School of Chemistry

CHEM350: Principles of Pharmacology

Subject Outline
Autumn, 2016
On-Campus
Wollongong

Subject Information
Credit Points: 8
Pre-requisite(s): (CHEM212 or BIOL214) and BMS202 or SHS211/MEDI211. CHEM350 is compulsory for BMedChem(Hons) candidates. Other students should contact the co-ordinator to confirm enrolment
Co-requisite(s): Nil
Restrictions: Nil
Contact Hours: 39hr Lecture&Tutorial, 36hr Practical/activities

Subject Contacts
Subject Coordinator/Lecturer

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr Christopher Hyland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Building 18 Room 126</td>
</tr>
<tr>
<td>Telephone</td>
<td>61 2 4221 4953</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:chris_hyland@uow.edu.au">chris_hyland@uow.edu.au</a></td>
</tr>
<tr>
<td>Consultation mode and times</td>
<td>Email for appointment</td>
</tr>
</tbody>
</table>

Student Support and Advice
For general enquiries please contact StudentHub 41:

Location: 41.138B
Telephone: 61 2 4221 3492
Email: smah-students@uow.edu.au
Student Consultation and Communication

University staff receive many emails each day. In order to enable them to respond to your emails appropriately and in a timely fashion, students are asked to observe basic requirements of professional communication:

**Consider what the communication is about**
- Is your question addressed elsewhere (e.g. in the subject outline or, on the eLearning site)?
- Is it something that is better discussed in person or by telephone? This may be the case if your query requires a lengthy response or a dialogue in order to address. If so, see consultation times above and/or schedule an appointment.
- Are you addressing your request to the most appropriate person?

**Specific email subject title to enable easy identification of issue**
- Identify the subject code of the subject you are enquiring about (as staff may be involved in more than one subject) put this in the email subject heading. Add a brief, specific query reference after the subject code where appropriate.

**Professional courtesy**
- Address the staff member appropriately by name (and formal title if you do not yet know them).
- Use full words (avoid ‘text-speak’ abbreviations), correct grammar and correct spelling.
- Be respectful and courteous.
- Allow 3 – 4 working days for a response before following up. If the matter is legitimately urgent, you may wish to try telephoning the staff member (and leaving a voicemail message if necessary) or inquiring at the School Office.
- Please ensure that you include your full name and student number and identify your practical class or tutorial group in your email so that staff know who they are communicating with and can follow-up personally where appropriate.
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Section A: General Information

Subject Learning Outcomes
On successful completion of this subject, students will be able to:

1. have an understanding of the general nature of pharmacology, basic qualitative and quantitative concepts in molecular pharmacology including receptors, agonists, antagonists, dose-response curves, efficacy and affinity, and desensitisation.

2. have an appreciation of the importance of pharmacokinetics in drug action, together with knowledge of drug effects, including clinical aspects, on the sympathetic and parasympathetic nervous systems, and on the cardiovascular system, plus drugs and the kidney, immunological modifiers, serotonin, analgesics and anaesthetics, respiratory drugs, alcohol and drug abuse, cancer therapeutics and sex hormones.

Subject Description
This subject is designed to introduce students to the basic concepts of pharmacology. Topics covered will include receptors and molecular basis of drug action, drug disposition and bioavailability, kinetics of drug action, factors affecting drug activity and pharmacology of multiple classes of drugs.

eLearning Space
This subject has materials and activities available via eLearning. To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (student online services). Log on to SOLS and then click on the eLearning link in the menu column. For information regarding the eLearning spaces please use the following link: http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf

Lecture, Tutorial, Laboratory Times
All timetable information is subject to variation. Check latest timetabling information on the 'Current Student' webpage on UOW website or log into SOLS to view your personal timetable prior to attending classes. http://www.uow.edu.au/student/index.html

Timetable information can be accessed from http://www.uow.edu.au/student/timetables/info/index.html

Key University Dates can be accessed from http://www.uow.edu.au/student/dates/index.html

Readings, References and Materials

Textbooks
The following text(s) will need to be purchased by students enrolled in this class.


