Bachelor of Exercise and Movement Science (HM43)

Year offered: 2010
Admissions: Yes
CRICOS code: 070083A
Course duration (full-time): 3 years
Domestic fees (indicative): 2010: CSP $2,945 (indicative) per semester
Domestic Entry: February
International Entry: February
QTAC code: 425302
Past rank cut-off: 74
Past OP cut-off: 13
OP Guarantee: Yes
Total credit points: 288
Course coordinator: All course enquiries to email: enquirieshms@qut.edu.au or phone: 07 3138 4697
Campus: Kelvin Grove

Overview
HM43 Bachelor of Exercise and Movement Science will replace HM45 Bachelor of Applied Science (Exercise and Sports Nutrition) from 2010 for all commencing students.

The Bachelor of Exercise and Movement Science provides students with both foundation knowledge in the exercise and movement sciences and their applications to health and wellness, or sport science and performance assessment, or research. On graduation students will have met the professional requirements to work as Exercise Scientists (subject to accreditation by the Australian Association for Exercise and Sports Science).

Study Areas
There are three study areas available in the course:
- Health and Wellness
- Sport Science and Performance Analysis
- Research in Exercise and Movement Science

The Health and Wellness Study Area is intended for students who seek to work in corporate, government or community positions employing their knowledge of exercise science to support health and wellbeing.

The Sport Science and Performance Analysis study area is for students with a strong interest in sport performance and the goal of sport-related employment, for example, fitness instructors, sportspersons, coaches and sporting officials.

The Research in Exercise and Movement Science study area provides a pathway for students who are considering Honours and/or Higher Research Degrees, or who are considering postgraduate courses in medicine, physiotherapy and other disciplines, and for whom more advanced study and some research experience is valuable.

Students may elect not to undertake a major. These students complete their course requirements by undertaking six elective units.

Course structure
Students complete 18 core units and six additional units from the following:
- six units from a Study Area OR
- four units from a University wide unit set plus two Faculty of Health electives OR
- Two Faculty of Health elective plus four electives from across the University. These could include units from the Study Areas in the course.

The Faculty of Health units are selected from undergraduate elective lists. At least four of these electives must at the intermediate or advanced stage, ie offered in year 2 or later.

Assumed knowledge
From 2011, English (4 SA) and Maths B (4 SA) and at least one of: Chemistry, Physics, Biological Science. Recommended study: Health Education or Physical Education.

Career outcomes
Graduates of this three-year program pursue a broad range of careers including those in corporate and community health, wellness and fitness, and sports performance.

Pathways
Graduates of HM43 Bachelor of Exercise and Movement Science can apply for admission to the HM44 Bachelor of Clinical Exercise Physiology if they should wish to achieve full Exercise Physiologist status.

Professional recognition
Accreditation with the Exercise and Sports Science Australia (ESSA) is being sought for the course to give graduates professional recognition as Exercise Scientists.

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

Deferment
All domestic applicants offered admission to undergraduate award courses may apply to defer commencement of their study. A deferment application will not normally be considered for courses where specific admission requirements apply, for example submission of folios or undertaking auditions. Applicants are not entitled to hold a deferred place and hold a place in another QUT course for the same period.

Course structure

**Year 1, Semester 1**
- HMB110 Introduction to Exercise and Movement Science
- HMB171 Fitness Health and Wellness
- HMB313 Socio-Cultural Foundations of Physical Activity
- LSB131 Anatomy

**Year 1, Semester 2**
- HMB172 Nutrition and Physical Activity
- LSB231 Physiology
- HMB276 Research in Human Movement
- PYB012 Psychology

**Year 2, Semester 1**
- HMB271 Foundations of Motor Control, Learning and Development
- HMB274 Functional Anatomy
  - Major 1 OR Elective
  - Major 2 OR Elective

**Year 2, Semester 2**
- HMB272 Biomechanics
- HMB273 Exercise Physiology 1
- HMB275 Exercise and Sport Psychology
- HMB282 Resistance Training

**Year 3, Semester 1**
- HMB382 Principles of Exercise Prescription
  - List A Elective
  - Major 3 or Elective
  - Major 4 or Elective

**Year 3, Semester 2**
- HMB470 Practicum 1
  - List A Elective
  - Major 5 or Elective

Major 6 or Elective

**Health and Wellness Study Area**

**Health and Wellness Study Area units**
- HMB338 Wellness Processes and Strategies
- PYB007 Interpersonal Processes and Skills
- HMB339 Health and Wellness in Organisations
- PUB530 Health Education and Behaviour Change
- PYB208 Counselling Theory and Practice 1
- PUB406 Health Promotion Practice

**Sport Science and Performance Analysis Study Area units**
- HMB377 Children in Sport
- HMB315 Performance Skills 2
- HMB337 Organisation and Management In Physical Education And Sport
- HMB347 Performance Analysis
- HMB348 Applied Sport and Exercise Psychology
- HMB349 Training and Skill Development in Sport

**Research in Movement and Exercise Science Study Area units**
- INB102 Emerging Technology
- HMB363 Independent Study
  - List A elective
  - List A elective
- PYB350 Advanced Statistical Analysis
- HMB483 Research Internship

**List A - Exercise and Movement Science Electives**
- HMB361 Functional Anatomy 2
- HMB362 Biomechanics 2
- HMB371 Motor Control And Learning 2
- HMB381 Exercise Physiology 2

**UNIT SYNOPSES**
HMB110 INTRODUCTION TO EXERCISE AND MOVEMENT SCIENCE
This unit introduces students to the field of exercise and movement science and allows students to develop knowledge and academic skills required both for undergraduate study and professional practice. Students will undertake structured tutorial activities on selected topics in exercise and movement science that include measurement and observation, analysis, and the preparation of reports.
Credit points: 12  Teaching period: 2010 SEM-1

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: 2010 SEM-1

HMB172 NUTRITION AND PHYSICAL ACTIVITY
This unit is an introduction to principles of nutrition in relation to the physical activity setting, and the role of nutrition and physical activity in weight management. This unit also covers the essential elements of child growth and development (auxology) in relation to nutrition and health. The unit is designed to underpin studies in exercise physiology and sports nutrition.
Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 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

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.

