



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: Pharmacology and Pathophysiology for Nurses

| Subject | Cat-nbr | Class | Term | Mode | Units | Campus |
|---------|---------|-------|---------|------|-------|--------------|
| NSC | 2500 | 87039 | 1, 2009 | ONC | 1.00 | Fraser Coast |

| | |
|-----------------------------------|---------------------------|
| Academic group: | FOSCI |
| Academic org: | FOS002 |
| Student contribution band: | National Priority Nursing |
| ASCED code: | 060301 |

STAFFING

Examiner: Helen Ison
Moderator: Guang Liu

REQUISITES

Pre-requisite: BIO1203

RATIONALE

The purpose of this course is to provide students with an understanding of the pathophysiology of the most common diseases affecting patients in developed countries. This course will then build on an understanding of normal physiology and pathophysiology to address treatment approaches to such diseases with a particular focus on pharmacology and nutrition. Information learnt from this course will be integrated into learning from nursing practice courses.

SYNOPSIS

This course focuses on understanding the basis for disease states that are most prevalent in the developed world and how they can be treated. Major topics to be covered include mental health disorders, inflammatory, cardiovascular, musculoskeletal, gastrointestinal, endocrine, respiratory, urinary diseases, shock and cancer. Perioperative drugs will also be considered.

OBJECTIVES

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

1. Describe how a lack of homeostasis can lead to a disease state by addressing the following:
Dysfunction due to poor nutrition and the concept of foetal metabolic imprinting (Assessment items 1, 2); Dysfunction due to changes in the level of, or the responsiveness of central and peripheral neurotransmitters (Assessment items 1, 2, Laboratory classes, Quizzes, SDL); Dysfunction of the inflammatory response (Assessment items 1, 2, 3, 4); Dysfunction of hormonal regulation (Assessment items 1, 2, 3, 4 Laboratory classes, Quizzes);

2. Explain the theories underlying a biological basis of mental health breakdown including schizophrenia, depression, mania and anxiety and the use of drugs to improve mental health (Assessment items 1, 2, SDL);
3. Explain the theories underlying nervous system health breakdown including stroke, Alzheimer's and Parkinson's disease and how drugs can be used to improve health breakdown symptoms (Assessment items 3, 4, SDL);
4. Explain the pathophysiology of common cardiovascular conditions and name and describe the importance of nutrition, fluid regulation, exercise and the major drugs groups used to treat these conditions (Assessment items 3, 4, Laboratory classes, Quizzes, SDL);
5. Explain the pathophysiology of musculoskeletal disorders and their pharmacological treatment (Assessment items 3, 4);
6. Explain the pathophysiology of gastrointestinal disorders and the major drugs used to treat these conditions (Assessment items 3, 4);
7. Explain the pathophysiology of renal disorders and the major drugs used to treat these conditions (Assessment items 3, 4);
8. Describe the process of shock and its pharmacological treatment (Assessment items 3, 4);
9. Name the major groups of drugs of addiction/abuse and demonstrate an understanding of how they affect the body and addiction can be treated (Assessment items 3, 4);
10. Demonstrate an understanding of which drugs are used perioperatively including local and general anaesthetics, analgesics and antiemetics (Assessment items 3, 4, Laboratory classes, Quizzes, SDL);
11. Demonstrate an understanding of the causes of endocrine disorders and the importance of nutrition, exercise and drugs in treating these conditions (Assessment items 1, 2, Laboratory classes, Quizzes);
12. Explain the pathophysiology underlying the development of respiratory disorders and how they can be treated pharmacologically (Assessment items 3, 4);
13. Demonstrate an understanding of the cellular basis of cancer, metastases and the groups of drugs used to treat some forms of cancer (Assessment items 3, 4, SDL);
14. Demonstrate skills and knowledge required to perform laboratory experiments safely with appropriate equipment (Laboratory classes, Quizzes, Assessment items 1, 2, 3, 4).

