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Faculty of Medicine
School of Medical Sciences

PHAR3306

PHARMACOLOGY for OPTOMETRY

COURSE OUTLINE

TERM 2, 2020

CRICOS Provider Code 00098G

TABLE OF CONTENTS

Please read this manual/outline in conjunction with the following pages on the School of Medical Sciences website:

- Advice for Students
- Learning Resources

(or see "STUDENTS" tab at medicalsciences.med.unsw.edu.au)

PHAR3306 Course Information

UNIT OF CREDIT (UOC)

Pharmacology for Optometry is a 3rd year Science Course with 6 Units of Credit (UOC). This course builds on the knowledge you have gained in VISN2111 Ocular Anatomy and Physiology, PHSL2101 Physiology 1A and PHSL2201 Physiology 1B, which are prerequisite courses for PHAR3306.

OBJECTIVES OF THE COURSE

The aim of the course is to provide vision science and clinical optometry students with a strong knowledge base in pharmacology and therapeutics that will benefit them in their future career. This will be achieved by providing the essential knowledge of the basic principles of pharmacology with an emphasis on drug action from the molecular and cellular levels to tissue, organ and whole organism levels. The course will provide an understanding of the principles of drug action (pharmacodynamics) in terms of drug-receptor interaction, receptor theory and dose-response relationships. An introduction to receptor-mediated signal transduction, membrane receptors and autonomic pharmacology will be covered. The handling of drugs by the body through the processes of absorption, distribution, metabolism and excretion (pharmacokinetics) will be covered in some detail along with drug analysis and the adverse effects of drugs. In addition, the pharmacology of different drug classes that target the major organ systems will be explored.

COURSE LEARNING OUTCOMES

By the end of the course students should be able to:

1. describe basic pharmacological concepts underlying dose response relationships, sites of absorption, distribution and excretion, as well as chemical and biological factors affecting disposition and metabolism of drugs
2. explain drug activity through interactions with target molecules including receptors, transporters and enzymes.
3. describe the specific pharmacology of common drug classes including their mechanisms of action, indications, clinical uses, contraindications and major side effects.
4. demonstrate an understanding of the effects of drug toxicity and polypharmacy on the human body.
5. explain complex pharmacological information in formats appropriate to both clinical peers and the general public.

COURSE CO-ORDINATOR AND LECTURERS

Course Coordinators:

Dr Johnson Liu
Rm 261 Wallace Wurth Building; Ph: 9385 9086; Email: johnson.liu@unsw.edu.au

Mr Martin Le Nedelec
Rm 261 Wallace Wurth Building; Email: m.lenedelec@unsw.edu.au

Students wishing to see the course coordinators should make an appointment *via* email as our offices are not readily accessible. We will organize to meet you in a convenient location elsewhere in the building.

Lecturers in this course:

Dr T. Binder	w.binder@unsw.edu.au
Dr J. Carland	j.carland@unsw.edu.au
Dr A. Finch	a.finch@unsw.edu.au
Dr R. Grant	r.grant@unsw.edu.au
Mr M. Le Nedelec	m.lenedelec@unsw.edu.au
A/Prof L. Liu	Lu.Liu@unsw.edu.au
Dr J. Liu	johnson.liu@unsw.edu.au
Prof M. Morris	m.morris@unsw.edu.au
Dr M. Perry	m.d.perry@unsw.edu.au

COURSE STRUCTURE AND TEACHING STRATEGIES

Learning activities occur on the following days and times:

- Lectures: Available online prior to the week scheduled. Monday 2-3 pm, Wednesday 4-5 pm and Wednesday 5-6 pm; Weeks 1-5, 7-10.
- Tutorials: Friday 1-2 pm (Group A) or 2-3 pm (Group B) or 3-4 pm (Group C) or 4-5 pm (Group D), in Weeks 1-5, 7-10; Online via Blackboard Collaborate Ultra (link to access from Moodle).
- Practicals/Problem-based learning (PBL) sessions: Thursday 3-6 pm for both Group 1 and Group 2. Group 1 in Weeks 1, 4, 7 and 9; Group 2 in Weeks3, 5, 8 and 10. Online via Blackboard Collaborate Ultra (link to access from Moodle).
- Mid-session exam: Week 5 (covers Weeks 1-4); Monday 29th June 2020, 2-3 pm (Sydney Time); One-hour online exam.

