Welcome to Biomedical Science

Biomedical Science is jointly taught by the Faculty of Science and the Faculty of Medical and Health Sciences, with the programme spread over the City and Grafton Campuses.

This major is designed for very academically able students with an interest in emerging areas of biomedical science. The Biomedical Science programme provides an understanding of the scientific basis of health and disease in humans and animals. This programme will deliver rigorous scientific training in a range of disciplines and students will gain a unique insight into this important area of modern biological research.

This research-led field, which is currently the most rapidly developing area within biological science, attracts a high level of public interest. The University of Auckland is acknowledged as a centre of excellence in biomedical research and the options within the programme at Year 3 reflect our particular strengths.

DR KATE ANGEL
Director, BSc Biomedical Science
Study options in Biomedical Science

Bachelor of Science (BSc) in Biomedical Science
This challenging and immensely rewarding major provides courses in Year 1 and 2 that deliver a strong foundation for a number of majors and professional careers (including medicine), and a unique insight into the principles underlying this important area of modern biological research. In Year 3 students may then follow options to specialise in areas such as cancer biology and therapeutics, molecular biology, cardiovascular biology, genetics and development, microbiology, immunology, neurobiology, nutrition, pharmacology, physiology or reproduction.

Postgraduate study options in Biomedical Science
- Bachelor of Biomedical Science (Honours)
- Postgraduate Diploma in Biomedical Science
- Master of Biomedical Science

www.science.auckland.ac.nz/biomed
www.fmhs.auckland.ac.nz/biomedicalsscience
Students are strongly encouraged to consider postgraduate study.

For course planning and enrolment contact the Science Student Centre
scifac@auckland.ac.nz
Entry into other programmes from Biomedical Science

The Biomedical Science Common Year 1 serves as a gateway in part or whole to many other BSc majors: Biological Sciences, Medicinal Chemistry, Chemistry, Food Science and Nutrition, Pharmacology, Physiology, Psychology, and Exercise Sciences.

It is also the path to selection for several professional programmes:

- MBChB (Medicine)
  www.fmhs.auckland.ac.nz/medicine
- Bachelor of Optometry
  www.optometry.auckland.ac.nz
- Bachelor of Pharmacy
  www.fmhs.auckland.ac.nz/pharmacy

Students should apply at the end of BSc (Biomedical Science) Part 1.

Note: There is no selection advantage between the BHSc and BSc in Biomedical Science as a pathway into Medicine. Selection is based on overall GPA and performance in common core courses. Students should choose their programme according to their ability, interest and preference.

Preparation for school leavers

Students will be selected on the basis of their rank score. We strongly recommend applicants study the school subjects Chemistry and Biology. English-rich subjects and a knowledge of Physics and Statistics is also recommended.

Guaranteed entry scores for school leavers for BSc (Biomedical Science)

- NCEA (Level 3) rank score 280
- CIE (taken in New Zealand) rank score 310
- IB rank score 33

Students who do not meet these scores may apply for Chemistry, Physics or Biological Sciences under the BSc and apply for Biomedical Science the following year. Applications from transferring students will be assessed on a case by case basis.
1. At least 180 points (12 courses) must be above Stage I.
2. 30 points (two courses) must be taken from the appropriate General Education Schedules for BSc students.
3. STATS 101G will not count towards General Education requirements.

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. It is recommend that students enrol in eight courses each year.

Degree Planners for can be found at www.science.auckland.ac.nz/course-planning
## Undergraduate Biomedical Science Courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Title</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
<td></td>
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<tr>
<td>BIOSCI 101</td>
<td>Essential Biology: From Genomes to Organisms</td>
<td>S1</td>
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<tr>
<td>BIOSCI 107</td>
<td>Biology for Biomedical Science: Cellular Processes and Development</td>
<td>S1</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>Chemistry of the Living World</td>
<td>S1</td>
</tr>
<tr>
<td>POPLHLTH111</td>
<td>Population Health</td>
<td>S1</td>
</tr>
<tr>
<td>BIOSCI 106</td>
<td>Foundations of Biochemistry</td>
<td>S2</td>
</tr>
<tr>
<td>PHYSICS 160</td>
<td>Physics for the Life Sciences</td>
<td>S2</td>
</tr>
<tr>
<td>MEDSCI 142</td>
<td>Biology for Biomedical Science: Organ Systems</td>
<td>S2</td>
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<tr>
<td><strong>Year 2</strong></td>
<td></td>
<td></td>
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<tr>
<td>BIOSCI 201</td>
<td>Cellular and Molecular Biology</td>
<td>S1</td>
</tr>
<tr>
<td>BIOSCI 202</td>
<td>Genetics</td>
<td>S2</td>
</tr>
<tr>
<td>BIOSCI 203</td>
<td>Biochemistry</td>
<td>S2</td>
</tr>
<tr>
<td>MEDSCI 205</td>
<td>The Physiology of Human Organ Systems</td>
<td>S1</td>
</tr>
<tr>
<td>MEDSCI 201</td>
<td>Human Structure and Function</td>
<td>S1</td>
</tr>
<tr>
<td>MEDSCI 203</td>
<td>Mechanisms of Disease</td>
<td>S1</td>
</tr>
<tr>
<td>MEDSCI 204</td>
<td>Introduction to Pharmacology and Toxicology</td>
<td>S2</td>
</tr>
<tr>
<td>MEDSCI 206</td>
<td>Introduction to Neuroscience</td>
<td>S2</td>
</tr>
<tr>
<td>BIOSCI 204</td>
<td>Principles of Microbiology</td>
<td>S1</td>
</tr>
<tr>
<td>PSYCH 202</td>
<td>Biopsychology</td>
<td>S2</td>
</tr>
<tr>
<td>MEDSCI 202</td>
<td>Microbiology and Immunology</td>
<td>S1</td>
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</tbody>
</table>