Prescribed Readings (includes eReadings)
Nil

Materials
Laboratory Coats
Safety Glasses
Recommended Readings
Nil

Recommended readings are not intended as an exhaustive list, students should use the Library catalogue and databases to locate additional resources.

Recent Changes to this Subject
Nil

Ethical Objection to the Use of Animal and Animal Products
In order to achieve specific learning objectives, the use of animals, animal tissues, and or animal-derived products (such as sera) is inherent and unavoidable. Students with conscientious objections to this use should not enrol in this subject.

Students who intend to avoid a particular learning activity on the basis of conscientious objection should notify the subject coordinator in writing as soon as possible and **not later than the end of Week 1 of the session**. Students who do not participate in a particular learning activity are required to complete an alternative exercise (a CD-ROM is available) or attend the practical and "observe". The material involved is examinable and the prac must be written up and completed in your workbook. For further information, refer to [http://www.uow.edu.au/about/policy/UOW058708.html](http://www.uow.edu.au/about/policy/UOW058708.html)

Laboratory Safety Guidelines
The rules below are general rules that are required in laboratories.

- Before commencing your project you are to ensure that you understand specific procedures for the laboratory in which you work.
- You will need to fill out a risk assessment form before commencing any experiments (confer with your laboratory supervisor).
- Never use any equipment or attempt any experiment without checking the safety implications with your laboratory supervisor or experienced delegated laboratory worker.
- Undergraduate students are not permitted to work after hours unless there is appropriate approval and supervision.

List of Topics Covered
The following are examples of the topics to be covered in this course. This is not an exhaustive list and will be subject to change.

Lecture Topics

- Introduction to Pharmacology – Drugs
- Receptors and Pharmacological Responses
- Molecular Pharmacology – Agonists/Antagonists/Dose Response Curves
- Cardiovascular Pharmacology
- Pharmacokinetics
- Renal Pharmacology
- Drug Effects in the Autonomic Sympathetic Nervous System
- Drug Effects in the Autonomic Parasympathetic Nervous System
• Anaesthetics and Analgesics

• Antimicrobial Agents

• Management of Diabetes

• Respiratory Drugs

• Cancer Therapeutics

• Alcohol and Drug Abuse

A Timetable of Topics will be available from the eLearning site in week 1 of session.
Section B: Assessment

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Return/Feedback Due Dates</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Computer Laboratory Report</td>
<td>TBA</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Quiz</td>
<td>TBA</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Scientific Review and Peer Review</td>
<td>TBA</td>
<td>Within 21 days of due date</td>
<td>15%</td>
</tr>
<tr>
<td>Assessment 4</td>
<td>Presentation</td>
<td>TBA</td>
<td>Within 21 days of due date</td>
<td>5%</td>
</tr>
<tr>
<td>Assessment 5</td>
<td>Wet Lab Report</td>
<td>TBA</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 6</td>
<td>Exam</td>
<td>UOW Exam Week</td>
<td>Release of results</td>
<td>50%</td>
</tr>
</tbody>
</table>

Total Marks 100%

Details of Assessment Tasks

Assessment tasks will be marked using explicit criteria that will be provided to students prior to submission.

Assessment 1

Computer Laboratory Report
Due date TBA
Weighting 10%
Submission Submission details to be advised.
Type of Collaboration Individual Assessment
Length 8-10 A4 typed pages (including tables, figs and references).
Details You will prepare a written report on one of the three computer laboratories carried out in weeks 3, 4 and 6. You will be informed of which lab to write a report on during the course.
Style and format Written Report
Subject Learning Outcomes 1, 2
Marking Criteria The marking criteria will be made available on your eLearning site by week 1 of session.

