
2006 Faculty of Science Handbook errata

The following are corrections to the printed version of the 2006 Faculty of Science Handbook. Corrections are arranged by Chapter, and then by page number. For further information please contact the Faculty of Science Student and Information Office, or the relevant School, Discipline or Unit. Information correct as at 13 January 2006.

1. Contact information

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Discipline of Pathology

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2. Undergraduate enrolment advice and policies

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Physics

Major is offered at the Advanced level.

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Bachelor of Science and Technology (BST)

Enrolment Guide

In your Junior year, you should complete:

- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 12 credit points of Junior units of study from the subject areas of Experimental Science (from Table VIIb);
- 12 credit points of Junior units of study from Science, Engineering or Architecture (from Table VIId).
- 12 credit points of Junior units of study from Science, Engineering or Architecture.

To complete your degree you must gain credit for at least 144 credit points, comprising:

- a minimum of 12 credit points in the subject area of Mathematics and Statistics;
- a minimum of 12 credit points in Experimental Science units of study from those specified in Table VIIb (2006 Faculty of Science Handbook, Chapter 3);
- a minimum of 12 credit points in Science/Technology associated Humanities and Social Sciences units of study from those specified in Table VIIc (2006 Faculty of Science Handbook, Chapter 3);
- a minimum of 12 credit points in Technology/Applied Science units of study from those specified in Table VIId (2006 Faculty of Science Handbook, Chapter 3);
- a minimum of 72 credit points in senior or intermediate units of study, or in units of study normally taken at second or third year level or higher;

a major, as specified in Table I of the Bachelor of Science, or as listed in Table VIIe (2006 Faculty of Science Handbook, Chapter 3). A major in the BST requires a minimum of 36 credit points at intermediate (2000) and senior (3000) levels, including a minimum of 12 credit points at senior level, except in the case of a major in a Science subject area, which normally requires the completion of 24 credit points of senior-level units of study, in addition to any other units of study specified in the table as compulsory for that major.

3. Undergraduate tables and units of study

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Cell Pathology

For a major in Cell pathology, the minimum requirement is 24 credit points from:

- (i) CPAT 3201 and CPAT 3202; and
- (ii) any two of the listed units of study:

Senior units of study

The completion of 6 credit points of MBLG units of study is highly recommended.

CPAT 3201	Pathogenesis of Human Disease 1	6	P At least 6cp intermediate of one of the following: ANAT or BCHM or MBLG or BIOL or HPSC or MICR or PCOL or PHSI, or as the Head of Discipline determines.
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CPAT 3202	Pathogenesis of Human Disease 2	6	P At least 6cp intermediate of one of the following: ANAT or BCHM or MBLG or BIOL or HPSC or MICR or PCOL or PHSI, or as the Head of Discipline determines.
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HSTO3001, HSTO3002, HSTO3003, HSTO3004, BCHM3071/3971, BCHM3072/3972, BCHM3081/3982, BCHM3082/3982, MICR3011/3911, MICR3012/3912, MICR3022/3922, PHSI 3005/3905 and PHSI 3006/3906.

Information for these Units may be found under the relevant teaching department entries.

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Table 1F: Bachelor of Science (Nutrition)

C. Senior units of study

In order to proceed to the Senior year, candidates for the BSc (Nutrition) must achieve a WAM of 65 in their Intermediate year. Candidates who fail to maintain the required Credit average will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Science (Nutrition) candidates.

In the Senior year candidates are required to enrol in and complete:

- (i) NUTR 3911, 3921, 3912 and 3922;
- (ii) BCHM (3082 or 3982) and BCHM (3072 or 3972); and
- (iii) AGCH (3025 and 3026) or 12 credit points from the following Senior units of study: BCHM (3071 or 3971), BCHM (3081 or 3981), MICR (3001 or 3901), VIRO (3001 or 3901), NEUR (3001 or 3901), NEUR (3002 or 3902).

Senior units of study

The completion of 6 credit points of MBLG units of study is highly recommended.

NUTR 3911	Nutritional Assessment Methods	6	P NUTR2911 and NUTR2912 N NUTR3901
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NUTR 3921	Methods in Nutrition Practice	6	P NUTR2911 and NUTR2912 N NUTR3901
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NUTR 3912	Community and Public Health Nutrition	6	P NUTR2911 and NUTR2912 N NUTR3902
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NUTR 3922	Nutrition and Chronic Disease	6	P NUTR2911 and NUTR2912 N NUTR3902
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MOBT 3101 Molecular Biotechnology 3A

6 credit points. B Sc (Molecular Biotechnology). Dr. Neville Firth. **Session:** Semester 1. **Classes:** 3 lec, 1 tut/wk. **Prerequisite:** MOBT2102. **Assumed Knowledge:** MBLG2072 or MBLG2972. **Assessment:** One 2 hour theory exam (70%) and in-semester assessments (30%).

NB: Students must pass the theory exam to pass the unit overall.

NB: This unit of study is only available to students in the BSc (Molecular Biotechnology).

