



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: Physiology and Pathophysiology 1

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
NSC	3620	74283	1, 2008	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS002
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	010913

### STAFFING

Examiner: Kerry Withers  
Moderator: Guang Liu

### REQUISITES

Pre-requisite: BIO1203

### RATIONALE

This is the first of two courses intended to provide the students with an understanding of the functioning of the human body in health and disease, an effective grounding in which is essential for most students wishing to become qualified for employment within the health care industry.

### SYNOPSIS

This course examines the concepts, nomenclature and some diagnostic procedures associated with disease states, the principles of inheritance, tissue maintenance and neoplasia, the physiology and pathophysiology of blood, body fluid maintenance, nutrition, metabolism, and the pathophysiology of the cardiovascular, respiratory and digestive systems.

### OBJECTIVES

On successful completion of this course students will be able to:

1. explain the concepts of cellular and whole body homeostasis and define the most widely used terms that describe aspects of ill health (Assignment, Exam);
2. summarise the principles and purposes associated with the devices used for medical imaging or other diagnostic or monitoring reasons (Assignment, Exam);
3. describe the fundamental processes involved in the inheritance of specific traits (Exam);
4. explain the essential differences between inherited and congenital disorders, and list some of the more common and important examples of each (Exam);
5. summarise the processes whereby tissue cells maintain and replace themselves as needed, with particular reference to the phenomenon of mitosis (Exam);

6. define the tissue growth patterns known as atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia, and neoplasia and explain their clinical significance (Assignment, Exam);
7. discuss pathogens and the immune systems as causes of disease manifestations (Exam);
8. describe the major processes associated with healing and other body responses to trauma, including the more common instances of abnormal healing (Exam);
9. describe the production, maintenance and functions of the various components (both cellular and soluble) of blood and the major diseases associated with these components (Exam);
10. describe the physiology of the cardiovascular system in health and its more important pathophysiology in ill-health (Exam);
11. describe the physiology of the respiratory system in health and its more important pathophysiology in ill-health (Exam);
12. list the various body fluid compartments and outline the interactions that occur between these compartments as the result of changes in body water, electrolyte, and acidity levels (Exam);
13. describe the physiology of the kidneys and urinary system and explain how they serve to maintain body fluid homeostasis (Exam);
14. describe the more common disease states involving the human kidneys and lower urinary tract (Exam).

## TOPICS

	Description	Weighting (%)
1.	CONCEPTS OF HEALTH AND DISEASE - Principles of homeostasis in the state of health; some terms and general features associated with disease states; the principles behind some commonly used imaging and monitoring devices; the role of pathology tests in the diagnosis of diseases.	12.00
2.	DISEASES WITH A GENETIC AETIOLOGY - Principles of inheritance; genes, loci and features of chromosomes; inheritance laws and patterns; inheritance of disorders; congenital effects not due to genetic abnormalities.	10.00
3.	NEOPLASTIC, PATHOGEN-INDUCED AND IMMUNOLOGICAL DISEASES - The cell cycle; tissue growth, maintenance and repair processes; abnormal growth patterns, including atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia and neoplasia; the pathophysiology of benign and malignant neoplasms; effects of pathogens on healthy and traumatised tissues; the immune response and its pathophysiological effects.	14.00
4.	TRAUMA AND HEALING PATHOPHYSIOLOGY - Common forms of trauma; the inflammatory response; the normal processes of healing; chronic inflammatory disorders; abnormal healing patterns.	12.00
5.	HAEMATOLOGICAL DISEASES - Functions of blood plasma components; haemopoiesis; functions and fates of the formed elements of blood; some neoplastic diseases of the bone marrow and lymphoid organs.	12.00

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| 6. | CARDIOVASCULAR DISEASE - Normal functions of the heart and vascular systems, including the lymphatics; controls of cardiovascular functioning; major diseases of the heart and blood vessels; shock as a pathophysiological phenomenon.   | 14.00 |
| 7. | DISEASES OF THE RESPIRATORY SYSTEM - Normal functions of the respiratory tree; principles of gas exchange across the alveolar linings; controls of respiratory activities; major diseases of the respiratory system.  | 13.00 |
| 8. | RENAL AND BODY FLUID DISEASES - Normal functions of the kidneys and lower urinary tract; major diseases of the kidneys and urinary tract; body fluid compartments and their interactions; factors controlling the volumes and concentrations of the various body fluid compartments; diseases of the body fluid compartments; maintenance of body fluid pH; acidosis and alkalosis. | 13.00 |

### **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).

Kumar, V, Abbas, AK & Fausta, N 2005, *Robbins and cotran: pathologic basis of disease*, 7th edn, Elsevier Saunders, Philadelphia.

### **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.

Braunwald, E 2004, *Harrison's principles of internal medicine*, 16th edn, McGraw-Hill, New York, Vol 1-2.

(CD Package. Also available online through ebrary.)

Jenkins, GW, Kemnitz, CP & Tortora, GJ 2007, *Anatomy and physiology: from science to life*, John Wiley & Sons, Holoken, NJ.

Marieb, EN & Hoehn, K 2006, *Human anatomy and physiology*, 7th edn, Benjamin/Cummings, Menlo Park, California.

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	20.00
Directed Study	46.00
Examinations	2.00
Private Study	97.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT	25.00	25.00	19 May 2008
2HR CLOSED M/C EXAMINATION	75.00	75.00	END S1 (see note 1)

### NOTES

1. Examination due dates will be available during the semester. Please refer to the examination timetable when published.

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:  
There are no attendance requirements for this course. However, it is the students' responsibility 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 an assessment item satisfactorily, students must obtain at least 50% of the marks available for that 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 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> or in the current USQ Handbook.

## **ASSESSMENT NOTES**

- 9 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.
- 10 In accordance with University Policy, the Examiner may grant an extension of the due date of an assignment in extenuating circumstances.
- 11 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media
- 12 The Faculty will NOT accept submission of assignments by facsimile.
- 13 Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.
- 14 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
- 15 Students who do not qualify for a Passing grade may, at the discretion of the Examiner, be awarded a Supplementary Examination and/or assigned additional work to demonstrate to the Examiner that they have achieved the required standard. Students who have undertaken all of the required assessments in a course but who have failed to meet the minimum requirements for a passing grade within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to meet the minimum requirements for a passing grade after a period of non-directed personal study.
- 16 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).objectives of the course after a period of non directed

## **OTHER REQUIREMENTS**

- 1 Students can expect that questions in assessment items in this course may draw upon knowledge and skills that they can reasonably be expected to have acquired before enrolling in the course. This includes knowledge contained in pre-requisite courses and appropriate communication, information literacy, analytical, critical thinking, problem solving or numeracy skills. Students who do not possess such knowledge and skills should not expect to achieve the same grades as those students who do possess them.