Careers Practitioners: A Major in Biomedicine

Professor David A. Williams
Program Director
Bachelor of Biomedicine

Biomedicine at Melbourne

Long and proud tradition of excellence in Biomedicine

Brownless  Halford

The most prestigious and highly regarded international rankings of world universities rank us No. 1 in Australia† and No. 37 in the world overall, and No. 4 in the world for graduate employability.

Biomedicine Prerequisites

Victorian Certificate of Education (VCE)
Units 3 & 4 – a study score of at least 25 in English/English Language/Literature or at least 30 in ESL, Chemistry and Mathematical Methods or Specialist Mathematics

International Baccalaureate (IB)
English, Chemistry and Mathematics. All other prerequisites must be passed to at least Grade 5 at Standard Level or to at least Grade 4 at Higher Level

Minimum ATAR: 95
(ATAR = Australian Tertiary Admission Rank)
Biomedicine has 26 of approximately 60 students that accepted the Chancellor’s Scholars offer in 2012.

Each Scholar receives:
- a Melbourne National Scholarship (HECS-exempt Commonwealth Supported Place (CSP); and Annual allowance of $5000);
- access to the Melbourne Global Scholars Award (funded exchange opportunity);
- access to an internship to further enhance the university experience;
- guaranteed entry into the professional entry Master (By Coursework) degree;
- and a rich, tailored academic mentoring scheme throughout the degree.

For more information:
http://chancellorscholars.unimelb.edu.au/

Each Biomedicine Chancellor’s Scholar is mentored by a Senior Academic Mentor:
- Associate Dean (Academic) MDHS and a practicing GP;
- Chair, Clinical Education and Training/Development and a practicing GP;
- Consultant physician/researcher, RMH, Head, Department of Medicine;
- RMH neurosurgeon, Clinical cancer management;
- Pro Vice Chancellor (Research Partnerships);
- Director of Clinical Education, Melbourne Dental School.
- Acting Clinical Dean, Rural Clinical School, and a GP
- Director of CHESM (Centre for Health, Exercise and Sports Medicine)
- and a student mentor (recent alumnus of Biomedicine currently in a graduate level program)
- Scholars are matched with mentors that complement their graduate interests.
- This is a three year mentoring program.
- The cohort of Biomedicine Chancellor’s Scholars also convene as a group to engage in thematic presentations from one of the Academic mentors, with tours of related University facilities or institutes.

**Biomedicine Course Structure**

<table>
<thead>
<tr>
<th>Task 1</th>
<th>Task 2</th>
<th>Task 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical &amp; Cells</td>
<td>Chemistry for Biomedicine</td>
<td>Biomedicine: From Molecule to Malady</td>
</tr>
<tr>
<td>Senior &amp; Environment</td>
<td>Physics for Biomedicine*</td>
<td>Biomedicine in Health &amp; Disease</td>
</tr>
<tr>
<td>Task 4</td>
<td>Molecular &amp; Cellular Biomedicine</td>
<td>Biomedical Ethics &amp; Law</td>
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<tr>
<td></td>
<td>Human Structure &amp; Function</td>
<td>Biomedical Ethics &amp; Law</td>
</tr>
<tr>
<td>Major (12 Disciplines)</td>
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<td>Breadth</td>
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<td>Breadth</td>
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*Students completing Bioengineering Systems major undertake different units.
**What is a Biomedicine major?**

- A concerted body of study (50pts) undertaken at third year level in the degree.
- Reflects an enhanced depth of understanding in a chosen Biomedical field.
- Contains a Capstone experience that may be largely accentuated in a single, compulsory subject.
- Some majors are 4 specific subjects.
- Some are more flexible, drawing from a collection of eligible (related) subjects.
- Majors do not guarantee or accentuate selection into graduate programs.
- Majors do enhance areas for graduate research programs (Honours and Masters).

**Factors in choosing a Biomedicine major?**

- Interest and passion (these accentuate engagement and performance – GPA).
- Possible graduate research interest.
- Skill sets/graduate skills (the toolkit for a future career).
- Flexibility of subject combinations (some prescribed, some more diverse).
- The identity tag for the degree (I am a Biochemist, I am a Geneticist, I am a Bioengineer).
- Teaching styles/philosophies.
- Assessment types.
- Capstone experiences.

