Bachelor of Vision Science (OP45)

Year offered: 2011
Admissions: Yes
CRICOS code: 065380A
Course duration (full-time): 3 years
Domestic Fees (indicative): 2011: CSP $2,177 per semester (indicative)
International Fees (indicative): 2011: $13,750 (indicative) per semester
Domestic Entry: February
International Entry: February
QTAC code: 425312
Past rank cut-off: 98 - Selection within the rank or additional ranks were used in the selection process
Past OP cut-off: 2 - Field positions were used as part of the selection process in this minimum OP band
Assumed knowledge: English (4, SA), Maths B (4, SA), Chemistry (4, SA), and Physics (4, SA)
Preparatory studies: For information on acquiring assumed knowledge visit http://www.qut.edu.au/assumed-knowledge
Total credit points: 288
Course coordinator: Enquiries to optometry.enquiries@qut.edu.au or phone 07 3138 3368
Campus: Kelvin Grove

Overview
This course is the first component of a five year dual degree program comprising a three year Bachelor of Vision Science, followed by a two year Master of Optometry (OP85). Both degrees need to be completed before a graduate can apply for registration as an optometrist.

The profession of Optometry is undergoing expansion in its scope of practice as a result of legislative amendments occurring (or pending) in all states and territories to allow appropriately trained optometrists to use therapeutic pharmaceutical agents in the practice of Optometry. This program increases graduates' depth of knowledge in the areas of general and ocular pharmacology, with training in the therapeutic management of eye disease.

Professional recognition
The dual degree program Bachelor of Vision Science/Master of Optometry meets the requirements for accreditation by the Optometry Council of Australia and New Zealand. Graduates of the program meet the requirements for registration by the Optometry Board of Australia.

The Australian Health Practitioner Regulation Agency (AHPRA) requires that graduates demonstrate English language skills at IELTS level 7 or equivalent before being considered for professional registration. For further information visit the AHPRA website: http://www.ahpra.gov.au/Registration/Registration-Process/Registration-Requirements.aspx

Please refer to the Optometry Board of Australia website http://www.optometryboard.gov.au/Registration-Standards.aspx for additional information on the Board's Registration Standards.

Student registration
QUT automatically registers students enrolled in this course with the Optometry Board of Australia in accordance with the Health Practitioner Regulation National Law Act 2009. Details about student registration are available from the Australian Health Practitioner Regulation Agency at www.ahpra.gov.au

Other course requirements
Blue card As Required by the Commission for Children and Young People and Child Guardian Act (2000), students must undergo a criminal history check and be issued with a Blue Card before commencing clinical practice/field experience/practicum in an organisation where they may work with children or young people. For more information, visit http://student.qut.edu.au/studying/jobs-and-work-experience/work-experience-and-placements/blue-cards

Additional costs Ophthalmic instruments costing approximately $5000 are required for the clinical program from the beginning of second and third years of the course. Academic staff provide advice regarding the purchase of these instruments. You will also be required to undertake first aid certification before entering the clinical program.

Further information
For information about this course, please call the Public Health and Optometry Student Centre on +61 7 3138 3368 or email optometry.enquiries@qut.edu.au

OP45 - Course structure - full-time for students commencing in 2010

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MAB141 Mathematics and Statistics for Medical Science</td>
<td></td>
</tr>
<tr>
<td>PCB150 Physics 1H</td>
<td></td>
</tr>
<tr>
<td>SCB112 Cellular Basis of Life</td>
<td></td>
</tr>
<tr>
<td>SCB113 Chemistry for Health and Medical Science</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1, Semester 2</th>
<th></th>
</tr>
</thead>
</table>
that are relevant to the needs of future optometrists, podiatrists and medical scientists. 
**Prerequisites:** SCB112 or LSB118 or LSB131 or LQB182 
**Antirequisites:** LSB231 
**Credit points:** 12 
**Contact hours:** 5 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:** LSB231 
**Credit points:** 12 
**Contact hours:** 4 per week 
**Campus:** Gardens Point 
**Teaching period:** 2011 SEM-2

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

LSB475 DISEASE PROCESSES 4

Disease Processes provides a link between your foundation knowledge in anatomy and physiology and the application of such knowledge in a clinical setting. This intermediate level unit places an emphasis on general pathological knowledge necessary for your understanding of future advanced units. It therefore provides you with the knowledge needed for subsequent clinical semesters. The aim of the unit is to introduce you to the study of disease processes underlying the major diseases of human organ systems. 
**Antirequisites:** LSB321, LSB361, LSB367 
**Credit points:** 12 
**Contact hours:** 4 per week 
**Campus:** Gardens Point and Kelvin Grove 
**Teaching period:** 2011 SEM-2

UNIT SYNOPSES

**LSB250 HUMAN PHYSIOLOGY**

A strong foundation in human physiology is crucial for students in Optometry, Podiatry and Medical Science. This unit will provide you with the necessary foundation for subsequent units in physiology, pathology or immunology. This unit is also appropriate for other students interested in studying medical physiology at an intermediate level and is also designed to encourage your interest in scientific research and current issues in medical physiology. The aim of this unit is for students to gain a strong a background in human physiology and to develop skills and gain knowledge
LSB492 MICROBIOLOGY
This unit will provide you with foundation knowledge and an understanding of the diversity of microorganisms, the host's immune response to infection and methods of control of microorganisms. You will: (i) study relevant infectious disease states, (ii) research the importance of microbial pathogens as aetiological agents of disease, and (iii) reinforce your knowledge of microorganisms and methods of control of microorganisms by performing experiments within the microbiology laboratory.
Assumed knowledge: Basic knowledge of biology and chemistry is assumed for this unit. Credit points: 12
Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

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.
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

