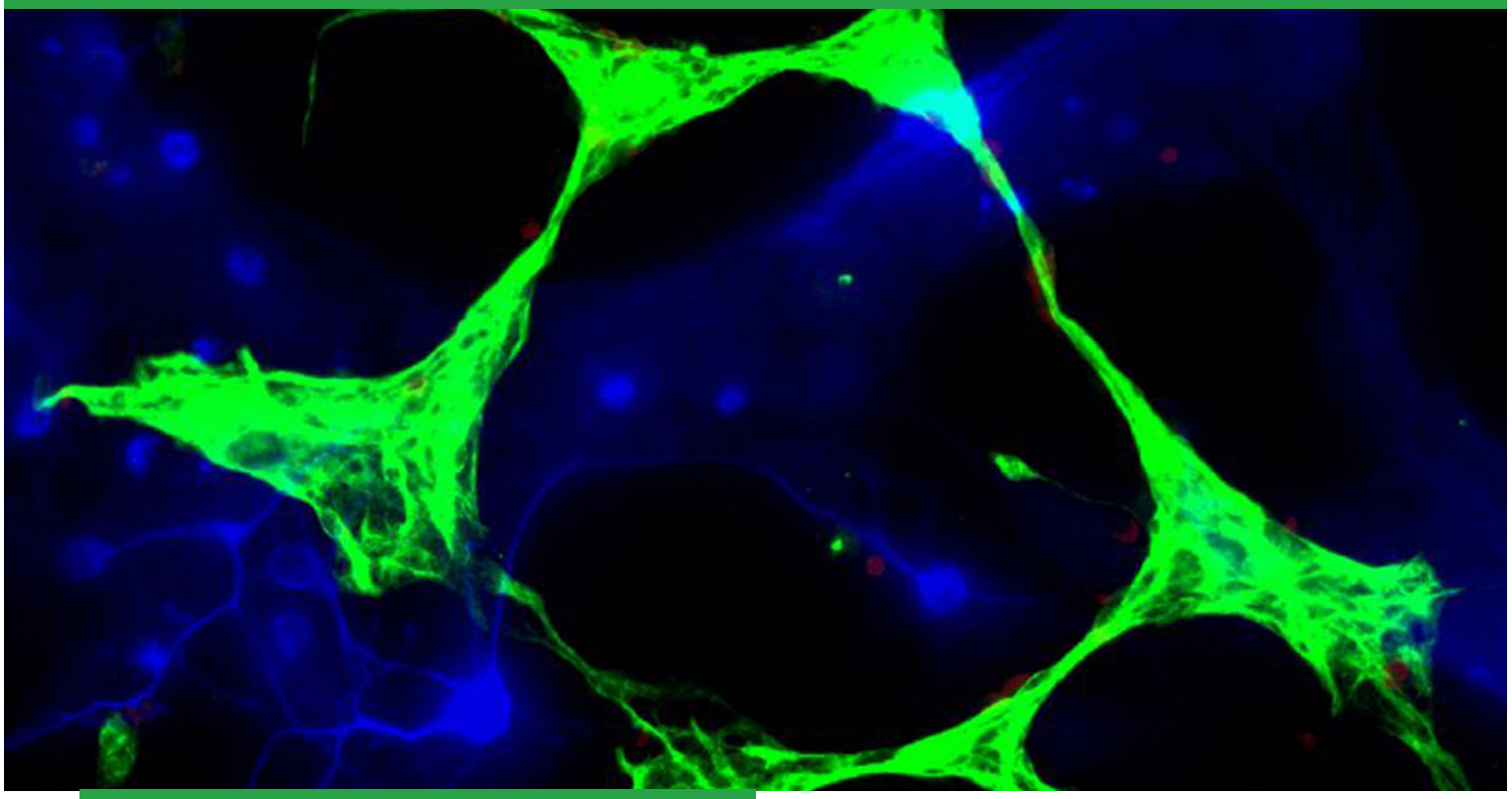
THE UNIVERSITY OF MELBOURNE

CELL AND DEVELOPMENTAL BIOLOGY

SCIENCE AT MELBOURNE



"You start out as a single cell derived from the coupling of a sperm and an egg; this divides in two, then four, then eight, and so on, and at a certain stage there emerges a single cell which has as all its progeny the human brain.
The mere existence of such a cell should be one of the great astonishments of the earth. "

Lewis Thomas (1913-1993)

Cells are the basic building blocks of life. Diseases and disorders like cancer, diabetes, meningitis or even a 'stomach bug' are caused by dysfunction at a cellular or molecular level.

