Bachelor of Applied Science (Exercise and Sports Nutrition) (HM45)

Year offered: 2011
Admissions: No
CRICOS code: 047456B
Course duration (full-time): 3 Years
Domestic Fees (indicative): 2011: CSP $3,878 (indicative) per semester
International Fees (indicative): 2011: $11,750 (indicative) per semester
Domestic Entry: February
International Entry: February
QTAC code: 425302
Past rank cut-off: 75
Past OP cut-off: 13
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
Course coordinator: Enquiries to enquirieshms@qut.edu.au or phone: 07 3138 4697
Campus: Kelvin Grove

Overview
This course has been replaced by HM43 Bachelor of Exercise and Movement Science from first semester 2010.

Continuing students will complete their course requirements in HM45 Bachelor of Applied Science (Exercise and Sports Nutrition).

This three-year degree course combines the complementary areas of human movement studies and nutrition and provides you with a foundation for a career in the exercise, health, fitness and nutrition industries.

The degree also provides you with a range of practical experience, including 100 hours of work experience (practicum) in the third year. This is a valuable opportunity for you to gain hands-on experience in the industry. You can work in fitness centres, sports associations and other related organisations.

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 There are additional costs associated with this course including the purchase of the practicum shirt (approximately $50), the attainment of a current First Aid Certificate prior to the commencement of third year. Attendance at the orientation camp is highly recommended though not compulsory (approximately $115).

Further information
For information about this course, please call the School of Human Movement Studies on +61 7 3138 4697 or email enquirieshms@qut.edu.au

Course structure

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMB171 Fitness Health and Wellness</td>
</tr>
<tr>
<td>HMB313 Socio-Cultural Foundations of Physical Activity</td>
</tr>
<tr>
<td>LSB131 Anatomy</td>
</tr>
<tr>
<td>PUB474 Food Science</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1, Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSB231 Physiology</td>
</tr>
<tr>
<td>SCB111 Chemistry 1</td>
</tr>
<tr>
<td>PUB201 Food and Nutrition</td>
</tr>
<tr>
<td>PYB012 Psychology OR</td>
</tr>
<tr>
<td>PYB100 Foundation Psychology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2, Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMB271 Foundations of Motor Control, Learning and Development</td>
</tr>
<tr>
<td>HMB277 Exercise and Sport Nutrition</td>
</tr>
<tr>
<td>HMB274 Functional Anatomy</td>
</tr>
<tr>
<td>PUB530 Health Education and Behaviour Change</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2, Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMB272 Biomechanics</td>
</tr>
<tr>
<td>HMB282 Resistance Training</td>
</tr>
<tr>
<td>HMB273 Exercise Physiology 1</td>
</tr>
</tbody>
</table>
SCB121  Chemistry 2

Year 3, Semester 1
HMB382  Principles of Exercise Prescription
HMB379  Disorders of Human Movement
PUB514  Contract/Project Management
PUB509  Community and Public Health Nutrition

Year 3, Semester 2
HMB470  Practicum 1
HMB275  Exercise and Sport Psychology
PYB208  Counselling Theory and Practice 1
ELECTIVE  Elective - Choose one from the units listed below
HMB361  Functional Anatomy 2
HMB362  Biomechanics 2
HMB371  Motor Control And Learning 2
HMB381  Exercise Physiology 2
HMB384  Injury Prevention and Rehabilitation
HMB480  Advanced Exercise Prescription

Potential Careers:
Fitness Assessor/Personal Trainer, Nutritionist, Sports Scientist.

UNIT SYNOPSISES

HMB171  FITNESS HEALTH AND WELLNESS
The dimensions and interrelationships of health, physical activity and wellness are studied. Basic principles of conditioning and exercise prescription necessary to demonstrate the impact of physical activity on lifestyle diseases, health behaviours and wellness are examined. Principles and theory of behaviour change are employed.
Credit points: 12  Contact hours: 3-4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

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: 2011 SEM-1

HMB272  BIOMECHANICS
This unit includes the application of mechanics as they apply to Human Movement including: kinematics and dynamics of human body models; quantitative analysis; impact; work and power; fluid dynamics; material properties.
Prerequisites: LSB131  Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-2

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 SUM-2 and 2011 SEM-1

HMB274  FUNCTIONAL ANATOMY
This unit includes the following: surface anatomy of the trunk and upper and lower limb; morphological and mechanical properties of bone, muscle-tendon units with implications for physical activity; joint structure and function; analyses of movement tasks including walking and running; cinematography and electromyography in functional anatomy of movement tasks.
Prerequisites: LSB131 or LSB255  Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2011 SUM-2 and 2011 SEM-1

HMB275  EXERCISE AND SPORT PSYCHOLOGY
This unit includes the following: introduction to the psychological factors which influence performance, participation and adherence to both sport and exercise
programs; personality and the athlete; attention and arousal; relaxation theory and practice; aggression and psycho-social development; leadership and team cohesion.

