



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.
Please consult the web for updates that may occur during the year.

Description: Biophysical Foundations of Physical Activity

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
EDO	2462	87503	1, 2009	ONC	1.00	Toowoomba

Academic group:	FOEDU
Academic org:	FOE002
Student contribution band:	National Priority Teaching
ASCED code:	070303

STAFFING

Examiner: Helmut Geiblinger

RATIONALE

Movement, in one sense or another, is a fundamental quality of one's existence. From a teaching and or coaching experience, understanding human movement is fundamental to enhancing and improving the quality of life experiences. For this purpose the study of human movements from a bio-physical perspective is founded upon an interdisciplinary framework. This course is designed to introduce undergraduate students the networking's of the disciplines that constitute this interdisciplinary framework. Sub-disciplines that contribute to an understanding of the production of movement, its control and determinants of efficiency that sustain physical activity will be explored. Teachers, coaches and movement specialists within this broad field of human movement need to understand how such a framework can affect performance and learning of motor skills. Knowledge of the relationships between body systems and the capacity for human physical performance provides a sound basis for analysing the theoretical principles for teaching, coaching and rehabilitation in movement education.

SYNOPSIS

The philosophy underlying this course is that there is knowledge base that is important for a myriad of specialised areas of interest, such as movement education, health education, fitness, physical therapy, rehabilitation and even medicine. In response to this philosophy, this course provides the undergraduate student with an introduction to the relationships between functional anatomy, mechanics of movement, movement control and metabolic responses to various levels of activity and exercise. The key elements within these sub-disciplines are explored to provide grounding in the principles on which movement is based.

OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course students will be able to:

1. describe and elaborate on the general contribution of skeletal structure to locomotion (examination)
2. describe the general structure and function of skeletal muscle (examination)
3. understand human locomotion in mechanical terms (assignment and examination)
4. understand the general principles of metabolic responses to exercise (examination)
5. understand the various principles of physical training strategy (assignment)
6. analyse these principles in relation to paediatric physical activity and growth patterns (examination)
7. demonstrate an ability to apply principles of training and use this knowledge to develop a sport specific and sequential training program (assignment)
8. develop an understanding of physiological and psychological principles underpinning sport and exercise (assignment and examination)
9. demonstrate competence in and appropriate use of language and literacy skills specific to the field of human movement (examination and assignment)
10. demonstrate competence in and appropriate use of language and literacy skills including spelling, grammar, punctuation and bibliographic referencing. (Assignment)

TOPICS

Description	Weighting (%)
1. Functional Anatomy and the Mechanics of Human Movement	25.00
1.1. Musculo-Skeletal System	
1.2. Musculoskeletal Adaptations due to Exercise and Aging	
1.3. Anthropometry, Body Composition and Sport	
1.4. Cardiovascular and Respiratory Performance	
2. Biomechanical Bases of Human Movements	25.00
2.1. Kinetics and Kinematics	
2.2. Biomechanical Analysis	
2.3. Children, Adolescents and Ageing Considerations	
3. Physiological Parameters of Performance	25.00
3.1. Principles of Training	
3.2. Exercise, Metabolism and Energy Systems	
3.3. Training and Human Adaptation	
3.4. Nutrition and Sport	
3.5. Exercise and Environmental Conditions	

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| 4. | Psychological Parameters of Performance | 25.00 |
| 4.1. | Psychological Skills Training for Performance | |
| 4.2. | Psychological Profiling | |
| 4.3. | Children and Sport Psychology | |

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Bompa , T 1999, *Periodization: theory and methodology of training*, 4th edn, Human Kinetics, Australia.

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Whether you are on, or off campus, the USQ Library is an excellent source of information <http://www.usq.edu.au/library>. The gateway to education resources is here ... <http://www.usq.edu.au/library/faculties/education/default.htm>

Abernethy, B, Kippers, V, Mackinnon, LT, Neal, RJ & Hanrahan, S 2000, *The biophysical foundations of human movements*, 4th edn, McMillan Publishers, South Yarra.

Behnke, Robert S 2006, *Kinetic anatomy*, 2nd edn, Human Kinetics, Champaign,IL.

Drews, CM 2000, *Physiology of sport and exercise: study guide*, Human Kinetics, Champaign IL.

Housh, T & Housh, D 2003, *Introduction to exercise science*, 2nd edn, Allyn & Bacon, Boston.

Lamb, DR 1990, *Physiology of exercise: responses and adaptations*, 4th edn, McMillan, New York.

Wilmore, JH & Costill, DL 2004, *Physiology of sport and exercise*, Human Kinetics, Champaign, IL.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Directed Study	70.00
Independent Study	70.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT	40.00	40.00	04 Mar 2009 (see note 1)
LAB REPORT	20.00	20.00	04 Mar 2009
EXAMINATION	40.00	40.00	END S1 (see note 2)

NOTES

1. The examiner will advise the due dates and topic for assessment item.
2. APA style is the referencing system required in this course. Students should use APA style in their assignments to format details of the information sources they have cited in their work. The USQ library provides advice on how to format information sources using this system. http://www.usq.edu.au/library/help/ehelp/ref_guides/apastyle/default.htm Students will be advised via USQStudyDesk of the examination date for this course when the official timetable for the semester has been finalised.

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration
- 2 Requirements for students to complete each assessment item satisfactorily:
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks.
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
- 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
- 6 Examination information:
Closed Examination: Candidates are allowed to bring only writing and drawing instruments into the Closed examination.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
- 8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene

University Regulations. These regulations can be found at the URL
<http://www.usq.edu.au/corporateservices/calendar/part5.htm>