OPB351 VISUAL SCIENCE 3
This unit includes a study of the basic visual sciences that underpins the practice of optometry. It covers the optics of the eye, including its basic design, dimensions and retinal quality as well as the psychophysical principles of vision.
Prerequisites: LSB250  Corequisites: OPB452 and OPB453  Credit points: 12  Contact hours: 5 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

OPB352 OCULAR ANATOMY AND PHYSIOLOGY 3
This unit provides information on the ocular anatomy and physiology that underlies the functional measurements made in optometry and their interpretation. It includes the structure and function of the anterior eye and orbit.
Prerequisites: LSB250 and LSB255  Credit points: 12  Contact hours: 5 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

OPB353 OPHTHALMIC OPTICS 3
Prerequisites: MAB141  Credit points: 12  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

OPB451 VISUAL SCIENCE 4
This subject continues studies commenced in OPB351, and provides students with an understanding of spatial, temporal, colour and binocular vision, and their influence on visual performance.
Prerequisites: OPB351 and OPB452  Credit points: 12  Contact hours: 5 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-2

OPB452 OCULAR ANATOMY AND PHYSIOLOGY 4
This is a continuation of OPB352. The unit covers the posterior eye, orbit, neural pathways, eye movements, neurophysiology of vision and an introduction to electrophysiological techniques.
Prerequisites: OPB352  Corequisites: OPB351  Credit points: 12  Contact hours: 5 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-2

OPB453 OPHTHALMIC OPTICS 4
Prerequisites: OPB353  Corequisites: OPB351  Credit points: 12  Campus: Kelvin Grove  Teaching period: 2011 SEM-2

OPB550 DISEASES OF THE EYE 5
This unit provides students with a knowledge and understanding of relevant general diseases and those that affect the eye. It includes general disease principles and processes, referral procedures, genetics, congenital, dystrophic and degenerative eye disease, and the ocular manifestation of general disease. [Designated unit]
Prerequisites: OPB451, OPB452, and LSB475  Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

OPB556 ASSESSMENT OF VISION 5
This unit addresses the theory and practice of a number of clinical procedures which are used in eye examination: visual acuity measurement, external and internal examination of the eyes, subjective refraction, and tonometry. Students are also introduced to communication with patients, and the communication principles and skills in taking a case history. [Designated unit]
Prerequisites: OPB451, OPB452, and OPB453  Credit points: 12  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

OPB557 BINOCULAR VISION

Page 3/5
This unit covers the different types of refractive errors and what to expect in different age groups, and the types of binocular vision and accommodation anomalies frequently found in the population. A suite of procedures to investigate binocular and accommodation anomalies is covered.

Prerequisites: OPB451, OPB452  
Corequisites: OPB556  
Credit points: 12  
Campus: Kelvin Grove  
Teaching period: 2011 SEM-1

OPB565 OCULAR PHARMACOLOGY
This unit provides students with the appropriate knowledge of pharmaceutical agents used to examine the eye and to treat eye diseases. [Designated unit]

Prerequisites: OPB550, OPB556, and LSB384  
Corequisites: OPB650  
Credit points: 12  
Contact hours: 4 per week  
Campus: Kelvin Grove  
Teaching period: 2011 SEM-2

OPB656 ASSESSMENT OF VISION 6
This unit introduces the student to the theory and practice of core clinical techniques of vision assessment. The integration of these core clinical techniques with the basic techniques learned previously gives students a thorough knowledge of all aspects of routine patient management. [Designated unit]

Prerequisites: OPB556  
Credit points: 12  
Campus: Kelvin Grove  
Teaching period: 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

PCB240 OPTICS 1
This unit includes a study of selected topics in optics particularly related to aspects of optometry. Topics include geometrical optics in mirrors and lenses, including thick lenses, cylindrical, spherical and toric lenses, colour and colour measurement, photometry, lens aberrations and optical instruments.

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

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 (eg 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: LQB182, LSB118  
Credit points: 12  
Contact hours: 4 per week  
Campus: Gardens Point  
Teaching period: 2011 SEM-1 and 2011 SEM-2

SCB113 CHEMISTRY FOR HEALTH AND MEDICAL SCIENCE
A challenging chemistry unit designed for students undertaking health and/or medical science degrees. A range of topics from sub-discipline areas of general, physical and organic chemistry are covered. General/physical chemistry content includes atomic and molecular structure, electronic structure, bonding, molecular geometry, stoichiometry, thermochemistry, gases, kinetics, equilibrium, acids, bases, buffers, and electrochemistry. Organic chemistry content includes functional group chemistry, reaction mechanisms, stereochemistry, chirality as well as topics of biological significance including the chemistry of peptides, sugars and DNA. The unit is complemented by a practical program involving a range of experiments illustrating important chemical concepts.

Antirequisites: PQB105, SCB111 and SCB121  
Credit points: 12  
Contact hours: 5 per week  
Campus: Gardens Point  
Teaching period: 2011 SEM-1

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 (e.g., 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

SCB131 EXPERIMENTAL CHEMISTRY
Chemistry is the central science. A detailed study of chemistry and related disciplines requires the development of practical laboratory skills for synthesis and chemical analysis. This unit is designed specifically to develop these aspects of chemistry. This unit is a laboratory-based unit which is designed for students who intend to continue with experimental science units. The lectures complement the weekly practical sessions and teach the theory required to interpret experimental results. The aim of this unit is to develop a broad knowledge of, and the practical skills required for, scientific experiments in chemistry. The skills acquired in this unit are transferable to other practical sciences including medical science, biochemistry, molecular biology and pharmacy.

Prerequisites: SCB113 or PQB105 or (SCB111 and SCB121). SCB121 can be concurrently enrolled with SCB131  
Credit points: 12  
Campus: Gardens Point  
Teaching period: 2011 SEM-2