Bachelor of Biomedical Science (SC40)

Year offered: 2011
Admissions: Yes
CRICOS code: 052768K
Course duration (full-time): 3 Years
Course duration (part-time): 6 Years
Domestic Fees (indicative): 2011: CSP $2,388 (indicative) per semester
International Fees (indicative): 2011: $12,125 (indicative) per semester
Domestic Entry: February
International Entry: February
QTAC code: 418401
Past rank cut-off: 79
Past OP cut-off: 11
OP Guarantee: Yes
Assumed knowledge: English (4, SA), Maths B (4, SA) and Chemistry (4, SA)
Preparatory studies: For information on acquiring assumed knowledge visit http://www.qut.edu.au/assumed-knowledge
Total credit points: 288
Standard credit points per full-time semester: 48
Standard credit points per part-time semester: 24
Course coordinator: Dr Laura Gregory
Campus: Gardens Point

Career Outcomes
This course provides a solid foundation for the areas tested in GAMSAT. Many opportunities are also available for postgraduate study in health and science, including honours and postgraduate qualifications leading to careers in medical research. The Bachelor of Biomedical Science is also designed for students seeking a science-based qualification that will lead to employment opportunities in medical biotechnology, medical microbiology and clinical biochemistry fields.

Professional Recognition
Depending on the units selected in the final year of the course, graduates will be eligible for membership into one or more of the following organisations: Australian Association of Clinical Biochemists (AACB), AusBiotech Ltd, Australian Society for Microbiology (ASM).

Recommended Study
Biological Science.

Deferment
Domestic students can defer their offer in this course for one year. In exceptional circumstances up to 12 months of additional deferment may be granted.

Limits on grades of 3
A new policy concerning grades of 3 came into effect from 1 January 2009 (QUT MOPP C/5.2). With effect from this date grades of 3 are no longer considered a conceded or low pass but are classified as a fail grade. Any grades of 3 awarded prior to 1 January 2009 retain the conceded pass status and will be counted for graduation purposes up to the maximum number of grades of 3 permitted for your course. Grades of 3 incurred in units that commence after 1 January 2009 will not count towards your degree. Further information is available on the Student Services website

Further Information
For further information about the course, please contact:

Course Coordinator
Dr Laura Gregory
Phone: +61 7 3138 1281
Email: l.gregory@qut.edu.au

Course structure - Full-time

Year 1, Semester 1
MAB141 Mathematics and Statistics for Medical Science
SCB111 Chemistry 1
SCB112 Cellular Basis of Life
Plus ONE elective to be chosen from the following list:
KWB101 Introduction to Creative Writing
PYB007 Interpersonal Processes and Skills
Or another elective to be approved by the course coordinator

Year 1, Semester 2
LSB255 Human Anatomy
PCB150 Physics 1H
SCB121 Chemistry 2
SCB122 Cell and Molecular Biology

Year 2, Semester 1
LQB383 Molecular and Cellular Regulation
LQB386 Microbial Structure and Function
LQB388 Medical Physiology 1
LSB325 Biochemistry
### Year 2, Semester 2
- LQB483 Molecular Biology Techniques
- LQB486 Clinical Microbiology 1
- LSB425 Quantitative Medical Science
- SWB105 Introduction to Human Rights and Ethics

### Year 3, Semester 1
- LQB583 Genetic Research Technology
- LQB584 Medical Cell Biology
- LQB586 Clinical Microbiology 2
- LSB525 Clinical Biochemistry 1

### Year 3, Semester 2
- LQB488 Medical Physiology 2
- LQB684 Medical Biotechnology
- LSB625 Clinical Biochemistry 2
- LSB658 Clinical Physiology

**NOTE:**
Students may substitute ONE unit from EACH of Year 3/Semesters 1 and 2 (or Year 2/Semester 2) with an approved pair of electives from one stream only from the following list, providing that a MATCHING SET of science units is deleted: (ie. [a] LQB583 and LQB684 OR [b] LSB525 and LSB625 OR [c] LQB486 and LQB586). Students may choose to enrol in SCB500 with course coordinator approval based on the completion of 144 credit points of SC40 units. Students may then choose any unit from this list to complete the pair of electives. The elective options are subject to timetabling and campus offerings.