**Prerequisites:** PYB100 or PYB012 or EDB002  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-2

**HMB277 EXERCISE AND SPORT NUTRITION**  
This unit considers the relationship between nutrition and exercise and physical activity. Areas covered include dietary and energy requirements in exercise and sport and substrate utilisation at the cellular level during exercise. The influence that nutrition has on performance via changes in body composition, fuel utilisation, blood biochemistry and ergogenic aids will also be covered. Nutritional supplements and water and electrolyte balance in exercise and sport are also part of this unit.  
**Prerequisites:** HMB172 or PUB201  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-1

**HMB282 RESISTANCE TRAINING**  
This unit aims to equip students with the basic knowledge, skills and competencies required for exercise prescription in resistance training for muscular fitness. Students build on prior knowledge of biomechanics, anatomy, physiology and motor control to develop understanding of the mechanical and physiological determinants of muscular fitness. The unit incorporates a blend of theoretical background, practical knowledge and skills in the main areas of muscular hypertrophy, strength, power and endurance. This understanding is then used to critically analyse resistance training programs.  
**Prerequisites:** LSB131  
**Credit points:** 12  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-2

**HMB313 SOCIO-CULTURAL FOUNDATIONS OF PHYSICAL ACTIVITY**  
This unit lays a foundation in the disciplines of the socio-cultural areas which underpin the study of human movement. It serves as an introduction to the historical, sociological, philosophical, anthropological and cultural foundations of sports, games and leisure activities.  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-1

**HMB361 FUNCTIONAL ANATOMY 2**  
This is a project-based unit designed to enable students with a background in functional anatomy to develop greater expertise in one or a combination of the following areas: electromyography; orthopaedic biomechanics; kinesiology of sport and work; comparative functional anatomy; locomotion and posture; research techniques in functional anatomy.  
**Prerequisites:** HMB274  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove

**HMB362 BIOMECHANICS 2**  
This unit includes the following: measurement techniques within biomechanics; analysis of force systems; photographic, goniometric and electrographic analysis of movement; an introduction to viscoelasticity and biological materials; material properties; mass and inertial characteristics of the human body; applied aspects of biomechanics undertaken from a research project perspective.  
**Prerequisites:** HMB272 and HMB274  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-1

**HMB371 MOTOR CONTROL AND LEARNING 2**  
This is an advanced unit which provides an in-depth view of theories and concepts in motor learning and control; how we control actions in both everyday and skilled behaviours, and how this capability is acquired. This course provides a multidisciplinary perspective, drawing on research from psychology, neuroscience, biomechanics, robotics, neural networks and medicine. The unit is organised around the theme of sensorimotor integration as related to posture and balance, locomotion and arm movements such as reaching, grasping and pointing.  
**Prerequisites:** HMB271  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2011 SEM-2

**HMB379 DISORDERS OF HUMAN MOVEMENT**  
This unit introduces a selection of disorders and disease states that limit or alter the capacity for movement and physical activity. Each is described in terms of relevant epidemiology and pathophysiology, emphasising the relationship between each disorder and movement or activity, together with factors affecting this relationship. The unit provides students with a basic knowledge of a selection of movement-related disorders, as a foundation for subsequent applications, whether in research, working with special populations, in rehabilitation, or in other clinical settings. The unit also enhances the ability of students to independently study disorders not covered in the unit.  
**Prerequisites:** HMB271  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**HMB381 EXERCISE PHYSIOLOGY 2**  
This unit examines the integrated regulation of the organ system examined in Exercise Physiology 1. Within this integrated perspective current research areas will be highlighted, including but not limited to (1) exercise performance and environmental stress, (2) special aids to exercise training and performance, and (3) limitations to exercise in healthy normal individuals, elite athletes and...
selected patient populations. 

Prerequisites: HMB273  Credit points: 12  Contact hours: 3-4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

HMB382 PRINCIPLES OF EXERCISE PRESCRIPTION
In this unit, students examine the physiological principles and methods used in training and conditioning programs at all levels of physical activity. The integration of fitness assessment and exercise prescription is a major component of the unit, introducing the student to these requirements in the context of aerobic conditioning, resistance training, weight loss and flexibility. There is a strong emphasis on putting theory into practice, including the development and utilisation of appropriate practical skills in both fitness assessment and exercise prescription. 

Prerequisites: HMB273 and HMB282  Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1

HMB384 INJURY PREVENTION AND REHABILITATION
This unit considers the following: epidemiology and nature of common injuries that occur at home, school, work and during sporting activities; current philosophies of preventative measures and strategies for the treatment and rehabilitation of injuries; the role of health training, exercise and fitness in injury prevention, treatment and rehabilitation regimes; the pathology of injuries and repair processes highlighted by examining specific examples. 