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

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: 2010 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 psychological development; leadership and team cohesion.
Prerequisites: PYB100 or PYB012 or EDB002  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

HMB276 RESEARCH IN HUMAN MOVEMENT
This unit includes principles of research: purposes, philosophy, applications. It addresses quantitative research including basic statistics, descriptives, ANOVA, correlation, regression and non-parametrics, and basic research design.
hypothesis testing. Qualitative research includes methodology, data collection, and theory building. Research presentation includes: writing a research report and developing conclusions. This unit also considers application of research, examples in human movement, related literature, computer data analysis, and information retrieval.

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

**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:** 2010 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 sport, games and leisure activities.

**Credit points:** 12  **Contact hours:** 4 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-1

**HMB315 PERFORMANCE SKILLS 2**
In this unit various game forms are analysed in order to identify fundamental game skills and problem areas in skill development. Emphasis is placed on the application of relevant movement knowledge and skills to suit game situations and on learning appropriate strategies for teaching and coaching selected games.

**Credit points:** 12  **Contact hours:** 6 per week for 9 weeks  **Campus:** Kelvin Grove

**HMB337 ORGANISATION AND MANAGEMENT IN PHYSICAL EDUCATION AND SPORT**
School physical education departments and sporting associations are medium-sized organisations requiring direction for servicing a large client base. In this unit students examine the role of administrators and the administration of monies, facilities and human resources in a school physical education and sports setting.

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

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

**HMB362 BIOMECHANICS 2**
This unit includes the following: measurement techniques within biomechanics; analysis of force systems; photographic, goniometric and electrophysiological 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:** 2010 SEM-1

**HMB363 INDEPENDENT STUDY**
This unit is offered to meet the specific interest of students beyond content offered within existing units. Students conceptualise, plan and execute a research study including survey of literature, development of an action plan, conceptualise, plan and execute a research study including survey of literature, development of an action plan, reflection on a practice or situation, and proposal for future action. The student works at an advanced level and autonomously under the supervision of a lecturer.

**Other requisites:** Consent of Course Coordinator is required to enrol  **Credit points:** 12  **Contact hours:** 4 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-1 and 2010 SEM-2

**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:** 2010 SEM-2
HMB377 CHILDREN IN SPORT
This unit includes the following: physical development of the young athlete; physical maturation; benefits of participation in sport and physical activity; psycho-social issues; positive and negative effects of participation including competitive stress; injuries to the growing skeleton; overtraining, overuse injuries; strength training in childhood and adolescence; promotion of safety in sport; accreditation of teachers and coaches; policy guidelines for junior sport; Aussie sport program.

Credit points: 12    Contact hours: 3 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: 2010 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: 2010 SEM-1

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.

Prerequisites: HMB382    Credit points: 12    Campus: Kelvin Grove    Teaching period: 2010 SEM-1 and 2010 SEM-2

INB102 EMERGING TECHNOLOGY
The aim of this unit is to provide you with a conceptual framework so that you clearly identify Information Technologies and their purpose. This task will be fun as it covers a wide spectrum of ideas and allows us to examine some currently popular technologies. Information Technology has become so entwined with everyday life that identifying its scope is difficult, which also makes it difficult to identify opportunities where IT might further infiltrate into our daily lives for work and play. To achieve these aims, the unit introduces you to some of the theories and engineering practicalities that have already resulted in technological advances in the area of information technology. Concepts leading to existing technologies are introduced during lectures, which are followed by laboratory sessions where students will be encouraged to discuss social change, future information tools and explore the concepts required for constructing these technologies.

Antirequisites: ITB005    Credit points: 12    Contact hours: 3 per week    Campus: Gardens Point    Teaching period: 2010 SEM-1 and 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: 2010 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: 2010 SEM-2

PUB406 HEALTH PROMOTION PRACTICE
This unit ties together the fundamental health promotion knowledge and constructs covered in earlier units in the public health subject area. It builds upon this basis to introduce students to the range of strategies available to a health promotion practitioner. The unit promotes an appreciation of the strengths and weaknesses of different approaches, as well as related administrative factors. Students undertake a small health promotion project in groups of 3-4. This is an essential field of study for those students who wish to work in a health promotion or related
field.
Prerequisites: PUB251 or PUB530  Credit points: 12
Contact hours: 3  Campus: Kelvin Grove  Teaching period: 2010 SEM-2

PUB530 HEALTH EDUCATION AND BEHAVIOUR CHANGE
Antirequisites: PUB329, PUB341  Credit points: 12
Teaching period: 2010 SEM-1

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

PYB350 ADVANCED STATISTICAL ANALYSIS
The unit provides students considering further study in psychology with a thorough grounding in analysis of variance techniques, an introduction to multiple regression, and the data analysis tools used in a broad range of research designs in the social sciences. The unit extends the introduction to analysis of variance and regression provided in PYB210, considering more complex designs involving two or more independent variables. The unit is both theoretical (including the use of conceptual formulae to analyse simple data sets by hand) and practical (analysing data sets using the SPSS statistical package), giving students a firm understanding of the principles underlying each analysis.
Prerequisites: PYB210  Credit points: 12  Contact hours: 3 per week  Campus: Kelvin Grove  Teaching period: 2010 SEM-2