Assessment 2

Quiz
Due date TBA
Weighting 10%
Submission Exam papers and answers must be submitted at the conclusion of the exam.
Type of Collaboration Individual Assessment
Length 1 hour
Details You will be tested on the topics covered in lectures preceding the quiz.
Style and format In class test
Subject Learning Outcomes 1, 2
Marking Criteria The marking criteria will be made available on your eLearning site by week 1 of session.
### Assessment 3

<table>
<thead>
<tr>
<th>Due date</th>
<th>TBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>15% (12.5% for Scientific Review and 2.5% for peer review)</td>
</tr>
<tr>
<td>Submission</td>
<td>Submit an electronic copy of your final assessment Submission of peer review to be advised.</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment (with a collaborative element in peer review)</td>
</tr>
<tr>
<td>Length</td>
<td>The scientific review should be about 8-10 A4 typed pages (page count excludes references, 1.5 line spacing; 12 point font, 2 cm margins all round). Details of the peer-review will be provided closer to the assessment task.</td>
</tr>
<tr>
<td>Details</td>
<td>You will prepare a literature report selected from a list of current topics in pharmacology. As part of this exercise you will also read and provide feedback on another student’s review and also receive feedback on your report. Further details will be provided in the subject manual.</td>
</tr>
<tr>
<td>Style and format</td>
<td>Written Report</td>
</tr>
<tr>
<td>Subject Learning Outcomes</td>
<td>1, 2</td>
</tr>
<tr>
<td>Marking Criteria</td>
<td>The marking criteria will be made available on your eLearning site by week 1 of session.</td>
</tr>
</tbody>
</table>

### Assessment 4

<table>
<thead>
<tr>
<th>Due date</th>
<th>TBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>5%</td>
</tr>
<tr>
<td>Submission</td>
<td>Submit an electronic copy of your assessment via Flash key on the day of the presentation</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>Presentation should be 5 minutes long.</td>
</tr>
<tr>
<td>Details</td>
<td>You will prepare a short digital media presentation outlining the topic of your literature review to a non-specialist audience. These will be played during the week 10 lab/workshop session.</td>
</tr>
<tr>
<td>Style and format</td>
<td>Presentation (Digital Media Presentation)</td>
</tr>
<tr>
<td>Subject Learning Outcomes</td>
<td>1, 2</td>
</tr>
<tr>
<td>Marking Criteria</td>
<td>The marking criteria will be made available on your eLearning site by week 1 of session.</td>
</tr>
</tbody>
</table>

### Assessment 5

<table>
<thead>
<tr>
<th>Due date</th>
<th>TBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>10%</td>
</tr>
<tr>
<td>Submission</td>
<td>Submit a hardcopy of your assessment to the StudentHub41</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>8-10 A4 typed pages (including tables, figs and references).</td>
</tr>
<tr>
<td>Details</td>
<td>You will prepare a written report on the metabolism wet-lab.</td>
</tr>
<tr>
<td>Style and format</td>
<td>Written Report</td>
</tr>
<tr>
<td>Subject Learning Outcomes</td>
<td>1, 2</td>
</tr>
<tr>
<td>Marking Criteria</td>
<td>The marking criteria will be made available on your eLearning site by week 1 of session.</td>
</tr>
</tbody>
</table>

### Assessment 6

<table>
<thead>
<tr>
<th>Due date</th>
<th>During Exam Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>50%</td>
</tr>
<tr>
<td>Submission</td>
<td>Exam papers and answers must be submitted at the conclusion of the exam.</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
</tbody>
</table>
### Minimum Requirements for a Pass in this Subject

To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%.

The minimum performance requirements for this subject are:

- Obtain a final exam mark of at least 45%
- Satisfactorily complete at least 85% of laboratories/activities (role will be taken) and associated assessment tasks.

### Minimum Student Attendance and Participation

It is expected that students will allocate 16 hours per week to this subject, including any required class attendance, completion of prescribed readings and assessment tasks.

