Biochemistry and Molecular Biology

Year and Campus:	2016
Coordinator:	Dr Terry Mulhern
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Overview:	Biochemistry and Molecular Biology are key biological science disciplines. The knowledge and techniques of the disciplines are applied in many biological fields and have fuelled rapid advances in medical research and biotechnology. This major will provide the springboard for students to enter careers including medical research, biotechnology, agricultural and medical support industries, education etc. This major will develop knowledge in key basic biological processes as well as more specialized areas of molecular science. In addition, an emphasis is placed on developing a foundation in practical skills required for a career as a laboratory scientist. The major will also develop skills in communication, team-work and research essential in the modern scientific workplace.
Learning Outcomes:	*Biochemistry and Molecular Biology Major Graduates should demonstrate:* # broad knowledge of the range of structures, functions and interactions of biologically important molecules including proteins and nucleic acids; # appreciation of the fundamental importance of these molecules in biological processes, biomedicine and biotechnology; # broad knowledge of the structure and expression of genomes in higher organisms and the technologies used to analyse and manipulate genes to discover gene function or to modify phenotype # awareness of the experimental and computational techniques that determine and predict protein structure and function and an understanding of the principles of protein engineering and its impact on life science and biotechnology; # practical and theoretical understanding of the scientific methods and research skills in modern molecular life science required to investigate the role of gene and protein expression and regulation; # understanding of the significance and applications of genomics and bioinformatics in biotechnology and biomedicine; # skills in the evaluation and synthesise of information from a wide range of sources and how to apply these to understand the international peer-reviewed scientific literature and primary research in several different disciplines; # effective communication of science generally and biochemical concepts specifically, both written and orally in a structured format, to professional audiences; # awareness of ethical issues biochemistry and molecular biology, particularly in relation to genome sequencing and genetic engineering.
Structure & Available Subjects:	Completion of 50 points of study at Level 3.
Subject Options:	All three of

Subject	Study Period Commencement:	Credit Points:
BCMB30001 Protein Structure and Function	Semester 2	12.50
BCMB30002 Functional Genomics and Bioinformatics	Semester 1	12.50
BCMB30010 Advanced Techniques in Molecular Science	Semester 1, Semester 2	12.50

Plus one elective selected from

Subject	Study Period Commencement:	Credit Points:
BCMB30003 Molecular Aspects of Cell Biology	Semester 1	12.50

	BCMB30004 Cell Signalling and Neurochemistry	Semester 2	12.50
	BIOM30003 Biomedical Science Research Project	Summer Term, Semester 1, Semester 2	12.50
	BCMB30011 Metabolism and Nutrition	Semester 1	12.50
	Or one third year level subject from one of the following majors: Cell and Developmental Biology, Chemistry, Genetics, Human Structure and Function, Microbiology, Infection and Immunology, Neuroscience, Pathology, Pharmacology, Physiology, Plant Science, Science Informatics, Zoology.		
Notes:	A quota has been applied to a core subject in this major.		
Related Course(s):	Bachelor of Biomedicine Bachelor of Science		