This major will provide you with a broad understanding of cells and their development, as well as the application of this knowledge to technologies to improve the human condition. It will also provide you with an awareness of how research in this field impacts on society. You will deal with ethical issues such as in-vitro fertilisation (IVF), reproductive/therapeutic cloning, stem cell therapy and genetically manipulated foods and crops.

Graduates with a major in Cell and Developmental Biology can pursue career paths in research or diagnostic laboratories, biotechnology, government agencies, agriculture, journalism and the medico-legal area. Be part of future dramatic advances with a major in Cell and Developmental Biology.

coursesearch.unimelb.edu.au

Which courses offer Cell and Developmental Biology?

Bachelor of Science | Bachelor of Biomedicine | Breadth in another undergraduate degree

Plan A: Careers you can pursue with this major

Students majoring in Cell and Developmental Biology will be equipped with a broad knowledge base that would suit employment as a research assistant in the varied biomedical research institutes in the Melbourne area as well as interstate or internationally. These skills would also be applicable to careers with biotechnology companies or companies involved in clinical research, clinical trials or scientific journalism. The generic skills engendered by a Bachelor of Science would be highly applicable to a wide range of careers in industry, finance and management.

Plan B: Graduate/professionally-oriented courses

Graduates of this major will have the option of further study in honours, masters and PhD programs. Some students may qualify for the enrolment in vocational degrees such as the Doctor of Medicine, Doctor of Dental Surgery, Doctor of Physiotherapy, Doctor of Veterinary Medicine, Juris Doctor, Master of Nursing Science and Master of Teaching.

Plan C: Research pathways with this major

The Cell and Developmental Biology Major is run by the Department of Anatomy and Neuroscience but involves teaching staff from zoology, genetics and botany and exposure to subjects in biochemistry, physiology, pathology, and microbiology and immunology. All these departments have strong research programs in cell or developmental biology. In addition, the Department of Anatomy and Neuroscience and its affiliated research institutes have research programs in neuroscience, cell and developmental biology, and cancer research.

Sample course plan

BACHELOR OF SCIENCE (Cell and Developmental Biology)

These subjects are only examples and suggestions. Keep in mind that, depending on your interests, your course plan might look different from this one and that you will not need to choose your major until the end of second year.

Year 1	Biology of Cells and Organisms	Chemistry 1	Calculus 2	Breadth or Elective
	Genetics and the Evolution of Life	Chemistry 2	Linear Algebra	Breadth
Year 2	Fundamentals of Cell Biology	Biochemistry and Molecular Biology	Principles of Genetics	Breadth
	Human Physiology	Techniques in Molecular Science	Principles of Human Structure	Breadth
Year 3	Concepts in Cell and Developmental Biology	Molecular Aspects of Cell Biology	Functional Genomics and Bioinformatics	Breadth or Elective
	Developmental Biology	Stem Cells in Development and Regeneration	Cell Signaling and Neurochemistry	Breadth

Subjects leading to the major
Major subjects
Other science subjects to complement the major
Breadth

Major: All Bachelor of Science students must complete one major. A major comprises 50 points (four subjects) that build on first- and second-year study.

Breadth component: All Bachelor of Science students must take subjects from outside the sciences, technology and engineering systems areas of study. This is referred to as 'breadth' and more information can be found at breadth.unimelb.edu.au

Your breadth subject choices should total at least 50 points (four subjects) of your undergraduate degree. An additional component of 25 points (two subjects) is free to be taken as either core science, breadth, or a combination of the two. You may take no more than 37.5 points (three subjects) of breadth at first-year level.

For a complete overview of subjects available in the Sciences, visit the Course and Subject Handbook: handbook.unimelb.edu.au, the Bachelor of Science website: bsc.unimelb.edu.au, or the Bachelor of Biomedicine website: bbiomed.unimelb.edu.au