Students are reminded that UNSW recommends that a 6 units-of-credit course should involve about 150 hours of study and learning activities. The formal learning activities are approximately 53 hours throughout the term and students are expected (and strongly recommended) to do at least the same number of hours of additional study.

Lectures will provide you with the concepts and theory essential for an understanding of Pharmacology for Optometry. To assist in the development of analytical skills, practical classes, PBLs and tutorials will be held. These classes allow students to engage in a more interactive form of learning than is possible in the lectures.

APPROACH TO LEARNING AND TEACHING

The learning and teaching philosophy underpinning this course aims to create an environment which stimulates and supports student learning. This is achieved through student-centred learning by the use of active learning, student collaboration and self-directed online activities. The learning activities in this course online materials and active learning in addition to collaborative activities in tutorials, PBLs and practical classes. Students are encouraged to

also undertake self-directed learning via other resources such as textbooks, literature references and web-based sources as well as the provided online tutorials.

TEXTBOOKS AND OTHER RESOURCES

These resources will take the form of textbooks and web-based resources. If available, links to the electronic form of these resources will be put on the course Moodle page.

- Basic & Clinical Pharmacology. 14th Edition (2018); Katzung BG (Editor); New York: McGraw-Hill. (Full e-book available via UNSW Library).
- Goodman and Gilman's The Pharmacological Basis of Therapeutics. 13th Edition (2018); Editors: Brunton LL, Hilal-Dandan R, Knollmann BC; New York: McGraw-Hill Medical. (Full e-book available via UNSW Library).

Copies of these textbooks are available in hardcopy and as e-books in the library. See also https://medicalsciences.med.unsw.edu.au/students/undergraduate/learning-resources

National Prescribing Service (NPS) is a member-based organisation providing accurate, balanced, evidence-based information and services to health professionals and the community on Quality Use of Medicines (QUM). You are strongly encouraged to use this service: http://www.nps.org.au/

ASSESSMENT PROCEDURES

• Online Quiz (4 online quizzes; 2.5% each)	**10%**
• Midsession examination (1 hour duration)	**25%**
• Group assignment	**15%**
• End of session examination (2 hours duration)	**50%**

A penalty will apply for late submissions of assessment tasks (10% per day).

Online quiz

There are 4 online quizzes will be held in Week 2, 4, 8, 10. You will attempt the quizzes at the set time. Feedback will be given immediately afterwards. Each quiz will be based on the materials covered so far in the course, including lectures, practical classes, PBLs and tutorials.

Examinations

The *midsession examination* will be held in a lecture slot at **2 pm on Monday 29th of June** (Please refer to the course timetable on Moodle). This exam will give you feedback on how you are succeeding in the course.

The *end of session examination* will be held during the official examination period.

The exam questions will be based on the material covered in the lectures, practical classes, PBLs and tutorials across the whole course.

Final exam period for Term 2, 2020 is 14 August to 27 August 2020.

Supplementary exam period for Term 2, 2020 is 7 September to 11 September 2020.

Group Assignment

Student will work in teams of five to create a product (video, webpage, pamphlet etc) to inform the public about a pharmacological topic. All members of the group are required to contribute to this task. You need to research the topic and search for relevant information based on the latest literature. The product will be graded on scientific content, structure, design, critical analysis and presentation. The final product must be submitted via Moodle by the **due date of Monday 20 July (10am).** Details about this task (group allocation, topic titles, marking criteria, etc) will be posted on Moodle. An information session about this task will be held during a tutorial slot.

COURSE EVALUATION AND DEVELOPMENT

Each year feedback is sought from students about the course and continual improvements are made based on this feedback. The myExperience online survey is the way in which student feedback is evaluated and is the vehicle by which significant changes to the course will be communicated to subsequent cohorts of students.

GENERAL INFORMATION

The Department of Pharmacology is part of the School of Medical Sciences and is within the Faculty of Medicine. It is located in the Wallace Wurth building. General inquiries can be made through a student portal (http://unsw.to/webforms).

Professor Margaret Morris is Head of Department and appointments to meet with her may be made via email (m.morris@unsw.edu.au).