**PSYCHOLOGY AND COUNSELLING**
- PYB100 Foundation Psychology
  - Semester 1:
  - Semester 2:
- PYB208 Counselling Theory and Practice 1
  - Semester 1:
  - Semester 2:

**PUBLIC HEALTH**
- PUB104 Australian Health Care Systems
  - or
  - PUB326 Epidemiology
    - Semester 2:
    - PUB251 Contemporary Public Health
- PUB436 Evidence Based Practice
- EXERCISE SCIENCE FOR PREVENTIVE MEDICINE
  - Semester 1:
  - Semester 2:
  - HMB271 Foundations of Motor Control, Learning and Development
  - HMB273 Exercise Physiology 1
  - INDIGENUOUS PERSPECTIVES
    - Semester 1:
    - Semester 2:
  - EDB038 Indigenous Australian Culture Studies
  - EDB040 Indigenous Knowledge: Research Ethics and Protocols
  - HEALTH AND SCIENCES
  - ECG COURSE
    - ECG Analysis and Interpretation Course is offered at QUT Health Clinics, Kelvin Grove or UQ Sport, St Lucia
    - Semester 1:
    - PUB326 Epidemiology
      - Or
    - LQB588 Applied Medical Physiology
      - Or
    - LSB384 Pharmacology For Health Professionals
      - Semester 2:
      - LQB686 Microbial Technology and Immunology
        - Or
      - LSB384 Pharmacology For Health Professionals

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**Course structure - Part-time**

**Year 1, Semester 1**
- MAB141 Mathematics and Statistics for Medical Science
- SCB112 Cellular Basis of Life

**Year 1, Semester 2**
- LSB255 Human Anatomy
- SCB122 Cell and Molecular Biology

**Year 2, Semester 1**
- SCB111 Chemistry 1

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Plus ONE elective to be chosen from the following list:

KWB101 Introduction to Creative Writing
PYB007 Interpersonal Processes and Skills

Or another elective to be approved by the course coordinator

Year 2, Semester 2
PCB150 Physics 1H
SCB121 Chemistry 2

Year 3, Semester 1
LQB383 Molecular and Cellular Regulation
LSB325 Biochemistry

Year 3, Semester 2
LQB483 Molecular Biology Techniques
LSB425 Quantitative Medical Science

Year 4, Semester 1
LQB386 Microbial Structure and Function
LQB388 Medical Physiology 1

Year 4, Semester 2
LQB486 Clinical Microbiology 1
SWB105 Introduction to Human Rights and Ethics

Year 5, Semester 1
LQB584 Medical Cell Biology
LQB586 Clinical Microbiology 2

Year 5, Semester 2
LQB488 Medical Physiology 2
LSB658 Clinical Physiology

Year 6, Semester 1
LQB583 Genetic Research Technology
LSB525 Clinical Biochemistry 1

Year 6, Semester 2
LQB684 Medical Biotechnology
LSB625 Clinical Biochemistry 2

Note for Years 5 and 6:

Students may substitute ONE unit from EACH of Year 4 Semester 2 and Year 5 Semester 1, OR Year 6 Semester 1 and Year 6 Semester 2 with an approved pair of electives from one stream only from the list which appears under the Note for Year 3 in the Full-time course structure, providing that a MATCHING SET of science units is deleted: (eg [a] LQB583 and LQB684 OR [b] LSB525 and LSB625 OR [c] LQB486 and LQB586). Students may choose to enrol in SCB500 with course coordinator approval based on the completion of 144 credit points of SC40 units. Students may then choose any unit from this list to complete the pair of electives. The elective options are subject to timetabling and campus offerings.

Potential Careers:
Laboratory Assistant, Laboratory Technician, Medicine (after further study), Research Assistant.

