



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: Cardiorespiratory and Sports Physiology

| Subject | Cat-nbr | Class | Term    | Mode | Units | Campus    |
|---------|---------|-------|---------|------|-------|-----------|
| BIO     | 3333    | 90179 | 2, 2009 | ONC  | 1.00  | Toowoomba |

|                                   |        |
|-----------------------------------|--------|
| <b>Academic group:</b>            | FOSCI  |
| <b>Academic org:</b>              | FOS002 |
| <b>Student contribution band:</b> | 6      |
| <b>ASCED code:</b>                | 010999 |

### STAFFING

Examiner: Jianxiong Wang  
Moderator: Nicola Laws

### REQUISITES

Pre-requisite: BIO2203

### RATIONALE

The aim of this course is to provide an in-depth understanding of the cardiorespiratory system of the human body and gain knowledge regarding adaptations to the human body as a consequence of acute and chronic exercise

### SYNOPSIS

This course builds on the foundations obtained in the course BIO2203 (Systems Physiology). The first components of this course extends the students' knowledge of the structure and function of the cardiac, vascular and respiratory systems in health and disease. Subsequent components will examine physiological and anatomical adaptations to acute and chronic exercise.

### OBJECTIVES

On completion of this course students will be able to:

1. discuss the physiology of cardiac muscle and its conduction system (Laboratory Report; Essay, Exam);
2. describe the mechanisms regulating regional blood flow (Laboratory Report; Essay; Exam);
3. explain regulation of cardiac output and blood pressure (Laboratory Report; Essay; Exam);
4. discuss the major aspects of pulmonary ventilation and perfusion (Laboratory Report; Essay; Exam);
5. explain how the blood, respiratory and renal systems regulate acid:base balance (Essay; Exam);

6. describe the major changes in cardiovascular, respiratory, renal, skeletal muscle, blood and skeletal systems adapt during acute term and chronic exercise (Laboratory Report; Essay; Exam);
7. demonstrate effective skills for searching databases and electronic resources (Laboratory Report; Essay);
8. demonstrate skills and knowledge required to perform laboratory experiments safely with appropriate equipment, including computer software and hardware for data acquisition and analysis (Laboratory Report).

## TOPICS

| Description   | Weighting (%) |
|---|---------------|
| 1. Regulation of cardiac signal conduction and contractility                          | 16.00         |
| 2. Mechanisms regulating regional blood flow  | 14.00         |
| 3. Regulation of cardiac output and blood pressure                                    | 14.00         |
| 4. Control of arterial blood gases concentrations and ventilation: perfusion matching | 10.00         |
| 5. Regulation of acid:base balance  | 12.00         |
| 6. Adaptation of the body to acute exercise and recovery from acute exercise          | 16.00         |
| 7. Adaptation of the body resulting from chronic exercise                             | 18.00         |

## 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).

Guyton, AC & Hall, JE 2005, *Textbook of medical physiology*, 11th edn, Elsevier, Philadelphia. (ISBN: 0721602401)

## 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.

Berne, RM & Levy, MN 2000, *Principles of Physiology*, 3rd edn, Mosby, St Louis.

Bray, JJ et al 1999, *Lecture Notes on Human Physiology*, 4th edn, Blackwell Science, Malden.

## STUDENT WORKLOAD REQUIREMENTS

| ACTIVITY                        | HOURS  |
|---------------------------------|--------|
| Examinations                    | 2.00   |
| Laboratory or Practical Classes | 18.00  |
| Lectures                        | 26.00  |
| Private Study                   | 105.00 |
| Tutorials                       | 6.00   |

## ASSESSMENT DETAILS

| Description          | Marks out of | Wtg (%) | Due date                    |
|----------------------|--------------|---------|-----------------------------|
| LABORATORY REPORT    | 50.00        | 20.00   | 20 Jul 2009<br>(see note 1) |
| 2000 WORD ESSAY      | 50.00        | 20.00   | 20 Jul 2009<br>(see note 2) |
| 2 HR RESTRICTED EXAM | 120.00       | 60.00   | END S2<br>(see note 3)      |

### NOTES

1. Examiner will advise due date of report.
2. Examiner will advise due date of essay.
3. Examination dates will be available during the semester. Please refer to the examination timetable when published.

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:  
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) 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 complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item.
- 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:

Candidates are allowed access only to specific materials during a Restricted Examination. The only materials that candidates may use in the restricted examination for this course are: writing materials (non-electronic and free from material which could give the student an unfair advantage in the examination); calculators which cannot hold textual information (students must indicate on their examination paper the make and model of any calculator(s) they use during the examination). Students whose first language is not English, may, take an appropriate unmarked nonelectronic translation dictionary (but not technical dictionary) into the examination. Dictionaries with any handwritten notes will not be permitted. Translation dictionaries will be subject to perusal and may be removed from the candidate's possession until appropriate disciplinary action is completed if found to contain material that could give the candidate an unfair advantage.

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> or in the current USQ Handbook.

## ASSESSMENT NOTES

- 9 In order to attend laboratory classes, students must provide and wear appropriate personal protective equipment. This shall include a laboratory coat, closed in shoes, and safety glasses. Such equipment must be approved by supervising staff. Failure to provide and wear the appropriate safety equipment will result in students being excluded from classes.
- 10 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete-Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).
- 11 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner. In accordance with University Policy, the Examiner may grant an extension of the due date of an assignment in extenuating circumstances. The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media. The Faculty will NOT accept submission of assignments by facsimile. Students may be required to provide a copy of assignments submitted for assessment purposes. Such copies should be dispatched to the USQ within 24 hours of receipt of a request to do so.