This unit of study builds on MOBT 2102 and to expand concepts and applications of modern molecular biotechnology. It assumes students have previously been taught molecular biology and genetics through MBLG 2072/2972. It commences with the synthesis of commercial products by recombinant microorganisms, including small biological molecules, antibiotics, polymers, nucleic acids and proteins, then leads onto large-scale production of proteins from recombinant

microorganisms. Students will be introduced to scaled-up microbial growth and bioreactors, combined with typical large-scale fermentation systems and downstream processing. This will be broadened to an appreciation of yeast and mammalian cells in large-scale production. Examples of major protein-based therapeutics will be examined in detail. The unit introduces students to genome sequencing and technologies, and follows with the impact of proteomics in identifying new drug targets and therapeutics, its interplay with genomics, disease states, quantitative vs. qualitative profiles, and the role of bioinformatics in data and database management. The role of protein structure on function and the engineering of protein structures is briefly described. Agricultural and environmental biotechnology is introduced with a focus on promoting plant

growth, the utilization of starch and cellulose, the application of enzymes in food processing, bioremediation strategies and green manufacturing technologies, and the impact heavy metals and pesticides on the environment. Issues facing start-up companies and the commercialization of discoveries complete the unit.

Textbooks

Molecular Biotechnology: Principles and Applications of Recombinant DNA”, Bernard R. Glick and Jack J. Pasternak, 3rd Edition, 2003, ASM Press, Washington, ISBN 1-55581-224-4 (hardcover) or ISBN 1-55581-269-4 (paperback)

6. Postgraduate degree requirements

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Coursework degrees in Applied Science

Molecular Biotechnology

Graduate Certificate in Applied Science (Molecular Biotechnology)

Graduate Diploma in Applied Science (Molecular Biotechnology)

Master of Applied Science (Molecular Biotechnology)

Units of study

MOBT5101 Applied Molecular Biotechnology A

12 credit points. Dr Neville Firth. **Session:** Semester 1. **Classes:** 2 hrs lectures and 1 tutorial per week. Laboratory session(s). **Assessment:** In semester quizzes/reports and exam.

This unit of study provides a solid foundation for education and training in applied molecular biotechnology. Students are given a molecular-level understanding of the building blocks/biopolymers of life followed by an emphasis upon molecular biology and genetics. Topics covered include: recombinant DNA technology, bioprocessing and proteomics.

MOBT5102 Applied Molecular Biotechnology B

12 credit points. Dr Rachel Codd. **Session:** Semester 2. **Classes:** 2 hrs lectures and 1 tutorial per week. Laboratory session(s). **Assessment:** In semester quizzes/reports and exam.

Students are provided with knowledge of key scientific areas in which advances depend upon an understanding of molecular biotechnology. Applications of molecular biotechnology in environmental/analytical science (bioremediation, biomining, biosensors) and in biomedicine (structure-activity relationships, computational modeling, drug design) are detailed.

8. Staff

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Professor

Nicholas H Hunt, BSc PhD Aston. Appointed 1989

Nicholas JC King, MB ChB Cape T PhD ANU

Associate Professors

Brett D Hambly, BSc(Med) MBBS PhD

MOBT 3102 Molecular Biotechnology 3B

6 credit points. B Sc (Molecular Biotechnology). Dr Kevin Downard. **Session:** Semester 2. **Classes:** 2 lec, 1 tut/wk & 75 hrs industry related project over semester. **Prerequisites:** MOBT2002 or MOBT3101. **Prohibitions:** MOBT3002. **Assessment:** Presentation, project report and theory exam. *NB: This unit of study is only available to students in the BSc (Molecular Biotechnology).*

MOBT5203 Applied Molecular Biotech C (Theory)

6 credit points. Dr Kevin Downard. **Session:** Semester 1. **Classes:** 2 hrs lectures and 1 tutorial per week. **Assessment:** Essay/exam and in semester quizzes/reports.

NB: This unit is available to Masters of Applied Science (Molecular Biotechnology) students only.

This unit of study familiarizes students with the business aspects of biotechnology including taking research from the laboratory to the market. It provides a thorough grounding in key techniques used in Molecular Biotechnology and details select frontiers in the field. These studies provide the foundation for MOBT5303 which is taken following this unit (or concurrently by mid-year entry students).

MOBT5303 Applied Molecular Biotech C (Project)

6 credit points. Dr Kevin Downard. **Session:** Semester 1, Semester 2. **Prerequisites:** MOBT (5101 or 5102). **Corequisites:** MOBT5203. **Assessment:** Report and individual/group presentation.

NB: This unit is available to Masters of Applied Science (Molecular Biotechnology) students only.

This unit of study provides students with the opportunity to experience Molecular Biotechnology in operation by conducting a case study project with an industry affiliate or an on-site industry placement. It assumes students have previously studied or are concurrently studying MOBT5203. Entry to an on-site industry placement is limited by a quota and project/facility availability.

Izuru Matsumoto, MD PhD

Senior Lecturers

Shishan Bao, MB BS Shanghai PhD

Roger S Pamphlett, BSc(Med) MD ChB Cape T, FRACP MRCPPath