UNIT SYNOPSES

EDB038 INDIGENOUS AUSTRALIAN CULTURE STUDIES
This unit encourages an appreciation of the two distinct indigenous cultures of Australia and how external forces to Aboriginal and Torres Strait Islander cultures caused social, economic and political changes. It looks at traditional family life and organisation.
Credit points: 12  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

EDB040 INDIGENOUS KNOWLEDGE: RESEARCH ETHICS AND PROTOCOLS
This unit provides students with a critical examination of the major ethical and moral issues arising from the designing and conducting of research 'on/in' Australian Indigenous people/communities or issues. The unit examines the calls by Indigenous researchers for the decolonising of research methods - a process which critically examines the historical and philosophical bases of Western research and the frustrations of Indigenous researchers with various Western paradigms, academic traditions and methodologies.
Credit points: 12  Campus: Kelvin Grove  Teaching period: 2011 SEM-1 and 2011 SEM-2

HMB271 FOUNDATIONS OF MOTOR CONTROL, LEARNING AND DEVELOPMENT
This unit introduces students to the behavioural and neural bases of movement control through an examination of the central nervous and neuromuscular systems, hierarchical control, human information processing and dynamical systems. It covers elements of sensory mechanisms related to movement. Foundations of motor learning and adaptation are introduced, linking underlying mechanisms of learning with principles that may be applied in teaching, coaching and rehabilitation.
**LQB383 MOLECULAR AND CELLULAR REGULATION**
Molecular and Cellular Regulation is a second year unit and is a continuation and expansion of topics introduced in SCB112 Cellular Basis of Life and SCB122 Cell & Molecular Biology. Molecular and Cellular Regulation strengthens the focus on the molecular and genetic aspects of cellular processes and the consequences to the organism of failure of these basic processes. Topics taught relate to gene structure and regulation in prokaryotes and eukaryotes and the role of gene expression in the development of complex organisms. Related concepts such as cell signalling, communication, proliferation and survival are further developed in this unit.

**Prerequisites:** SCB122 or LSB238  
**Antirequisites:** LSB468 and LSB338  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

**LQB386 MICROBIAL STRUCTURE AND FUNCTION**
Aspects of microbiology impinge upon many facets of daily life, for example, human health, genetic engineering, the food industry and the built and natural environment. The unit introduces you to and provides you with a solid foundation in the basic microbiology required for progression to advanced studies in Microbiology. This unit provides knowledge about safe handling and study of microorganisms that is also very important in many other disciplines, because microorganisms are used as models and tools in a wide range of study areas.

**Prerequisites:** LSB131 or LSB231 or LSB255  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-1

**HMB273 EXERCISE PHYSIOLOGY 1**
This unit describes the immediate physiological responses to exercise, and the adaptations that occur with long-term exercise training. Exercise places a demand on the human body to provide sufficient energy to perform. The metabolic, hormonal, cardiovascular and pulmonary systems must adapt to meet the challenge of homeostasis. The active skeletal muscle must increase extraction and utilisation of oxygen and other fuels, the cardiovascular system must respond to improved gas and fuel transport, and lung function must change to facilitate increased respiratory gas exchange.

NOTE for Summer Semester students: Teaching will not commence until January 2010, but some unit information will be available from 16 November 2009.

Students wishing to enrol up to the beginning of January will need to email enquirieshms@qut.edu.au

**Prerequisites:** LSB231 or LSB142  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-2

**KWB101 INTRODUCTION TO CREATIVE WRITING**
This course develops creative, critical and analytical skills in reading and writing a variety of creative textual forms. You acquire an understanding and some practice in crafting various forms of poetry and short fiction.

**Equivalents:** KWB250  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-1

**LQB388 MEDICAL PHYSIOLOGY 1**
This unit deals specifically with the physiological systems that are responsible for the maintenance of health in humans. In the course of the semester students will investigate half the systems that constitute the human body (with the remainder dealt with in the second semester unit Physiology 2 [LQB488]). The unit offers a useful frame of reference for students enrolled in courses such as animal biology, biochemistry, microbiology, molecular biology, nutrition and human movements. Together with Physiology 2 [LQB488] this unit is a prerequisite to the third level unit, Applied Physiology [LQB588] and will be of particular interest to students considering medicine as a postgraduate career option.

