Graduate Certificate in Biotechnology (LS66)

Year offered: 2011
Admissions: Yes
CRICOS code: 054278A
Course duration (full-time): 1 semester (0.5 year)
Course duration (part-time): 2 semesters (1 year)
Domestic Fees (indicative): 2011: Full fee tuition $7,375 (indicative) per semester
International Fees (indicative): 2011: $11,625 (indicative) per semester
Domestic Entry: July (Note: Students commencing in July, enrol in Semester 2 units first) (Students are NOT able to commence LS66 in February)
International Entry: July (Students are NOT able to commence LS66 in February)
Total credit points: 48
Standard credit points per full-time semester: 48
Standard credit points per part-time semester: 24
Course coordinator: Dr Mark O’Brien
Campus: Gardens Point

Overview
The postgraduate coursework programs will suit anyone who has a recent undergraduate degree (preferably, however not necessarily, in science) and who wishes to gain training and advanced specialisation in general, medical and/or plant biotechnology. The programs also cater for working scientists, support staff or students involved in commercial aspects of biotechnology, who wish to update their theoretical and practical biotechnology skills.

Science-based biotechnology units emphasising laboratory skills and hands-on laboratory experimentation feature prominently in the programs, which cover contemporary techniques in biotechnology. New technology is incorporated as it becomes available. The programs also offer students opportunities to pursue studies related to the business of biotechnology, marketing, commercialisation, as well as the legal and ethical aspects of biotechnological applications.

Course Design
The program of study for an individual student will be decided in consultation with the course coordinator and will take into account the student’s background in the cell and biomolecular sciences and areas of interest in biotechnology.

The Graduate Certificate in Biotechnology is a foundation program for people without a science degree or for those who do not have a recent background in the cell and biomolecular sciences. Fundamental aspects of cell and molecular biology, biochemistry and microbiology are covered in this first program. Successful completion of this program allows students to then specialise in more advanced aspects of biotechnology. The Graduate Certificate in Biotechnology also allows students to gain essential generic skills and attributes for successful postgraduate research and learning.

Students must commence in July and enrol in Semester 2 units first. Advanced standing (credit) may be given for this foundation program if the student has a degree or equivalent with recent and appropriate undergraduate-level knowledge and practical experience in the key areas of molecular biology, cell biology, biochemistry and/or microbiology at an advanced level. If advanced standing (credit) is granted and accepted students can enrol directly in any of the more advanced biotechnology programs in their first semester of study.

Further information
For further information about this course, please contact:

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Course structure - Full-time

Year 1, Semester 2 (MODULE 1)
LSN101 Molecular Biosciences
LSN102 Cellular Biosciences
LSN103 Postgraduate Learning and Research Skills
LSN483 Molecular Biology Techniques

Course structure - Part-time

Year 1, Semester 2 (MODULE 1)
LSN101 Molecular Biosciences
LSN102 Cellular Biosciences

Year 2, Semester 2 (MODULE 1)
LSN103 Postgraduate Learning and Research Skills
LSN483 Molecular Biology Techniques

Potential Careers:
Biochemist, Biotechnologist, Medical Biotechnologist, Microbiologist, Molecular Biologist, Plant Biotechnologist, Research Assistant, Scientist, Virologist.
UNIT SYNOPSES

LSN101 MOLECULAR BIOSCIENCES
For you to be successful in the more advanced units offered in the coursework programs in biotechnology you must have a sound knowledge and understanding in the key areas of molecular biology, cell biology, biochemistry and microbiology and be able to demonstrate your learning in a practical way in the laboratory. This unit, in conjunction with LSN102 Cellular Biosciences and LQB483 Molecular Biology Techniques, will help you to achieve those goals. This unit aims to facilitate your active learning (knowledge, understanding and application) of cell and molecular biology appropriate for a postgraduate degree in biotechnology.

Corequisites: LSN101, LSN483
Assumed knowledge: Students should enrol in either LSN102 or LSN483 in the same semester if not already completed
Credit points: 12
Contact hours: 5 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

LSN102 CELLULAR BIOSCIENCES
Central to your understanding of the fundamental theory underlying medical and plant biotechnology is an understanding of normal and disease processes, and the events and changes that occur in structure and function at the cellular level. This unit gives you the opportunity to explore these key aspects before proceeding to more advanced concepts in biotechnology. This unit aims to provide high level understanding of cellular processes and responses, as a fundamental basis for further postgraduate studies in cellular and molecular biosciences.

Corequisites: LSN101, LSN483
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

LSN103 POSTGRADUATE LEARNING AND RESEARCH SKILLS
This unit assists you in developing of a range of generic and specific skills and attributes to be a successful postgraduate student. On completion of the unit, you will: (i) know how to manage information tools and resources effectively in order to advance your university study and become an independent and competent learner (ii) build and increase your knowledge and competence in using basic software applications and general knowledge of information communication technologies and (iii) develop key skills in project design and management. This unit consists of a series of workshops, seminars and on-line tutorials presented by a team of teaching and learning support staff from across the university.

Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

LSN483 MOLECULAR BIOLOGY TECHNIQUES
Fundamental and advanced skills in molecular biology are essential prerequisites for biotechnology. Through close alignment of theoretical concepts and practical skills, this strongly lab-oriented postgraduate unit allows you to develop expertise in modern recombinant DNA techniques and an understanding of strategies used to identify and manipulate genes. Integration between theory and practice in this unit is designed to develop competence, independence and high-order critical thinking skills so as to fully prepare you for the suite of advanced units in the Postgraduate Coursework Biotechnology programs. The overall aim of this unit is to develop concepts and laboratory skills in the characterisation and analysis of nucleic acids and recombinant DNA technologies and to extend these technologies into the understanding and application of the different strategies for gene discovery.

Corequisites: LSN101, LSN102
Assumed knowledge: Students should enrol in either LSN101 or LSN102 in the same semester if not already completed.
Equivalents: LQB483, LSB468
Credit points: 12
Contact hours: 5
Campus: Gardens Point
Teaching period: 2011 SEM-2