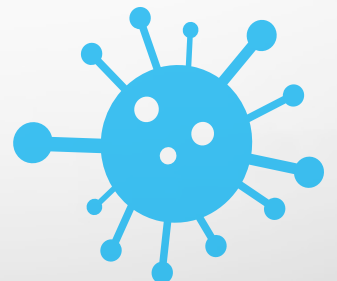


**UNSW**  
AUSTRALIA

# Biotechnology and Biomolecular Sciences

Never Stand Still

Science





## Biotechnology and Biomolecular Sciences (BABS)

The School of BABS is advancing cellular and biomolecular science to make a real difference in the world. By investigating and understanding life at the molecular and cellular level, including life from some of the most extreme environments on earth, our students help solve real-world challenges. Our students benefit from world-class facilities including the Ramaciotti Centre for Genomics, which houses next generation genomic sequencing technology.

## Undergraduate Studies in BABS

### Bachelor of Biotechnology (Honours)

Specialised degrees offer a more structured study program directed towards employment in a particular professional career. The Bachelor of Biotechnology (Honours) provides comprehensive training in all aspects of the multi-disciplinary field of biotechnology. The program includes fundamental teaching in the life sciences, applications of these principles and discussion of commercial and patent considerations. It also incorporates a research-based Honours year providing students with greater experience and confidence in the practice of scientific methods.

**The School of BABS offers the four majors below, all of which can be studied within the programs thereafter:**

- **Biotechnology** makes practical use of the most recent scientific advances in molecular genetics and molecular cell biology to make products and perform services.
- **Molecular and Cell Biology** is a marriage of biochemistry, microbiology and cell biology and has made extensive contributions to the fields of medical DNA analysis, immunology, tissue transplantation, environmental monitoring and many other diverse areas affecting daily life and health.
- **Genetics** is the study of the behaviour of the genes that are fundamental to all living organisms. In humans and all other species, genes influence every characteristic, from chemistry to appearance to behaviour to disease.
- **Microbiology** is the scientific study of the smallest forms of life, namely, bacteria, viruses, archaea, fungi and protozoa. UNSW's microbiologists investigate environmental issues (bioremediation, biofuels), and medical advances (drug discovery, diseases).

### Bachelor of Life Sciences

The Bachelor of Life Sciences brings together the biological, environmental and medical sciences into a far-reaching and fascinating field of study. The life sciences domain will satisfy your innate curiosity about life, from the way things work at the molecular level, to the study of entire ecosystems.

### Bachelor of Science

This degree program provides the widest range of options for study in more than 20 majors of science, providing flexibility and choice as well as insights into different scientific fields.

### Bachelor of Advanced Science (Honours)

This degree program is designed to challenge talented students, providing an early window into the thinking and practice of research. This program differs from the Bachelor of Science by the inclusion of advanced level courses, an Honours year, and options tailored to an individual's aptitude and interests. Students will develop a working knowledge in areas of scientific investigation, and gain practical experience in research and discovery techniques.

### Bachelor of Science (International)

Students undertaking this degree participate in a study exchange for two semesters at an overseas partner university and receive a contribution towards the travel expenses of the overseas exchange. The degree also comprises a science-based major; a minor in a language; and electives that cover cultural studies, international business, development studies and globalisation.

### Bachelor of Science and Business

The Bachelor of Science and Business degree allows students to follow their passion for science and, at the same time, gain vitally important business knowledge to expand their career options. In addition to completing a science major, students select business courses in marketing, business law and/or management.

### Dual Degrees

Dual degrees enable students to combine a Science program with a program from another faculty, offering greater flexibility to explore individual interests, expand skill bases and broaden career prospects.

## What You Will Study in BABS

<b>First Year:</b> Setting the foundations	Molecules, Cells and Genes Mathematics	Applied Biomolecular Sciences Chemistry
<b>Second Year:</b> Exploring BABS	Biochemistry Microbiology Molecular Biology	Molecular Cell Biology Genetics Biotechnology
<b>Third Year:</b> Specialising in a BABS area	<b>Biotechnology:</b> Commercial Biotechnology Professional Issues in Biotechnology Biotechnology and Bioengineering Medical Biotechnology Environmental Biotechnology	<b>Genetics:</b> Genes, Genomes and Evolution Genes in Time and Space Microbial Genetics Molecular Frontiers Bioinformatics
	<b>Microbiology:</b> Environmental Microbiology Bacteria & Disease Viruses and Disease Microbial Genetics Immunology	<b>Molecular and Cell Biology:</b> Human Biochemistry Molecular Cell Biology Molecular Frontiers Molecular Biology of Nucleic Acids Molecular Biology of Proteins
<b>Optional 4th Year:</b> Honours project	A fourth Honours year is available in a number of BABS degree programs and can be undertaken by students who have maintained a credit average or above. The Honours year involves a full-time research project supervised by a BABS researcher. More information about the benefits of Honours is available at <a href="http://babs.unsw.edu.au">babs.unsw.edu.au</a> .	
<b>All years:</b> Broaden your knowledge	Science electives, free electives and general education courses to broaden your knowledge and skill set (number varies between degrees and majors).	