**Prerequisites:** LSB111 or LSB131 or LSB142 or LSB255 or LSB258 or SCB120  
**Antirequisites:** LSB358  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

**LQB483 MOLECULAR BIOLOGY TECHNIQUES**
Molecular biology and recombinant DNA technologies have important roles in many areas within the life sciences, including medicine, agriculture, cell biology, environmental science and forensics. Through close alignment of theoretical concepts and practical skills, this lab-based unit expands on molecular themes introduced in earlier cell and molecular biology units to develop expertise in modern recombinant DNA techniques and an understanding of strategies used to identify and manipulate genes. The close relationship between theory and practice in this unit is designed to develop competence, independence and critical thinking that will provide students with a solid foundation for advanced molecular biology studies presented in several third level units.

**Prerequisites:** LSB238 or SCB122  
**Antirequisites:** LSB468, LSN468, LSN483  
**Assumed knowledge:** LQB383 is recommended prior study  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2
LQB486 CLINICAL MICROBIOLOGY 1
Micro-organisms are very important as pathogens of humans and animals, and their accurate clinical diagnosis is essential for appropriate treatment and management of infections. This unit builds upon the foundational topics in microbiology that you learned in LQB386 (Microbial Structure and Function) and starts preparing you for a career in a microbiology laboratory in clinical practice, industry or research. The unit will advance your knowledge and skills in classical methods of isolation and identification of bacteria in clinical specimens and introduce aspects of microbial pathogenesis and antibiotic sensitivity. The unit will provide you with an understanding of clinically important viruses, and will commence your training in diagnostic parasitology.

Prerequisites: LQB386 or LSB328
Antirequisites: LSB405, LSB457
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

LQB488 MEDICAL PHYSIOLOGY 2
An appreciation of how the human body works is an essential prerequisite to understanding the basis of health, disease, diagnostic technologies and treatment strategies. This unit deals specifically with the physiological systems that are responsible for the maintenance of health in humans. It therefore provides a useful frame of reference for students enrolled in biomedical science, pharmacy, human movement studies, nutrition and dietetics or any of the life science majors. The aim of this unit is to introduce you to the normal physiology of the human body in order to facilitate an understanding of how injury or disease affect health as well as the mechanism of action of drugs and other therapeutic interventions.

Prerequisites: LSB111, LSB131, LSB142, LSB255, LSB258, NRB270 or SCB120
Antirequisites: LSB458
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-2

LQB583 GENETIC RESEARCH TECHNOLOGY
The tools available for the discovery and manipulation of new genes are increasing exponentially and, in turn, this is having a significant impact in many areas of the life sciences. The true potential for this ultimately relies on the ability to link genes and their function. There are many strategies, both targeted and global, which facilitate an understanding of gene and genome structure function relationships. These strategies rely on integrated technologies based on molecular genetics, molecular biology and genetic engineering. The identification of function leads then to unlimited potential for detection and manipulation of these genes in human, animal and plant systems.

Prerequisites: LQB483
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-1

LQB584 MEDICAL CELL BIOLOGY
This unit builds and extends the understanding of basic theoretical and practical aspects of molecular cell biology developed in previous cell and molecular biology units. Medical Cell Biology develops and extends the context of the cellular environment and its central role within the organism providing all of the biological functions required by the organism to survive, defend and protect itself from disease and trauma. An understanding of cell biology theory and molecular mechanisms of animal development and disease is essential for introduction to higher level units in medical biotechnology.

Prerequisites: LQB383 or LSB338
Antirequisites: LSB449, LSB503, LSN584
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-1

LQB586 CLINICAL MICROBIOLOGY 2
Clinical microbiology laboratories throughout the world are recognising the need to maximise their diagnostic capabilities for accurate and early detection and management of medically-important parasitic, fungal and bacterial diseases of humans. This unit emphasises a strong commitment to professional practice by: (i) providing you with a comprehensive, in-depth knowledge and understanding of infectious disease states and their etiology, (ii) developing high level generic and specific laboratory-based skills in diagnostic microbiology and (iii) developing and refining critical thinking skills so that experimental results may be observed and recorded intelligently and reported with a high degree of confidence in their validity and rigor.