**Biomedicine Majors**

- Biochemistry & Molecular Biology
- Bioengineering Systems
- Biotechnology
- Cell & Developmental Biology
- Defence & Disease
- Genetics
- Human Structure & Function
- Microbiology, Infection & Immunology
- Neuroscience
- Pathology
- Pharmacology
- Physiology
Majors from the core subjects

- Cell & Developmental Biology
- Human Structure & Function
- Neuroscience
- Pathology
- Pharmacology
- Physiology

The core second year subjects Molecular and Cellular Biomedicine, Human Structure and Function) provide pre-requisite knowledge.

YEAR 1

<table>
<thead>
<tr>
<th>Biomedical &amp; Cells</th>
<th>Chemistry for Biomedicine</th>
<th>Mathematics for Biomedicine</th>
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<tbody>
<tr>
<td>Genes &amp; Environment</td>
<td>Physics for Biomedicine</td>
<td>Experimental Design and Data Analysis</td>
</tr>
</tbody>
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YEAR 2

Molecular & Cellular Biomedicine

YEAR 3

Biomedicine: From Molecule to Malady

Physiology:

Frontiers in Physiology (CAPSTONE); at least one of Cardiovascular Health, Muscle & Exercise, Neurophysiology, remainder from wide selection of complementary Biomedical Science subjects (Anatomy, Pharmacology etc).

Biomedicine Majors with additional 2nd year pre-requisites

- Biochemistry & Molecular Biology
- Bioengineering Systems
- Biotechnology
- Defence & Disease
- Genetics
- Microbiology, Infection & Immunology
My Major: Bachelor of Biomedicine

A few reasons I chose the Bachelor of Biomedicine...

"My course has opened my eyes to so many fantastic things that Biomedicine can do for the world and for people less fortunate than us..."

A love of science and human biology was a major influence for third year Bachelor of Biomedicine student Ritu Chaurasia to choose to study at the University of Melbourne.

"I knew I loved science, in particular human biology, but I didn’t know exactly which stream I wanted to venture into..."

When she completes her course wants to stay at Melbourne and embark on the Master of Public Health.
**My Major: Bachelor of Biomedicine**

**Student Support**

**Biomedicine Students Society**
Social, academic and peer/mentoring support for each other.
Important organisers and contributors to information sessions of the Faculty (MDHS).
The 'glue' for the cohort experience in Biomedicine.

**Next Steps**
The ‘Next Steps’ program is an initiative of the Office of the Provost for all UG students provides information and advice in relation to graduate coursework, research and employment opportunities.

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**Biomedicine: Next Steps Program**

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**Where are our Biomedicine Graduates now?**

<table>
<thead>
<tr>
<th>343 Bachelor of Biomedicine students graduated in 2011</th>
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</thead>
<tbody>
<tr>
<td>221 - further study within MDHS</td>
</tr>
<tr>
<td>Doctor of Medicine 124</td>
</tr>
<tr>
<td>Bachelor of Biomedicine (Hons) 69</td>
</tr>
<tr>
<td>Doctor of Dental Surgery 11</td>
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<tr>
<td>Doctor of Physiotherapy 9</td>
</tr>
<tr>
<td>Master of Nursing Science 4</td>
</tr>
<tr>
<td>Master of Clinical Audiology 1</td>
</tr>
<tr>
<td>Master of Public Health 1</td>
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<tr>
<td>Master of Speech Pathology 2</td>
</tr>
<tr>
<td>248 continue to study at University of Melbourne in 2012</td>
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<tr>
<td>37 - further study outside of MDHS</td>
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<tr>
<td>Doctor of Optometry 8</td>
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<tr>
<td>Doctor of Veterinary Medicine 3</td>
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<tr>
<td>Master of Management (Acc) 1</td>
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<tr>
<td>Master of Management (Mrkg) 1</td>
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<tr>
<td>Master of Science (Biomed &amp; Health Sci) 1</td>
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<tr>
<td>Master of Engineering 9</td>
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<tr>
<td>Master of Teaching (Sec) 3</td>
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<tr>
<td>Master of Urban Horticulture 1</td>
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