

THE UNIVERSITY OF QUEENSLAND

Bachelor of Science (Pre-medicine Study Plans)

The Bachelor of Science provides close to an infinite array of possible study plans that also allow students to prepare appropriately for subsequent study in the MD program. The study plans below provide some examples to illustrate the diversity of the possible study plans. Academic advisors will be able to help to devise a specific program of study to meet each particular student's interests and aptitudes.

- Majors in Biochemistry & Molecular Biology, Biomedical Science (single or extended), Genetics or Microbiology involve primary study in areas that are relevant to Medicine, and can readily meet the recommended prior areas of study for the UQ MD program, including 2nd level Anatomy, Biochemistry and Physiology. In addition, it is possible to include elective courses in a broad range of areas that are also relevant to subsequent MD studies, such as Psychology, Sociology, Nutrition, Exercise Science, etc., as illustrated by the examples below.
- Majors in other areas of Science can also be undertaken, along with 1st and 2nd level courses in biology and chemistry to cover the recommended prior study areas.
- Students have the option, if they wish, to undertake undergraduate research experiences during the Bachelor of Science, by including one or two research courses in their program or making a significant commitment to research by completing the Advanced Study Program in Science (ASPinS). Although not shown in these plans, a research project course may be completed in the summer semester (in place of another course from one of the semesters), typically between Years 2 and 3, and this may be supported by a summer scholarship.
- Most of the below study plans assume a student has completed Queensland Year 12 or equivalent Chemistry. Students without Queensland Senior Chemistry or equivalent should complete CHEM1090 before taking any other chemistry course.

Bachelor of Science – Major in Biochemistry & Molecular Biology

This plan allows students to meet the requirements of the major in Biochemistry & Molecular Biology (codes shown in red), and the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology. This plan also includes a 3rd level research project (SCIE3260), 2nd level Microbiology & Immunology, Cell Biology, Genetics and Pharmacology, and elective Psychology, Nutrition and Sociology.

	Semester 1		Semester 2	
Year One	BIOL1020	Genes, Cells & Evolution	BIOL1040	Cells to Organisms
	CHEM1100	Chemistry 1	CHEM1200	Chemistry 2
	SCIE1000	Theory & Practice in Science	PSYC1020	Introduction to Psychology: Physiological & Cognitive Psychology
	PHYS1171	Physical Basis of Biological Systems	STAT1201	Analysis of Scientific Data
Year Two	BIOC2000	Biochemistry & Molecular Biology	BIOL2202	Genetics
	BIOL2200	Cell Structure & Function	BIOM2012	Systems Physiology
	BIOM2020	Human Anatomy	BIOM2402	Principles of Pharmacology
	BIOM2011	Integrative Cell & Tissue Biology	MICR2000	Microbiology & Immunology
Year Three	BIOC3000	Advanced Biochemistry & Molecular Biology	BIOC3006	Biochemistry of Metabolism in Health & Disease
	BIOL3004	Genomics & Bioinformatics	SCIE3260	Introduction to Research in Chemistry, Biochemistry & Microbiology (A)
	BIOL3006	Molecular Cell Biology	SOCY1030	Introduction to Health, Illness & Society
	NUTR2101	Nutrition Science	NUTR3201	Advanced Nutrition Science

Bachelor of Science – Extended Major in Biomedical Science

This plan allows students to meet the requirements of the extended major in Biomedical Science (codes shown in red), and the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology. This plan also includes 2nd level Microbiology & Immunology, Cell Biology, Genetics and Pharmacology, elective Psychology and Nutrition and a research project (SCIE3220).