Postgraduate degrees
The Department of Pharmacology offers students the opportunity to enter into the following graduate programs:

Course Work Masters: Master of Pharmaceutical Medicine. For more information contact A/Prof Orin Chisholm (o.chisholm@unsw.edu.au)

Research Masters and Doctorate (***Ph.D):*** In Pharmacology. For more information contact the post-graduate co-ordinators A/Prof Pascal Carrive (p.carrive@unsw.edu.au) and Dr Nicole Jones (n.jones@unsw.edu.au).

Enrolment and administrative help
The Education Support Team are available to help with problems with enrolment and scheduling and should be the first point of contact for administrative problems. For enrolment issues please contact SOMS student administrators through a student portal (http://unsw.to/webforms).

Official Communication

All communicate will be via your official UNSW email please see Advice for Student-Official Communication for more details.

Attendance Requirements

For details on the Policy on Class Attendance and Absence see Advice for Students and the Policy on Class Attendance and Absence.

Special Consideration

Please see UNSW-Special Consideration and Student Advice-Special Consideration

If you unavoidably miss the progress exam in PHAR3306, you must lodge an online application via myUNSW for special consideration. If your request for consideration is granted an alternative assessment will be organised which may take the form of a supplementary exam or increased weighting of the final exam. Students are required to make an on-line Special Consideration for **ALL** assessment tasks – this is a change on previous regulations.

Student Support Services

Details of the available student support services can be found at Student Advice-Student support services.

Student support service unit, teaching technology or student system regarding online learning:

- Transitioning to Online Learning https://www.covid19studyonline.unsw.edu.au/
- Guide to Online Study https://student.unsw.edu.au/online-study
- UNSW Student Life Online https://student.unsw.edu.au/help#main-content

Equitable Learning Services: Details available at https://student.unsw.edu.au/els

Appeal Procedures

Details can be found at Student-Advice-Reviews and Appeals

Academic Integrity and Plagiarism

The UNSW Student Code outlines the standard of conduct expected of students with respect to their academic integrity and plagiarism.
More details of what constitutes plagiarism can be found here

APPENDIX: List of Schedule 2, 3 and 4 medicines approved by the Optometry Board of Australia for administration by optometrists holding general registration

Under section 94 of the National Law, the Board may endorse the registration of eligible optometrists as qualified to obtain, possess, administer, prescribe or supply the scheduled medicines used in the treatment of conditions of the eye, included in the list below.

Table C1 lists the Schedule 4 medicines that have been approved for use by optometrists whose registration has been endorsed by the Board. This is a duplicate of the list published in the Board's Endorsement for scheduled medicines registration standard.

For an optometrist to possess, prescribe, supply or use these Schedule 4 medicines in a particular jurisdiction, the authorisation must be provided for by enactment of legislation in that jurisdiction. Registered optometrists should be familiar and comply with the current requirements in the jurisdictions in which they practise. The Board will publish on its website a list of authorities that apply in each state and territory.

Board-approved list of Schedule 2, 3 and 4 medicines that optometrists with a scheduled medicines endorsement are qualified to obtain, possess, administer, prescribe or supply for topical use (reviewed in 2020)

Schedule 4 Prescription Only Medicine

Anti-infectives	Anti-inflammatories	Decongestants/ anti-allergics	Anti-glaucomas	Miotics, mydriatics and cycloplegics	Local anaesthetics
Aciclovir Azithromycin Bacitracin Cephazolin Ciprofloxacin Framycetin Gentamicin Gramicidin Neomycin Ofloxacin Polymyxin Tetracycline Tobramycin	Cyclosporin Dexamethasone Diclofenac Fluorometholone Flurbiprofen Hydrocortisone Ketorolac Lotepredol Prednisolone	Olopatadine	Apraclonidine Betaxolol Bimatoprost Brimonidine Brinzolamide Dorzolamide Latanoprost Pilocarpine Tafluprost Timolol Travoprost	Atropine Cyclopentolate Homatropine Pilocarpine Phenylephrine Tropicamide	Amethocaine Lignocaine Oxybuprocaine Proxymetacaine

Schedule 3 Pharmacist Only Medicine

Anti-infectives
Chloramphenicol

Schedule 2 Pharmacy Medicine

Anti-infectives	Anti-inflammatories	Decongestants/ anti-allergics	Miotics, mydriatics and cycloplegics
Dibromopropamidine Propamidine	Antazoline Azelastine Ketotifen Levocabastine	Lodoxamide Naphazoline Pheniramine Sodium Cromoglycate	Phenylephrine <1%