Bachelor of Biomedical Science (SC40)

Year offered: 2010  
Admissions: Yes  
CRICOS code: 052768K  
Course duration (full-time): 3 Years  
Course duration (part-time): 6 Years  
Domestic fees (indicative): 2010: CSP $2,200 (indicative) per semester  
International Fees (indicative): 2010: $11,750 (indicative) per semester  
Domestic Entry: February  
International Entry: February  
QTAC code: 418401  
Past rank cut-off: 77  
Past OP cut-off: 12  
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.studentervices.qut.edu.au/apply/ug/info/knowledge.jsp  
Total credit points: 288  
Standard credit points per full-time semester: 48  
Standard credit points per part-time semester: 24  
Course coordinator: Dr Catherine Dallemagne  
Campus: Gardens Point

Overview  
The Bachelor of Biomedical Science is a highly relevant and appropriate qualification for entry into postgraduate medicine studies. You will study a winning blend of essential science, humanities and health-related topics to give you the best grounding possible for a career in the medical profession.  

Recommended Study  
Biological Science.

Why Choose this Course  
QUT’s real-world focus and practical approach to teaching in all degree qualifications has resulted in science graduates consistently gaining entry to postgraduate medicine studies form our courses. This course allows you to keep your options open by offering a range of alternative career paths. In the second or third year of your course you may apply for postgraduate medicine studies by sitting the entrance exam (GAMSAT).

Career Outcomes  
This course provides a solid foundation for the areas tested in GAMSAT, the entrance examination for postgraduate medicine. 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 of one or more of the following organisations: Australian Association of Clinical Biochemists (AACB), AusBiotech Ltd, Australian Society for Microbiology (ASM).

Your Course  
Year 1  
In the first year of the course you will undertake units covering chemistry, physics, anatomy, and cell biology, providing a solid knowledge base for GAMSAT. With QUT’s practical approach to teaching, you will not only learn the theory, but gain a wealth of practical experience in state-of-the-art laboratories. You will also gain an introduction to the essential communication skills required for a career in the health and medical professions.

Year 2  
Units in the second year combine more advanced studies in cell biology with units in physiology, biochemistry, microbiology and human rights and ethics. If you wish to proceed to postgraduate medicine studies, you will have the opportunity to attend information sessions on the GAMSAT exam.

Year 3  
You will have some flexibility in subject choices to allow you to tailor the qualification to suit your desired career outcomes. You may choose to take units in medical biotechnology, clinical biochemistry, or microbiology (including parasitology) and there are also opportunities to complement your scientific studies with topics such as psychology, exercise physiology, indigenous issues or ethical issues related to gene technology.

Deferment  
QUT allows current Year 12 school leavers to defer their undergraduate admission offer for one year, or for six months if offered mid-year admission, except in courses using specific admission requirements such as questionnaires, folios, auditions, prior study or work experience.

Non-year 12 students may also request to defer their QTAC
offer on the basis of demonstrated special circumstances.

Find out more on deferment.

**Further Information**

For further information about the course, please contact:

**Course Coordinator**

Dr Catherine Dallemagne  
Phone: +61 7 3138 2561  
Email: c.dallemagne@qut.edu.au

**Course structure - Full-time**

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
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<tbody>
<tr>
<td>MAB141 Mathematics and Statistics for Medical Science</td>
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<tr>
<td>SCB111 Chemistry 1</td>
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<tr>
<td>SCB112 Cellular Basis of Life</td>
<td>Plus ONE elective to be chosen from the following list:</td>
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<tr>
<td>KWB101 Introduction to Creative Writing</td>
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<td>PYB007 Interpersonal Processes and Skills</td>
<td>Or another elective to be approved by the course coordinator</td>
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<th>Year 1, Semester 2</th>
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<tr>
<td>LSB255 Human Anatomy</td>
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<td>PCB150 Physics 1H</td>
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<tr>
<td>SCB121 Chemistry 2</td>
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<td>SCB122 Cell and Molecular Biology</td>
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<th>Year 2, Semester 1</th>
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<tr>
<td>LQB383 Molecular and Cellular Regulation</td>
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<tr>
<td>LQB386 Microbial Structure and Function</td>
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<tr>
<td>LQB388 Medical Physiology 1</td>
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<tr>
<td>LSB325 Biochemistry</td>
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<th>Year 2, Semester 2</th>
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<tr>
<td>LQB483 Molecular Biology Techniques</td>
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<tr>
<td>LQB486 Clinical Microbiology 1</td>
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<tr>
<td>LSB425 Quantitative Medical Science</td>
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<td>SWB105 Introduction to Human Rights and Ethics</td>
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<th>Year 3, Semester 1</th>
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<tr>
<td>LQB583 Genetic Research Technology</td>
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<tr>
<td>LQB584 Medical Cell Biology</td>
<td></td>
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<tr>
<td>LQB586 Clinical Microbiology 2</td>
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<tr>
<td>LSB525 Clinical Biochemistry 1</td>
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**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: (eg [a] LQB583 and LQB684 OR [b] LSB525 and LSB625 OR [c] LQB486 and LQB586). The elective options are subject to timetabling and campus offerings.