	Semester 1		Semester 2	
Year One	BIOL1020	Genes, Cells & Evolution	BIOL1040	Cells to Organisms
	CHEM1100	Chemistry 1	CHEM1200	Chemistry 2
	SCIE1000	Theory & Practice in Science	PSYC1020	Introduction to Psychology:

				Physiological & Cognitive Psychology
	PHYS1171	Physical Basis of Biological Systems	STAT1201	Analysis of Scientific Data
Year Two	BIOC2000	Biochemistry & Molecular Biology	BIOL2202	Genetics
	BIOL2200	Cell Structure & Function	BIOM2012	Systems Physiology
	BIOM2011	Integrative Cell & Tissue Biology	BIOM2402	Principles of Pharmacology
	BIOM2020	Human Anatomy	MICR2000	Microbiology & Immunology
Year Three	BIOM3014	Molecular & Cellular Physiology	BIOM3015	Integrative Physiology & Pathophysiology
	SCIE3220	Biomedical Science Research Skills	BIOM3200	Biomedical Science
	BIOM3002	Human Biomedical Anatomy	NEUR3002	The Integrated Brain
	PSYC1030	Introduction to Psychology: Developmental, Social & Clinical Psychology	NUTR2003	Nutrition in the Lifespan

Bachelor of Science – Extended Major in Biomedical Science – and ASPinS

This plan allows students to meet the requirements of the extended major in Biomedical Science (codes shown in red), and the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology, as well as Psychology. This plan shows how the requirements of the Advanced Study Program in Science (ASPinS) can be included for students who wish to take the opportunity for a major program of undergraduate research and gain a place in the ASPinS program.

	Semester 1		Semester 2	
Year One	BIOL1020	Genes, Cells & Evolution	BIOL1040	Cells to Organisms
	CHEM1100	Chemistry 1	CHEM1200	Chemistry 2
	SCIE1000	Theory & Practice in Science	SCIE2011	Perspectives in Science
	PHYS1171	Physical Basis of Biological Systems	STAT1201	Analysis of Scientific Data
Year Two	BIOC2000	Biochemistry & Molecular Biology	MICR2000	Microbiology & Immunology
	BIOL2200	Cell Structure & Function	BIOL2202	Genetics
	BIOM2011	Integrative Cell & Tissue Biology	BIOM2012	Systems Physiology
	BIOM2020	Human Anatomy	SCIE3011	Perspectives in Science Research
Year Three	BIOL3003	Advanced Immunology	MICR3001	Microbes & Human Health
	MICR3003	Molecular Microbiology	BIOM3200	Biomedical Science
	SCIE3260	Introduction to Research in Chemistry, Biochemistry & Microbiology (A)	BIOC3003	Human Molecular Genetics and Disease
	PSYC1020	Introduction to Psychology: Physiological & Cognitive Psychology	PSYC1030	Introduction to Psychology: Developmental, Social & Clinical Psychology

Bachelor of Science – Major in Genetics

This plan allows students to meet the requirements of the major in Genetics (codes shown in red), and the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology. This plan also includes some advanced Physiology and elective Sociology.

	Semester 1		Semester 2	
Year One	BIOL1020	Genes, Cells & Evolution	CHEM1200	Chemistry 2
	BIOL1030	Global Challenges in Biology	BIOL1040	Cells to Organisms
	CHEM1100	Chemistry 1	PHYS1171	Physical Basis of Biological Systems
	SCIE1000	Theory & Practice in Science	STAT1201	Analysis of Scientific Data
Year Two	BIOL2010	Ecology	BIOL2201	Evolution
	BIOC2000	Biochemistry & Molecular Biology	BIOL2202	Genetics
	BIOL2200	Cell Structure & Function	BIOM2012	Systems Physiology
	BIOM2011	Integrative Cell & Tissues Biology	BIOM2208	Differentiation & Development
Year Three	BIOL3390	Genome Evolution	BIOL3350	Genetics & Evolution of Complex Traits
	BIOL3004	Genomics & Bioinformatics	BIOM3015	Integrative Physiology & Pathophysiology
	DEVB3002	Stem Cells & Regenerative Medicine	BIOC3003	Human Molecular Genetics and Disease
	BIOM2020	Human Anatomy	SOCY1030	Introduction to Health, Illness & Society

Bachelor of Science – Major in Microbiology

This plan allows students to meet the requirements of the major in Microbiology in the area of Parasitology (codes shown in red), and the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology. This plan also includes 2nd level Cell Biology and Genetics, and elective Psychology, Sociology and eHealthcare.