Prerequisites: LQB486
Antirequisites: LSB547 and LSB647
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Teaching period: 2011 SEM-1

LQB588 APPLIED MEDICAL PHYSIOLOGY
This unit focuses on the development of your skills and knowledge relevant to research in physiology and other biomedical fields. This unit is designed to foster your development of a range of skills including: critical thinking, team work, planning, writing, time-management, problem-solving and organisation skills. This unit will help you to interpret scientific literature and to understand how the use of statistical methods relates to research. The unit will cover a range of advanced topics in physiology using a more integrative and applied approach than previously encountered. It introduces some issues currently under debate and at the forefront of physiology research.

Prerequisites: LQB388 (LSB358) or LQB488 (LSB458) or LSB231 or HMB273 or LSB250
Equivalents: LSB558
Credit points: 12
Contact hours: 4 per week
Campus: Gardens Point
Gardens Point  Teaching period: 2011 SEM-1

LQB684 MEDICAL BIOTECHNOLOGY
Medical Biotechnology will provide you with a thorough understanding of diagnostics and therapeutics in the commercial environment of biotechnology. A comprehension of approaches and the applications used as therapeutic interventions in medicine is necessary for this understanding. This unit focuses on current state-of-the-art applications within therapeutic biotechnology as directed to novel drug discovery and drug optimisation and to the development of novel therapeutic strategies, such as gene therapy, transplantation and immunotherapy. It will prepare you for subsequent involvement in medical research and/or employment in medical laboratories.

Prerequisites: LQB586 or LSB503 or LSB449
Antirequisites: LSN684 Assumed knowledge: A background understanding of Cell and Molecular Biology as provided in LQB383, LSB483 and LQB586 is assumed knowledge
Equivalents: LS6809 Credit points: 12
Contact hours: 5 per week Campus: Gardens Point Teaching period: 2011 SEM-2

LQB686 MICROBIAL TECHNOLOGY AND IMMUNOLOGY
This capstone unit builds upon your foundation knowledge and understanding of microorganisms and bioinformatics, molecular technology, and immunological skills. You will: (i) study infectious disease states as a major focus, (ii) research the importance of microbial pathogens as aetiological agents of disease, (iii) apply your knowledge of bioinformatics and molecular assays to design polymerase chain reaction (PCR) assays that can be used to selectively detect and amplify a specific bacterial pathogen, (iii) extend your knowledge of molecular subtyping methods, genomics, manipulation of bacterial genes, antibiotics, human immunology and vaccines, and (iv) write a research report in the format of a journal article.

Prerequisites: LQB586 and LSB483 Antirequisites: LSB648 Credit points: 12 Contact hours: 4 per week
Campus: Gardens Point Teaching period: 2011 SEM-2

LSB255 HUMAN ANATOMY
A detailed understanding of human anatomy is fundamental to the knowledge base of the medically orientated biological scientist. This unit introduces you to both theoretical and practical aspects of gross, systemic and microscopic anatomy of the human body with emphasis on the microscopic anatomy. The unit builds upon knowledge gained in previous units which introduced you to basic principles of cell structure and function. Knowledge gained in this unit provides a basis for more advanced studies in cellular pathology, histochemistry and cytology.

Prerequisites: SCB112 or LSB118 or LQB182
Antirequisites: LSB152 Credit points: 12 Contact hours: 4 per week
Campus: Gardens Point Teaching period: 2011 SEM-2

LSB325 BIOCHEMISTRY
The study of biochemistry and cell biology, along with anatomy and physiology, provides students with the knowledge required for the proper understanding of the structure and function of the human body and its organ systems in health and disease, as a preparation for their clinical studies.