Prerequisites: HMB274  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

HMB470 PRACTICUM 1
In the first of the Human Movement dedicated practicum units, students undertake in-depth experience at two different workplaces (40 hours each) while maintaining ongoing involvement in the School's clinics (20 hours). The student is provided with an extended opportunity to apply classroom learned knowledge and skills under the supervision of Human Movement Practitioners. Workplace involvement is preceded by a vocational skill seminar and workshop program while an interactive analysis program is instigated post practicum. [Designated unit] 

Prerequisites: HMB382 and HMB385. HMB385 can be taken in the same study period.  Credit points: 12  Campus: Kelvin Grove  Teaching period: 2011 SEM-1 and 2011 SEM-2

HMB480 ADVANCED EXERCISE PRESCRIPTION
This is a companion unit to HMB382, and extends the understanding of how fitness assessment and exercise prescription can be applied to an individual. A number of different disease states, special populations and scenarios are used to examine the potential role of physical activity and appropriately prescribed exercise to maintain and improve functional capacity. A strong emphasis is placed on identifying the problems faced in fitness assessment and exercise prescription for special cases and conditions, and finding appropriate solutions. 

Prerequisites: HMB382  Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

LSB131 ANATOMY
This unit includes basic concepts of anatomy: an overview of the structure of cells, body tissues, and body systems; aspects of surface anatomy which are relevant to human movement; musculoskeletal systems. 

Antirequisites: LSB142, LSB182, LSB258  Equivalents: LSB145  Credit points: 12  Contact hours: 5 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

LSB231 PHYSIOLOGY
This unit covers the general physiological principles such as homeostasis and how all systems in the body contribute to it. Topics include cells, transport processes, cardiovascular system, cardiac electrical activity, cardiac output, regulation of blood pressure, respiratory system, endocrine system, pulmonary ventilation and its function. 

Antirequisites: LSB250  Equivalents: LSB245  Credit points: 12  Contact hours: 4 per week  Campus: Gardens Point  Teaching period: 2011 SEM-2

PUB201 FOOD AND NUTRITION
This unit includes the following: an introduction to the history of food and nutrition in Australia; the food system; the food supply; proteins, carbohydrates, fats, vitamins and minerals; food grouping systems; dietary guidelines; the recommended dietary intakes; nutrition through the life cycle; food and nutrition problems; nutrition as a public health issue; and international nutrition issues. 

Credit points: 12  Contact hours: 4 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1 and 2011 SEM-2

PUB474 FOOD SCIENCE
To fulfil their needs as future professionals working in food and nutrition related areas, students explore the nature of foods and their constituents, studying the underlying scientific principles related to the manufacture, preservation, distribution and the final production of food items for consumption. This unit is available ONLY in courses where it is listed as a core unit. 

Prerequisites: PUB201 (This unit is available ONLY in courses where listed as a core unit)  Credit points: 12  Contact hours: 5 per week  Campus: Kelvin Grove  Teaching period: 2011 SEM-1
PUB509 COMMUNITY AND PUBLIC HEALTH NUTRITION
This unit includes the following: the measurement of the nutritional status of a community; nutrition monitoring and surveillance; food and nutrition policy at international, national and state levels; international nutrition issues; nutritional epidemiology; examination of the evidence of nutrition problems within Australia; at risk groups; tools and their validity for measuring nutritional status and nutrition outcome at the population and group level; and dietary intake methodology.
Prerequisites: PUB201 Credit points: 12 Contact hours: 4 per week Campus: Kelvin Grove Teaching period: 2011 SEM-1

PUB514 CONTRACT/PROJECT MANAGEMENT
This unit aims to prepare students for participation in contract and project management in the health sector. The unit provides advanced undergraduate students with an opportunity to develop an understanding of health project contract management using both theoretical and practical examination of current state and national contracts and projects.
Credit points: 12 Contact hours: 4 per week Campus: Kelvin Grove and External Teaching period: 2011 SEM-1

PUB530 HEALTH EDUCATION AND BEHAVIOUR CHANGE
This unit gives students the skills to bring about change in health-related behaviours through educational interventions. Topics covered include key health education and behaviour change theories, frameworks, strategies; approaches to bring about change in different contexts; research and design of educational interventions to suit different target populations in different settings, using evidence-based practice; and health literacy as a function of health education.
Antirequisites: PUB329, PUB341 Credit points: 12 Campus: Kelvin Grove Teaching period: 2011 SEM-1

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: Kelvin Grove Teaching period: 2010 SEM-1 and 2010 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

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