For course descriptions and prerequisite information, go to [www.science.auckland.ac.nz/biomedical-science](http://www.science.auckland.ac.nz/biomedical-science)
## Third year Biomedical Science options

### Year 3

- At least 30 points from BIOSCI 347-358
- At least 30 points from MEDSCI 301-317
- At least 15 points at Stage III from BIOSCI, MEDSCI, CHEM 390, 392 or PSYCH 305

<table>
<thead>
<tr>
<th>Research area</th>
<th>Stage III courses</th>
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<tbody>
<tr>
<td>Cancer Biology and Therapeutics</td>
<td>MEDSCI 301-303</td>
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<tr>
<td></td>
<td>BIOSCI 351, 353, 354, 356, 358, CHEM 390, 392, MEDSCI 306, 314</td>
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<tr>
<td>Cardiovascular Biology</td>
<td>MEDSCI 309, 311, 316</td>
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<td>BIOSCI 350, 351, 353, 354, MEDSCI 301, 305, 317</td>
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<tr>
<td>Cellular and Molecular Biomedicine</td>
<td>BIOSCI 350, 351, 353</td>
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<td>MEDSCI 301, 303-305, 309, 316</td>
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<tr>
<td>Genetics and Development</td>
<td>BIOSCI 351, 354, 356</td>
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<td>BIOSCI 350, 353, MEDSCI 301, 312</td>
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<tr>
<td>Microbiology and Immunology</td>
<td>BIOSCI 349</td>
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<td></td>
<td>MEDSCI 301, 314</td>
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<td></td>
<td>BIOSCI 347, 348, 350-353</td>
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<tr>
<td>Neurobiology</td>
<td>MEDSCI 304, 307, 316, 317</td>
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<td>BIOSCI 350, 351, 353, 354, MEDSCI 309, 312, PSYCH 305</td>
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<tr>
<td>Nutrition</td>
<td>BIOSCI 358, MEDSCI 312, 315</td>
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<td>BIOSCI 348, 351, 353, FOODSCI 301, MEDSCI 301, 306, 307, 314, 316</td>
</tr>
<tr>
<td>Reproduction, Growth and Metabolism</td>
<td>BIOSCI 351, MEDSCI 312, 313</td>
</tr>
<tr>
<td></td>
<td>BIOSCI 350, 353, 354, 356, 358, MEDSCI 301, 314</td>
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</tbody>
</table>
Monique Peattie is studying for a Bachelor of Science majoring in Biomedical Science.

“I enjoyed all the science and maths subjects at high school, and I thought about going on to study science or something towards a career in the health industry. The more I found out about Biomedical Science the more I wanted to do it.

“I enjoy having a mix of lectures and laboratories. I thoroughly enjoy the laboratories that we do for the courses – each one is different. The lab tutors are great to talk to, to discuss the theory behind an experiment, or to demonstrate the use of equipment that we’ve not used before.

“Currently I am planning on doing postgraduate study after I have finished my BSc. After that I would quite like to go into research, or potentially work somewhere involving health promotion.

“Having moved away from home, living in a hall of residence for my first year helped me ease into University life and was a great way of meeting new people and making friends.”
Careers in Biomedical Science

Biomedical science has made transformative contributions over the past decade, stimulating growth in a wide range of industries including agriculture, pharmaceuticals, veterinary science and medical research.

You may find employment in the following areas or industries:

- Biotechnology and pharmaceutical companies
- University and academia
- Private research laboratories
- Crown Research Institutes
- Government agencies
- Environmental Risk Management Authority
- Ministry of Primary Industries
- Ministry of Business, Innovation and Employment as:
  - Analysts
  - Laboratory technicians
  - Scientific officers
  - Teachers
  - Researchers

Employment in biotechnology and pharmaceutical companies is especially buoyant in the United States and Europe, with significant growth expected in New Zealand.
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/rainbowscience

Scholarships and awards
www.scholarships.auckland.ac.nz

Support for students
www.science.auckland.ac.nz/support

APLICATIONS CLOSE ON 8 DECEMBER

Questions about Biomedical Science? scifac@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.