Prerequisites: SCB121 or SCB113 Antirequisites: LQB381, LSB481 Credit points: 12 Contact hours: 4 per week
Campus: Gardens Point Teaching period: 2011 SEM-1

LSB384 PHARMACOLOGY FOR HEALTH PROFESSIONALS
Health professionals such as Nurses, Paramedics, Podiatrists and Optometrists require a detailed understanding of the pharmacological properties of the medicines that are used daily in the treatment of patients under their care. This unit introduces students to the discipline of pharmacology by examining the interaction of drugs with biological systems. An understanding of pharmacology is fundamental to a student’s understanding of pharmaceutical products in terms of efficacy and safety and provides a rationale for their therapeutic use.

Prerequisites: (LSB111 or LSB282 or LSB382 (NS40)) or (LSB475 (OP45)) or (LSB235 and LSB250 (PU43 Podiatry))
Credit points: 12 Contact hours: 4 per week
Campus: Kelvin Grove and Caboolture Teaching period: 2011 SEM-1 and 2011 SEM-2

LSB425 QUANTITATIVE MEDICAL SCIENCE
This course of study (along with LSB625 Clinical Biochemistry 2) provides the graduating scientists with sufficient biochemical knowledge and laboratory experience to work effectively in both the smaller general-purpose laboratory performing a limited number of biochemical tests and the larger specialised laboratory performing in-depth studies of all aspects of clinical biochemistry.

Prerequisites: LSB235 and LSB250 Antirequisites: LSB475 Credit points: 12 Contact hours: 5 per week
Campus: Gardens Point Teaching period: 2011 SEM-2

LSB525 CLINICAL BIOCHEMISTRY 1
This course of study (along with LSB625 Clinical Biochemistry 2) provides the graduating scientists with sufficient biochemical knowledge and laboratory experience to work effectively in both the smaller general-purpose laboratory performing a limited number of biochemical tests and the larger specialised laboratory performing in-depth studies of all aspects of clinical biochemistry.

Prerequisites: LSB425 Credit points: 12 Contact hours: 5 per week
Campus: Gardens Point Teaching period: 2011 SEM-1

LSB625 CLINICAL BIOCHEMISTRY 2
This unit builds on and extends LSB525 Clinical Biochemistry 1 to provide you with sufficient biochemical knowledge and laboratory experience to work effectively in either smaller general-purpose laboratory performing a limited number of biochemical tests or larger specialised laboratory performing in-depth studies of all aspects of clinical biochemistry. LSB625 is completed in the final Semester of the LS37 course and builds on the theoretical aspects of biochemistry introduced in LSB325, the practical skills developed in LSB425 and the theoretical and practical elements of LSB525.

**Prerequisites:** LSB525  
**Credit points:** 12  
**Contact hours:** 5 per week  
**Campus:** Gardens Point

**LSB658 CLINICAL PHYSIOLOGY**

The aims of this unit are to help you develop a full understanding of how the pathophysiology of the major disorders of the human body derives from a knowledge and understanding of anatomy and physiology, and critical thinking and complex reasoning skills that provide you with a strong basis for cogently discussing and understanding case histories, their diagnoses and treatments.

**Prerequisites:** (LSB525 or LSB142 or LSB131) AND (LQB388 or LSB250 or LSB451 or LSB231)  
**Corequisites:** LQB488  
**Antirequisites:** LSB467  
**Assumed knowledge:** Students should enrol in LQB488 in the same semester if not previously completed  
**Credit points:** 12  
**Contact hours:** 5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

**MAB141 MATHEMATICS AND STATISTICS FOR MEDICAL SCIENCE**

This unit includes: mathematics (functions, limits and continuity; differentiation of functions and applications of differentiation; solutions of equation by iteration; interpolation methods; integration and applications of integration); statistics (data collection; exploring, presenting and modelling data; Normal distribution; hypothesis testing and confidence intervals for means and proportions; one-way and two-way ANOVA; simple and multiple regression; design of experiments). These topics are presented in the context of medical science. Students must have completed four semesters of Senior Mathematics B with an exit level of Sound Achievement or better, or have passed MAB105.