## Admission Details

Program	UAC Code	UNSW Program Code	Length of Study	Entry Requirements
Bachelor of Biotechnology (Honours)	429400	3053	4 years full time	2017 Guaranteed Entry: 85.00 IB: 31 or equivalent
Bachelor of Life Sciences	429050	3966	3 years full time	2017 Guaranteed Entry: 80.00 IB: 29 or equivalent
Bachelor of Science	429000	3970	3 years full time	2017 Guaranteed Entry: 85.00 IB: 31 or equivalent
Bachelor of Advanced Science (Honours)	429350	3962	4 years full time	2017 Guaranteed Entry: 96.00 IB: 37 or equivalent
Bachelor of Science (International)	429420	3987	4 years full time	2017 Guaranteed Entry: 88.00 IB: 32 or equivalent
Bachelor of Science and Business	429100	3925	3 years full time	2017 Guaranteed Entry: 90.00 IB: 34 or equivalent

## Career Opportunities

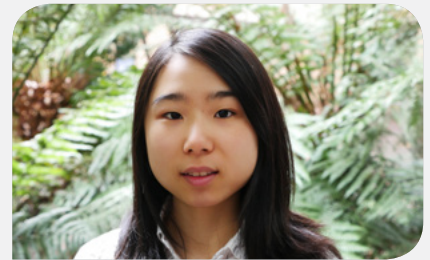
BABS graduates are employed in **hospitals and pathology labs**, **research** and **forensic labs**, **food** and **wine industries**, **pharmaceutical industries**, in **medical sales** and as **technical specialists**, **environmental monitoring agencies**, **science journalism** and communication, **intellectual property protection** and **patent law**, **scientific software companies**, **biotechnology companies** and a number of other areas. Examples of organisations that graduates have worked for after completing a degree in BABS include: Sydney Water, ANSTO, CSIRO, the Australian Museum and the Garvan Institute of Medical Research.

Graduates have the opportunity to develop research skills and knowledge in a particular area through postgraduate study and research. The BABS School offers postgraduate degrees including a **Graduate Diploma**, **Masters by Research** and **Doctor of Philosophy (Research)** in the areas of **Biotechnology**, **Biochemistry and Molecular Genetics**, and **Microbiology and Immunology**.



## Student Testimonials

The School offers a range of opportunities and support to students to drive academic progression and professional development. Being fortunate enough to undertake exchange under the BABS NCP mobility program, the experience has made me further appreciate the School's education standards which are comparable to internationally elite universities. **The School's emphasis on equipping students with the skills and knowledge required for science careers extends beyond traditional methods of tuition, and generous support is provided to encourage professional development through participation in student societies and international competitions.** Under this nurturing environment, I am hopeful that I will complete this enriching journey as a confident, all rounded graduate.



**Wendy Chen**  
Advanced Science/Engineering student  
majoring in Biotechnology



**Mackenzie Labine-Romain**  
Current Honours student

Being part of BABS has allowed me to grow from an uncertain first year with a vague interest in science to a focused and confident Honours student. Coursework gave me the skills and knowledge I needed to get started, and additional opportunities provided by BABS kindled my passion for research. Highlights for me include participating in the iGEM (International Genetically Engineered Machine) competition, pitching a mock biotech company in the Peter Farrell Cup, and going hiking to collect soil samples for an environmental microbiology study. **High standards of research and teaching are complemented with passionate staff and innumerable interesting ways to get involved.**



## School Contact Details

### School of Biotechnology and Biomolecular Sciences

BSB Student Office  
Room G27, Biological Sciences Building (D26)  
UNSW Australia  
Sydney, NSW Australia 2052

**Tel:** +61 2 9385 8047  
**Email:** babstudent@unsw.edu.au  
**Website:** babs.unsw.edu.au

## Science Marketing



### Science Student Centre

Room 128, Robert Webster Building (G11)  
UNSW Australia  
Sydney, NSW Australia 2052

**Tel:** +61 2 9385 7788  
**Fax:** +61 2 9385 4051  
**Email:** studyscience@unsw.edu.au  
**Website:** science.unsw.edu.au

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