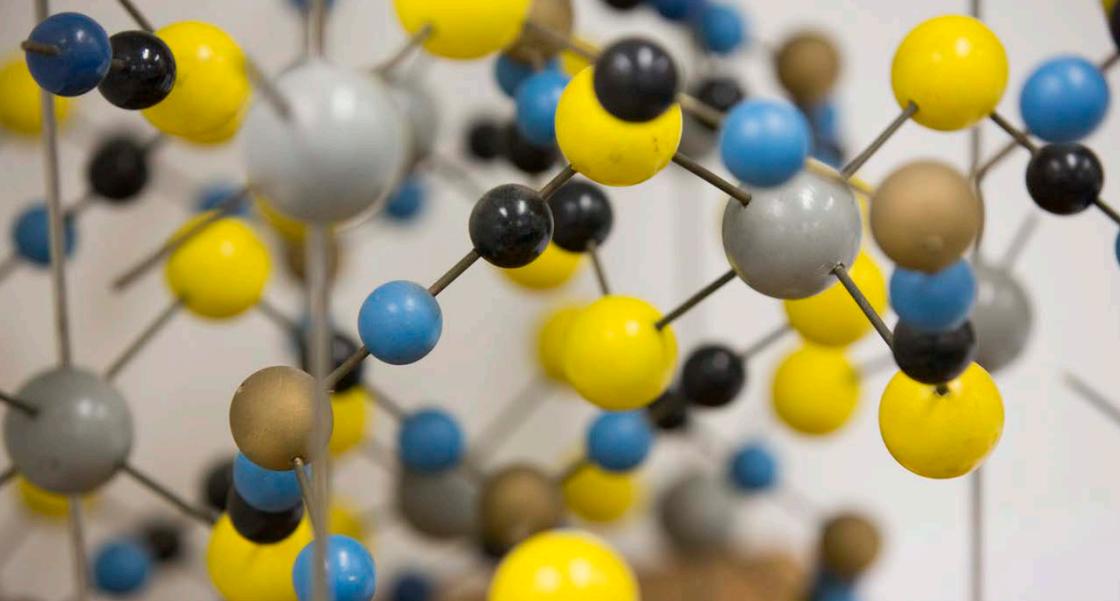
Stage II or III Science

1. Courses in a minimum of three subjects listed in the BSc Schedule.
2. At least 180 points (12 courses) must be above Stage I.
3. Up to 30 points (two courses) may be taken from outside the faculty.
4. 30 points (two courses) must be taken from the appropriate General Education Schedules for BSc students.
5. At least 75 points must be at Stage III, of which 60 points must be in the majoring subject.

It is the student's responsibility to check that the final programme complies with University Regulations. The Faculty of Science is the final authority on all BSc regulations.

To view regulations for majors, and course descriptions, see www.calendar.auckland.ac.nz
BSc degree requires: 360 points (24 x 15 point courses). Each box represents one 15 point course.
We recommend that students enrol in eight courses each year.

Degree Planners for double majors can be found at www.science.auckland.ac.nz/course-planning



Undergraduate Chemistry Courses

Stage I

CHEM100/100G	Molecules that Changed the World
CHEM110	Chemistry of the Living World
CHEM120	Chemistry of the Material World
CHEM150	Concepts in Chemistry

Stage II

CHEM210	Physical and Materials Chemistry
CHEM220	Inorganic Compounds Structure, Bonding and Reactivity
CHEM230	Molecules for Life: Synthesis and Reactivity
CHEM240	Measurement and Analysis in Chemistry and Health Sciences
CHEM260	Introduction to Green Chemistry

Stage III

CHEM310	Structural Chemistry and Spectroscopy
CHEM320	Design and Reactivity of Inorganic Compounds
CHEM330	Contemporary Organic Chemistry
CHEM340	Advanced Analytical Chemistry
CHEM350, CHEM350A/B	Topics in Chemistry: Modular Course
CHEM360	Contemporary Green Chemistry
CHEM380	Materials Chemistry
CHEM390	Medicinal Chemistry
CHEM392	Issues in Drug Design and Development

For course descriptions and prerequisite information: www.chemistry.auckland.ac.nz/courses

Careers in Chemistry

Career opportunities for Chemistry graduates are many and varied. In industry you might be employed in research and development, quality control, marketing, sales or management. Some of the industries that regularly employ chemists are those involving food, paper, brewing, paint, plastics, ceramics, metals, pharmaceuticals, agricultural products and fertilisers. The public sector employs chemistry graduates for research, analysis and development, both in government laboratories and with regional councils.

- Analytical chemist
- Animal psychologist
- Clinical researcher
- Drug company representative
- Forensic scientist
- Health and safety professional
- Healthcare professional
- Inorganic chemist
- Materials chemist
- Organic chemist
- Pharmaceuticals
- Physical chemist
- Physiologist
- Regulatory analyst
- Research scientist
- Researcher
- Science writer
- Scientific officer
- Secondary school teacher
- Toxicologist

Rupal Madaan is studying toward a Bachelor of Science majoring in Chemistry.

"My interest for chemistry began in high school because I had a fascination with drug designing and biochemistry, and I wanted to know more.

"I chose the University of Auckland because I knew that the Faculty of Science is New Zealand's biggest science faculty and that the education is of a high standard. It is also close to home, not only to make expenses more manageable but it helped to create a smooth transition between high school and University.

"My favourite part of study is the labs because the work we do there relates back to the real world, they can also be a great education tool in order to understand the course better. In Medicinal Chemistry we had to make pharmaceutical drugs and compare them to the commercial ones which was really interesting."



Helpful information

Academic dates

www.auckland.ac.nz/dates

Academic Integrity Course

www.auckland.ac.nz/academic-integrity

Accommodation

www.accommodation.auckland.ac.nz

Buy coursebooks

www.science.auckland.ac.nz/resource-centre

Career Development and Employment Services

www.auckland.ac.nz/careers

Course advice and degree planning in Science

www.science.auckland.ac.nz/student-centre

General education

www.auckland.ac.nz/generaleducation

How to apply

www.apply.auckland.ac.nz

How to enrol

www.auckland.ac.nz/enrolment

International students

www.international.auckland.ac.nz

Māori and Pacific students

www.science.auckland.ac.nz/tuakana

Need help?

www.askauckland.ac.nz

Rainbow Science Network for LGBTI students

www.science.auckland.ac.nz/rainbowsience

Scholarships and awards

www.scholarships.auckland.ac.nz

Support for students

www.science.auckland.ac.nz/support



APPLICATIONS CLOSE ON 8 DECEMBER

**Questions about Chemistry?
chemistry@auckland.ac.nz**

Disclaimer

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



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

Connect with us

Faculty of Science, The University of Auckland
Private Bag 92019, Auckland 1142, New Zealand

Phone: 0800 61 62 63 | Email: scifac@auckland.ac.nz

Web: www.chemistry.auckland.ac.nz



twitter.com/ScienceUoA



www.facebook.com/science.uoa