**Antirequisites:** MAN101, MAB101, LQB284  
**Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge.  
**Equivalents:** MAB140  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**PCB150 PHYSICS 1H**

Professionals in the applied sciences require an understanding of the processes of making and recording measurements and an understanding of the physical principles that govern the behaviour of both the physical parameters being measured and the instrument being used to make the measurement. The aim of this unit is to introduce you to the processes of making measurements and estimating, processing and interpreting the uncertainties involved with these measurements. To enable you to understand the physical parameters being measured and also the limits of the measuring instrument; the physics of mechanics, heat, sound and light will be introduced and explained.

**Credit points:** 12  
**Contact hours:** 5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**PUB104 AUSTRALIAN HEALTH CARE SYSTEMS**

This is an important unit for students entering or planning to enter the health industry as it is designed to give a broad overview of systems of health care in Australia and their methods of operation. This unit introduces the role of health service managers as members of the health care team, the basic principles of health service management in health care facilities and beyond, and the functions of health service managers.

**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove and External  
**Teaching period:** 2011 SEM-1

**PUB251 CONTEMPORARY PUBLIC HEALTH**

This unit provides an introduction to the following: the philosophy and approach of public health; the traditional public health process; the multidisciplinary nature of public health; and health policy and its impact on public health. Recent reformulations of traditional public health approaches including health promotion, intersectoral action for health and healthy public policy are examined. The role of public health in Australia and overseas, its main discipline components and some of the constraints faced by public health is also addressed. This unit considers groups with special needs and contemporary issues.

**Antirequisites:** PUN106  
**Credit points:** 12  
**Contact hours:** 4 per week (KG and Ext Sem 1; KG Sem 2)  
**Campus:** Kelvin Grove and External  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**PUB326 EPIDEMIOLOGY**

Epidemiology is the core scientific method of public health. It is the study of the distribution of health and disease in the population and includes research into causes of disease and the effectiveness of public health programs. Epidemiological methods are used to generate the evidence base for clinicians, health promotion specialists, health educators, occupational and environmental health officers and health service managers.

**Antirequisites:** HLN710  
**Assumed knowledge:** Successful completion of 96cp is assumed prior knowledge  
**Credit points:** 12  
**Contact hours:** 3 per week (Ext PU40
Pub Hlth students only) Campus: Kelvin Grove and External  Teaching period: 2011 SEM-1

PUB436 EVIDENCE BASED PRACTICE
This unit equips students with the skills to identify, critically analyse and evaluate evidence, and to implement evidence-based practice within their chosen profession. Credit points: 12  Campus: Kelvin Grove and External  Teaching period: 2011 SEM-2

PYB007 INTERPERSONAL PROCESSES AND SKILLS
Psychology is generally a people-based profession with many positions involving not only understanding and testing people but communicating with them. More broadly however in most areas of modern work, and indeed within personal relationships, people need developed interpersonal skills and the ability to conceptualise interactive processes. The microskills for communication are also the foundation for helping relationships and counselling. Antirequisites: PYB074, HHB113, PYB111  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point and Kelvin Grove  Teaching period: 2011 SEM-1 and 2011 SEM-2

PYB100 FOUNDATION PSYCHOLOGY
This unit provides an introduction to the major content areas of psychology, including an introduction to psychological research and report-writing, for students intending to pursue further studies in psychology.

Psychology is a broad-ranging and multifaceted discipline which encompasses the scientific study of human behaviour, and the systematic application of knowledge gained from psychological research to a broad range of applied issues. The goal of this introductory unit is to introduce you to the major subfields and perspectives in psychology, and to develop your understanding of the research methods and report-writing conventions used in psychological research.

Antirequisites: PYB012  Equivalents: PYB101  Credit points: 12  Contact hours: 3 hours per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM-1

PYB208 COUNSELLING THEORY AND PRACTICE 1
This unit develops the student’s knowledge of the counselling process and skills and provides practice in changing the ways in which people express, conceptualise and respond to their concerns. It builds upon the communication skills and concepts introduced in PYB007 and introduces a range of counselling approaches. It emphasises skills in solution oriented approaches but also covers a range of models and skills for workers in crisis situations. It provides a basis for further studies in counselling in clinical settings requiring psychotherapeutic intervention, and other modes of delivery such as couple, family or group work. Prerequisites: PYB007 or PYB074 or HHB113 or SWB104 or PYB111 or PUB209  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-2