	Semester 1	Semester 2
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Year One	BIOL1020	Genes, Cells & Evolution	BIOL1040	Cells to Organisms
	CHEM1100	Chemistry 1	CHEM1200	Chemistry 2
	SCIE1000	Theory & Practice in Science	PSYC1020	Introduction to Psychology: Physiological & Cognitive Psychology
	BIOL1030	Global Challenges in Biology	STAT1201	Analysis of Scientific Data
Year Two	BIOC2000	Biochemistry & Molecular Biology	MICR2000	Microbiology & Immunology
	BIOL2200	Cell Structure & Function	BIOL2202	Genetics
	BIOM2011	Integrative Cell & Tissue Biology	BIOM2012	Systems Physiology
	BIOM2020	Human Anatomy	SOCY1030	Introduction to Health, Illness & Society
Year Three	BIOL3009	Arthropods & Human Health	MICR3001	Microbes & Human Health
	BIOL3003	Advanced Immunology	MICR3004	Microbial Genetics
	MICR3002	Virology	ANAT3022	Functional Neuroanatomy
	PHYS1171	Physical Basis of Biological Systems	HLTH2000	e-Healthcare

Bachelor of Science – Majors in Marine Science and Biomedical Science

This plan allows students to meet the requirements of two majors – Biomedical Science (**codes shown in red**) and also a major that is unrelated to the biomedical sciences, e.g. Marine Science (**codes shown in blue**). This plan also meets the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology.

	Semester 1		Semester 2	
Year One	BIOL1020	Genes, Cells & Evolution	BIOL1040	Cells to Organisms
	CHEM1100	Chemistry 1	CHEM1200	Chemistry 2
	ERTH1000	Planet Earth: The Big Picture	BIOL2202	Genetics
	BIOL1030	Global Challenges in Biology	STAT1201	Analysis of Scientific Data
Year Two	MARS2014	Marine Science	SCIE3220	Biomedical Science Research Skills (preferably Summer Semester)
	BIOL2200	Cell Structure & Function	BIOL2204	Zoology
	BIOM2011	Integrative Cell & Tissue Biology	BIOM2012	Systems Physiology
	BIOL2006	Biostatistics & Experimental Design	BIOM2402	Principles of Pharmacology
Year Three	MARS3012	Physical-Biological Oceanography	ANAT3022	Functional Neuroanatomy
	BIOM2020	Human Anatomy	BIOL3340	Fish, Fisheries & Aquaculture
	BIOM3401	Systems Pharmacology	BIOL3023	Tropical Marine Ecosystems
	BIOL3330	Marine Biology Field Studies	BIOM3200	Biomedical Science

Bachelor of Science – Major in Mathematics (with significant Anatomy component as well)

This plan allows students to meet the requirements of a major that is unrelated to the biomedical sciences that underpin Medicine – taking the example of a major in Mathematics (**codes shown in red**). This plan also meets the recommended areas of prior study for the MD of 2nd level Biochemistry, Anatomy and Physiology and their 1st level prerequisites, as well as including 3rd level Anatomy. The plan assumes that the student has completed pre-University studies in Mathematics C and Physics but not Chemistry.

	Semester 1		Semester 2	
Year One	MATH1051	Calculus & Linear Algebra I	MATH1052	Multivariate Calculus & Ordinary Differential Equations
	MATH1061	Discrete Mathematics	CHEM1100	Chemistry 1
	CHEM1090	Introductory Chemistry	BIOL1040	Cells to Organisms
	BIOL1020	Cells, Genes & Evolution	STAT1201	Analysis of Scientific Data
Year Two	MATH2001	Advanced Calculus & Linear Algebra	MATH2100	Applied Mathematical Analysis
	MATH2400	Mathematical Analysis	BIOL2202	Genetics
	BIOM2011	Integrative Cell & Tissues Biology	BIOM2012	Systems Physiology
	BIOM2020	Human Anatomy	CHEM1200	Chemistry 2
Year Three	MATH3401	Complex Analysis	MATH3403	Partial Differential Equations
	MATH3402	Functional Analysis	MATH3404	Optimisation Theory
	BIOM3002	Human Biomedical Anatomy	BIOM3003	Functional Musculoskeletal Anatomy
	BIOC2000	Biochemistry & Molecular Biology	PSYC1020	Introduction to Psychology: Physiological & Cognitive Psychology