



The University of Southern Queensland

## Course specification

<b>Description: Pharmacology</b>						
Subject	Cat-nbr	Class	Term	Mode	Units	Campus
BIO	3313	40906	1, 2005	ONC	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS002
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	019907

### STAFFING

Examiner: Andrew Hoey  
Moderator: Michael Watson

### REQUISITES

Pre-requisite: BIO2203

### RATIONALE

The aim of this course is to provide students with an understanding of the principles of pharmacology. The ways that drugs work and affect the human body at the molecular, cellular, organ and organism level is important clinically as well as in research that seeks to develop new and better drugs to treat diseases.

### SYNOPSIS

This course builds on the foundations of human physiology obtained in the course BIO2203 (Physiology 1). It provides students with an understanding of how drugs act on the body in both health and disease. The processes of drug absorption, metabolism and excretion; methods and measurements in pharmacology; various drug classes and use of drugs in specific clinical cases or diseases will be presented.

### OBJECTIVES

On completion of this course students will be able to:

1. describe the pharmacokinetic processes of drug delivery, metabolism and excretion;
2. discuss the application of pharmacological principles to molecular biology;
3. describe the various classes of receptors and the transduction mechanisms they use to influence cellular function;
4. demonstrate an understanding of the range of methods and measurements used in pharmacology to determine the function of receptors and drugs that act on those receptors;
5. discuss the physiological effects of various neurotransmitters and drugs selective for their various receptor families;

6. discuss the use of specific drugs in altering reproductive physiology and for the treatment of certain disease states;
7. demonstrate skills and knowledge required to perform laboratory experiments safely with appropriate equipment.

## TOPICS

	Description	Weighting (%)
1.	Pharmacokinetics - drug delivery; drug metabolism; drug excretion.	12.00
2.	Receptor Pharmacology - structure and function; second messenger systems	8.00
3.	Methods and Measurements in Pharmacology - Quantitative effects of drugs; Drug discovery and development	12.00
4.	Drug classes acting at neurotransmitter receptors - Effects of selective drugs for neurotransmitter receptor subtypes including: Noradrenaline, Acetylcholine, Histamine, Nitric oxide, Gamma aminobutyric acid, Dopamine, Opioid peptides.	32.00
5.	Paracrine, endocrine and ion channel modulators	8.00
6.	Therapeutic drugs used in treatment of: Cancer, Asthma, Congestive heart failure, Depression	16.00
7.	Therapeutic drugs used to control - Levels of consciousness and pain; Reproduction.	12.00

## 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).

Rang, HP, Dale, MM, Ritter, JM & Moore, PK 2003, *Pharmacology*, 5th edn, Churchill Livingstone, Edinburgh, New York.

## 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.

Brody, TM, Larner, J & Minneman, KP 1998, *Human Pharmacology: Molecular to Clinical*, 3rd edn, Mosby Year Book, St Louis.

Bryant, B, Knights, K & Salerno, E 2003, *Pharmacology for Health Professionals*, Mosby, St Louis.

Galbraith, A, Bullock, S & Manias, E 2004, *Fundamentals of Pharmacology*, 4th edn, Pearson Education Australia, New South Wales.

Hardman, JG, Gilman, GA, Goodman, LS & Limbird, LE 2001, *Goodman & Gilman's: The Pharmacological Basis of Therapeutics*, 10th edn, McGraw Hill, New York.

Page, CP, Curtis, MJ, Sutter, MC, Walker, MJA & Hoffman, BB 1997, *Integrated Pharmacology*, Mosby, London.

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Examinations	3.00
Laboratory or Practical Classes	30.00
Lectures	26.00
Private Study	99.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg(%)	Due date
ESSAY - 2000 WORDS	50.00	15.00	01 Mar 2005 (see note 1)
ORAL PRESENTATION	50.00	15.00	01 Mar 2005 (see note 2)
3HR RESTRICTED EXAM	125.00	70.00	END S1 (see note 3)

### NOTES

1. Examiner to advise due date of essay.
2. Examiner to advise date for oral presentation
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. To maximize their chances of satisfying the objectives of the practical component of the course, students should attend and actively participate in the laboratory sessions in the course.
- 2 Requirements for students to complete each assessment item satisfactorily:  
To complete each of the assignments satisfactorily, students must obtain at least 50% of the marks available for each assignment. To complete the examination satisfactorily, students must obtain at least 50% of the marks available for the examination.
- 3 Penalties for late submission of required work:  
If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.
- 4 Requirements for student to be awarded a passing grade in the course:

To be assured of a passing grade, students must demonstrate, via the summative assessment items, that they have achieved the required minimum standards in relation to the objectives of the course by: (i) satisfactorily completing the examination and assignments; and (ii) obtaining at least 50% of the total weighted marks available for all summative assessment items. 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. It is expected that such students will have gained at least 45 % of the total marks available for all summative assessment items.

- 5 Method used to combine assessment results to attain final grade:  
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.
- 6 Examination information:  
In a Restricted Examination, 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; English translation dictionaries (but not technical dictionaries); Translation dictionary. With the Examiner's approval, candidates may, take an appropriate non- electronic translation dictionary into the examination. This will be subject to perusal and, if it is found to contain annotations or markings that could give the candidate an unfair advantage, it may be removed from the candidate's possession until the appropriate disciplinary action is completed. In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into the examination.
- 7 Examination period when Deferred/Supplementary examinations will be held:  
Any Deferred or Supplementary examinations for this course will be held during the examination period in Semester 3 of the current academic year.
- 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 must retain a copy of each item submitted for assessment, this must be produced within 5 days if required by the Examiner.
- 10 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.
- 11 Students who obtain an overall passing mark, but who do not perform satisfactorily in an examination, may, at the discretion of the examiner, be granted a supplementary examination. Students will be granted a deferred examination only if they perform satisfactorily in all other assessment items
- 12 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.