SCB111 CHEMISTRY 1
Chemistry is the central science. It affects society as well as the individual. It is the language and principal tool of the physical sciences, the biological sciences, the health sciences and the agricultural and earth sciences. A basic knowledge of chemistry is essential to all students in these areas. Knowledge of chemistry allows a better understanding of the human body and of the environment in which we live. The aim of this unit is to introduce you to the basic concepts of general, inorganic, analytical and physical chemistry. Antirequisites: SCB113  Credit points: 12  Contact hours: 4.5 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

SCB112 CELLULAR BASIS OF LIFE
Scientists from all disciplines need an appreciation and a broad overview of the characteristics and functioning of the five groups of living organisms (bacteria, protists, fungi, plants and animals), and their interactions with the inanimate world. SCB112 Cellular Basis of Life is a first semester unit that is essential for many students undertaking courses requiring biological knowledge. Through integrated lecture and laboratory classes, this unit provides you with a foundation for later more advanced studies in your course or major (e.g. such as medical science, biomedical science, pharmacy, optometry, biochemistry, biotechnology, microbiology, geosciences, ecology, business and education among others). The aim of this unit is to introduce you to the wide diversity of living organisms while emphasising the unity of life processes at the cellular, biochemical and biophysical levels. Antirequisites: LOB182, LSB118  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

SCB121 CHEMISTRY 2
Chemistry is the central science. This is a unit of fundamental importance as it covers the background and general principles that underpin understanding in many science and health related disciplines. In this unit you will be introduced to fundamental aspects of chemistry including the nature of matter, atoms, molecules and ions. From this basis you will develop an understanding of the electronic structure of atoms, chemical bonding and molecular structure as well as the fundamentals of organic chemistry (often described as the chemistry of life). The aims of this
unit are to generate an understanding of the importance of chemical bonding and molecular structure and how these factors effect the properties of organic and bioinorganic molecules; and to allow recognition of, and provide an understanding of, the nature of organic functional groups and their respective reactivity.

**Prerequisites:** (SCB111 or PCB142) . SCB111 can be studied in the same teaching period  
**Antirequisites:**  
PQB105 and SCB113  
**Credit points:** 12  
**Contact hours:** 4.5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2

**SCB122 CELL AND MOLECULAR BIOLOGY**
SCB122 Cell and Molecular Biology 1 equips students with a comprehensive understanding the molecular basis of the cell. This unit expands on the basic principles and concepts relating to cell structure, function, perpetuation and specialisation introduced in SCB112 and introduces students to fundamental molecular mechanisms central to the organisation of the cell. Students will be shown how macromolecular interactions are crucial to information flow and heredity. Students are taught the relationships between chromosomes, genes and cellular function and ultimately how these may determine an organism's phenotype. This unit underpins cell biology and molecular biology units that are offered in second year Life Science units. SCB122 is also ideal for interfaculty students (eg Education, Business, Arts) who will undertake no further life science studies.

**Prerequisites:** SCB112. SCB112 can be studied in the same teaching period.  
**Antirequisites:** LSB238  
**Credit points:** 12  
**Contact hours:** 4.5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

**SWB105 INTRODUCTION TO HUMAN RIGHTS AND ETHICS**
This unit explores a range of contemporary national, regional and international human rights challenges and issues. It examines the relationship between human rights, the human rights system and critically important global problems including climate change, poverty, terrorism and oppressive forms of intolerance. It offers opportunities to investigate thematic concerns relating to women, youth, indigenous peoples and minority groups as well as specific topics such as human trafficking, harmful cultural practices, workers rights and child soldiers. The unit draws on a number of academic disciplines and makes extensive use of the Internet and information, communication and collaborative technologies. There are a number of interesting options open for assessment. [SWB105 is incompatible with HHB114]

**Antirequisites:** HHB114  
**Credit points:** 12  
**Campus:** Gardens Point and Kelvin Grove  
**Teaching period:** 2011 SEM-1 and 2011 SEM-2