**HEALTH COUNSELLING**

<table>
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<tr>
<th>Semester 1:</th>
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<tbody>
<tr>
<td>PYB012 Psychology</td>
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<td>PYB208 Counselling Theory and Practice 1</td>
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**PUBLIC HEALTH**

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<th>Semester 1:</th>
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<tr>
<td>PUB104 Australian Health Care Systems</td>
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<td>PUB326 Epidemiology</td>
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<td>PUB251 Contemporary Public Health</td>
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<td>PUB436 Evidence Based Practice</td>
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**EXERCISE SCIENCE FOR PREVENTIVE MEDICINE**

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<th>Semester 1:</th>
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<tr>
<td>HMB271 Foundations of Motor Control, Learning and Development</td>
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<td>HMB273 Exercise Physiology 1</td>
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**INDIGENOUS PERSPECTIVES**

<table>
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<th>Semester 1:</th>
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<tr>
<td>EDB038 Indigenous Australian Culture Studies</td>
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EDB040 Indigenous Knowledge: Research Ethics and Protocols

HEALTH AND SCIENCES
Semester 1:
PUB326 Epidemiology
Or
LQB588 Applied Medical Physiology
Semester 2:
LQB686 Microbial Technology and Immunology
Or
LSB384 Pharmacology For Health Professionals

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
    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). The elective options are subject to timetabling and campus offerings.

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

UNIT SYNOPSISES

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: 2010 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: 2010 SEM-1 and 2010 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.
Prerequisites: LSB131 or LSB231 or LSB255 Credit points: 12 Contact hours: 4 per week Campus: Kelvin Grove Teaching period: 2010 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: 2010 SUM-2, 2010 SEM-2 and 2010 SUM-1

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: 2010 SEM-1

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: 2010 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 micro-organisms that is also very important in many other disciplines, because micro-organisms are used as models and tools in a wide range of study areas.
Prerequisites: SCB112 and (SCB121 or SCB113) Antirequisites: LSB328 Credit points: 12 Contact hours: 4 per week Campus: Gardens Point Teaching period: 2010 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:** SCB120, LSB131, LSB142, LSB255, LSB258 or NRB270  
**Antirequisites:** LSB358  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

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**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:** 2010 SEM-1

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**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:** LSB435, LSB547  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

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**LQB488 MEDICAL PHYSIOLOGY 2**

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 having been dealt with in the first semester unit Physiology 1 [LQB388]). 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 1 [LQB388] this unit is a prerequisite to the third level units, Applied Physiology [LQB588] and will be of particular interest to students considering medicine as a postgraduate career option.  

**Prerequisites:** LSB131, LSB142, LSB255, LSB258, NRB270, or SCB120  
**Corequisites:** LSB658  
**Antirequisites:** LSB458  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-2

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**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:** 2010 SEM-1

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**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:** 2010 SEM-1

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**LQB586 CLINICAL MICROBIOLOGY 2**

**TBA**  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2010 SEM-1

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**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  **Teaching period:** 2010 SEM-2

**LSB684 MEDICAL BIOTECHNOLOGY**

In this unit students gain a thorough understanding of diagnostics and therapeutics in the commercial environment of medical biotechnology. LSB6849 aims to increase the student's understanding of cell-based strategies, approaches and applications used as therapeutic interventions in medicine. The unit focuses on current, state-of-the-art and emerging technologies and applications within biotechnology as directed to novel therapeutic discovery, design, development and delivery of clinical therapeutics including tissue transplantation and regeneration, cellular therapies, genetic therapies, immunotherapies, clinical, ethical and regulatory affairs.

**Prerequisites:** LQB584 or LSB503 or LSB449  **Antirequisites:** LSN684  **Assumed knowledge:** A background understanding of Cell and Molecular Biology as provided in LQB383, LQB483 and LQB584 is assumed  **Equivalents:** LSB609  **Credit points:** 12  **Contact hours:** 5 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-2

**LSB686 MICROBIAL TECHNOLOGY AND IMMUNOLOGY**

Increasingly microbiologists are employing emerging technologies to rapidly detect, localise, characterise and identify microorganisms to gain a greater understanding of their prevalence, distribution, physiological functions, genotypes/phenotypes and pathogenesis. This unit will extend your knowledge of the origins of microorganisms and recently sequenced microbial genomes, and provide you with the necessary knowledge for the development and application of emerging microbial technologies. The study of microorganisms is enhanced by an understanding of the host immunological response(s) to microbial colonisation and disease.

**Prerequisites:** LQB386 and LQB483  **Antirequisites:** LSB648  **Credit points:** 12  **Contact hours:** 4 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-2

**LSB255 HUMAN ANATOMY**

The medically oriented biological scientist requires a detailed understanding and knowledge of human anatomy. This unit exposes the student to the theoretical and practical facets of both microscopic and macroscopic anatomy of the human body with the emphasis on the microscopic anatomy.