TOPICS

| Description | Weighting (%) |
|----------------------------------------------------------------------------------------|---------------|
| 1. The role of neurotransmitters in health and disease | 7.50 |
| 2. Pathophysiology and pharmacological treatment of conditions affecting mental health | 17.50 |
| 2.1. Mental health breakdown | 7.5% |
| 2.2. Nervous system breakdown | 10% |
| 3. Anaesthesia | 5.00 |
| 4. Pain Relief | 5.00 |
| 5. Nutrition | 5.00 |
| 6. Addiction | 5.00 |
| 7. Inflammation | 2.50 |

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|-----|-----------------------------------------------------------------------------------------|-------|
| 8. | Cardiovascular disease and treatment by drugs, exercise, nutrition and fluid regulation | 12.50 |
| 9. | Musculoskeletal disease | 5.00 |
| 10. | Gastrointestinal disease | 5.00 |
| 11. | Endocrine disease | 7.50 |
| 12. | Respiratory disease | 5.00 |
| 13. | Oncology | 7.50 |
| 14. | Renal disease | 5.00 |
| 15. | Shock | 5.00 |

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).

2003, *Australian medicines handbook*, Australian Medicines Handbook Pty Ltd, Adelaide.

(viewed 25 July 2008, <http://amh.hcn.net.au/> This handbook is available online free through the Library using USQ connect username and password.)

Galbraith, A, Bullock, S & Manias, E 2006, *Fundamentals of Pharmacology: A text for nurses and allied health professionals*, 5th edn, Pearson Education, Australia.

Jenkins, G, Kemnitz, C & Tortora, G 2007, *Anatomy and physiology: From science to life*, John Wiley & Sons, New York.

(Pack includes textbook, DVD & WileyPlus Access card for online access.)

USQ Publication 2007, 'Instructional guide for science concepts for nurses' (Available: USQ StudyDesk).

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.

Bryant, B, Knights, K & Salerno, E 2003, *Pharmacology for health professionals*, Mosby, Sydney.

Marieb, EN & Hoehn, K 2007, *Human anatomy and physiology*, 7th edn, Benjamin/Cummings, Menlo Park, California.

(Students can either purchase the Human Anatomy and Physiology text or purchase the text book and Interactive Physiology CD-ROM. The latter two are shrink wrapped.)

McCance, K & Huether, S 2006, *Pathophysiology: the biological basis of disease in adults and children*, 5th edn, Elsevier Mosby, St Louis.

Rang, HP et al 2003, *Pharmacology*, 5th edn, Churchill Livingstone, Edinburgh.

STUDENT WORKLOAD REQUIREMENTS

| ACTIVITY | HOURS |
|---------------------------------|--------|
| Examinations | 2.00 |
| Laboratory or Practical Classes | 12.00 |
| Lectures | 26.00 |
| Private Study | 118.00 |
| Test | 1.00 |
| Tutorials | 6.00 |

ASSESSMENT DETAILS

| Description | Marks out of | Wtg (%) | Due date |
|--------------------------------|--------------|---------|-----------------------------|
| PTA OF 1HR RESTRICTED TEST M/C | 30.00 | 15.00 | 02 Mar 2009 (see note 1) |
| PTB OF 1HR RESTRICTED TEST S/A | 20.00 | 8.00 | 02 Mar 2009 |
| LABORATORY QUIZZES | 100.00 | 30.00 | 02 Mar 2009 (see note 2) |
| PT A OF 2HR REST EXAM (M/C) | 60.00 | 30.00 | END S1 (see note 3) |
| PT B OF 2HR REST EXAM (S/A) | 40.00 | 17.00 | END S1 |

NOTES

1. Examiner to advise date and details of the mid semester test (Part A & B).
2. Examiner to advise details of Quiz assessments
3. Examination dates will be available during the Semester. Please refer to the examination timetable when published (Part A & B).

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, laboratory classes and tutorials) 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. To maximize their chances of satisfying the objectives of the practical component of the course, students should attend and actively participate in the tutorial sessions in the course.
- 2 Requirements for students to complete each assessment item satisfactorily:
To complete the tests and examinations satisfactorily, students must obtain at least 50% of the marks available for that assessment. (Depending upon the requirements in Statement 4 below, students may not have to satisfactorily complete each assessment item to receive a passing grade in this course.)
- 3 Penalties for late submission of required work:

- Not applicable for this course as there are no assignments.
- 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:
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
 - 6 Examination information:
In a Restricted Examination and/or Test, candidates are allowed access to specific materials during the 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 non-electronic 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 in the second week of the semester following this course offering and the examiner will advise students via USQ Connect of the date, time and location of any such examination.
 - 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 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).
- 10 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