**Prerequisites:** SCB112 or LSB118  **Antirequisites:** LSB152  **Credit points:** 12  **Contact hours:** 4 per week  **Campus:** Gardens Point  **Teaching period:** 2010 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:** LSB275, LQB381, LQB481  **Credit points:** 12  **Contact hours:** 4 per week  **Campus:** Gardens Point  **Teaching period:** 2010 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:** 2010 SEM-1 and 2010 SEM-2

**LSB425 QUANTITATIVE MEDICAL SCIENCE**

This unit integrates physics, chemistry, biochemistry, maths and statistics for applications to chemical analysis, as preparation to clinical biochemistry.

**Prerequisites:** LSB325 and MAB141  **Antirequisites:** LSN425  **Credit points:** 12  **Contact hours:** 5 per week  **Campus:** Gardens Point  **Teaching period:** 2010 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:** 2010 SEM-1

**LSB625 CLINICAL BIOCHEMISTRY 2**

This course of study (along with LSB525) 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:** LSB525  **Credit points:** 12  **Contact hours:** 5 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-2

**LSB658 CLINICAL PHYSIOLOGY**

In this unit students explore the physiological basis, pathogenesis, clinical features and treatment rationale of the major disorders of the cardiovascular, respiratory, haematological, renal, gastrointestinal, nervous and endocrine systems. One of the objectives of the unit is to develop critical thinking and apply this to the discussion of pathophysiological cases. **Prerequisites:** (LSB525 or LSB142 or LSB131) AND (LQB388 or LSB250 or LSB451 or LSB231)  **Corequisites:** LQB488  **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:** 2010 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  **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:** 2010 SEM-1

**PCB150 PHYSICS 1H**

This unit introduces basic physical measurements, mechanics, heat, waves, acoustics and optics, and the instrumentation used to measure physical parameters. **Credit points:** 12  **Contact hours:** 5 per week  **Campus:** Gardens Point  **Teaching period:** 2010 SEM-1 and 2010 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:** 2010 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:** 2010 SEM-1 and 2010 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:** 2010 SEM-1

**PUB436 EVIDENCE BASED PRACTICE**
Credit points: 12  Teaching period: 2010 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: 2010 SEM-1 and 2010 SEM-2

PYB012 PSYCHOLOGY
The body of knowledge which defines Psychology as a discipline is basic to an understanding of human behaviour and interaction. Psychological theories, concepts and methods of investigation provide ways of evaluating personal and professional practice. Informed practice can then seek to meet the needs of individuals, groups and communities. All professional people need to have frameworks for understanding their own behaviour and that of others. This unit provides students with essential knowledge as a basis for their personal and professional effectiveness. It is the foundation for understanding further study in psychology and its many applications.

Equivalents: PYB100, PYB101  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point and Kelvin Grove  Teaching period: 2010 SEM-1 and 2010 SEM-2

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: 2010 SEM-2

SCB111 CHEMISTRY 1
This unit covers the fundamentals of general and physical chemistry. Topics include atomic and molecular structure, introduction to chemical bonding, reaction stoichiometry, thermochemistry, gas phase chemistry, reaction kinetics, equilibrium, acids, bases, buffers, oxidation, reduction and electrochemistry. The practical program involves experiments illustrating a range of chemical reaction types including precipitation reactions, acid-base chemistry and redox chemistry using analytical experimental methods. A comprehensive tutorial program (CHELP) complements the lectures and is designed to assist students to develop the problem solving skills required for further study in chemistry and related sciences.

Antirequisites: SCB113  Credit points: 12  Contact hours: 4.5 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB112 CELLULAR BASIS OF LIFE
A study of life processes in all five groups of living organisms (bacteria, protists, fungi, plants and animals). Traditional topics in biology are integrated with recent research advances in molecular and cellular biology to provide a comprehensive foundation for later units in the medical, biotechnological and ecological sciences. The unit begins by constructing cells from the four quantitatively important groups of biological molecules (proteins, lipids, carbohydrates and nucleic acids). Molecular and evolutionary aspects of genetics are then introduced, with the great diversity of reproductive strategies found among organisms being emphasised. Finally, bioenergetics (photosynthesis and respiration) and its relevance to environmental issues is outlined.

Antirequisites: LSB118  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 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, particularly in regards to the chemistry of life. In this unit students will be introduced to fundamental aspects of chemistry including the electronic structure of atoms, chemical bonding and molecular structure. From this basis students will develop an understanding of the fundamentals of organic chemistry including chirality, functional groups and organic reactions which will lead to important bio-inorganic molecules and coordination complexes.

Prerequisites: (SCB111 or PCB142) . SCB111 can be studied in the same teaching period  Antirequisites: SCB113  Credit points: 12  Contact hours: 4.5 per week  Campus: Gardens Point  Teaching period: 2010 SEM-1 and 2010 SEM-2

SCB122 CELL AND MOLECULAR BIOLOGY
SCB122 Cell and Molecular Biology 1 equips students with a comprehensive understanding of 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 (e.g., Education, Business, Arts) who will undertake no further life science studies.

Prerequisites: SCB112    Antirequisites: LSB238
Credit points: 12    Contact hours: 4.5 per week
Campus: Gardens Point    Teaching period: 2010 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    Teaching period: 2010 SEM-1 and 2010 SEM-2