Student attendance at laboratories and activity sessions is compulsory and students must attend at least 100% of classes. Absences will require the submission of an application for Academic Consideration via SOLS and the presentation of suitable documentation, for example a Medical Certificate, to Student Central as soon as practical. For further details about applying for academic consideration visit the Student Central webpage:


### Scaling

Scaling may occur in this subject at the end of session by the Unit Assessment Committee and/or Faculty Assessment Committee (FAC). Marks will only be scaled to ensure fairness/parity of marking across groups of students. Scaling will not affect any individual student's rank order within their cohort. For more information refer to Assessment Guidelines – Scaling:


### Late Submission

Late submission of an assessment task without an approved extension of the deadline is not acceptable. If you are unable to submit an assessment due to extenuating circumstances (e.g. medical grounds or compassionate grounds), you can make an application of academic consideration. Not all circumstances qualify for academic consideration. For further details about applying for academic consideration visit the Student Central webpage:


### Late Submission Penalty

Late submission of an assessment task without an approved extension of the deadline is not acceptable. Marks will be deducted for late submission at the rate of 5% of the total possible marks for that particular assessment task per day. This means that if a piece of work is marked out of 100, then the late penalty will be 5 marks per day (5% of 100 possible marks per day). The formula for calculating the late penalty is: the total possible marks x 0.05 x number of days late. For the purposes of this policy a weekend (Saturday and Sunday) will be regarded as two days.
For example:

- Student A submits an assignment which is marked out of 100. The assignment is submitted 7 days late. This means that a late penalty of 35 marks will apply \((100 \times 0.05 \times 7)\). The assignment is marked as per normal out of 100 and is given a mark of 85/100, and then the late penalty is applied. The result is that the student receives a final mark of 50/100 for the assignment \((85 \text{ (original mark)} - 35 \text{ marks (late penalty)} = 50/100 \text{ (final mark)})\).

- Student B submits a report which is marked out of 20. The report is submitted three days late. This means that a late penalty of 3 marks will apply \((20 \times 0.05 \times 3)\). The report is marked as per normal out of 20 and is given a mark of 17/20, and then the late penalty is applied. The result is that the student receives a final mark of 14/20 for the report \((17 \text{ (original mark)} - 3 \text{ marks (late penalty)} = 14/20 \text{ (final mark)})\).

No marks will be awarded for work submitted either after the assessment has been returned to the students or more than two weeks after the due date, whichever is the sooner. This does not apply to situations where a particular assessment task is undertaken by students at different times throughout the session, but where the assessment is based on experiments or case studies specific to a student. In this case no marks will be awarded for work submitted more than two weeks after the due date.

Notwithstanding this, students must complete all assessment tasks to a satisfactory standard and submit them, regardless of lateness or loss of marks, where submission is a condition of satisfactorily completing the subject.

**Supplementary Assessments**

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are otherwise identified as meriting an offer of a supplementary assessment. The precise form of supplementary assessment will be determined at the time the offer of a supplementary assessment is made. Please note that the School of Chemistry reserves the right to conduct oral exams for students requesting deferred final exams - this also applies to the quiz in week 7.

Students can log on to SOLS and click on the link titled "Supplementary Assessment" to view any applicable offers or use the following link:


**System of Referencing Used for Written Work**

The American Chemical Society referencing style as found in the Journal of Medicinal Chemistry is used in CHEM350 – Failure to document adequately and fully is to ignore scholarly rules – and run the risk of plagiarism.

Please consult the UOW library website for further information:


**Use of Internet Sources**

Students are able to use the Internet to access the most current information on relevant topics and information. Internet sources should only be used after careful critical analysis of the currency of the information, the role and standing of the sponsoring institution, reputation and credentials of the author, the clarity of the information and the extent to which the information can be supported or ratified by other authoritative sources.
Plagiarism

The full policy on Academic Integrity and Plagiarism is found in the Policy Directory on the UOW website.

"The University's Academic Integrity and Plagiarism Policy, Faculty Handbooks and subject guides clearly set out the University’s expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as ‘resources’), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University."

Submission of Assessments

Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt/evidence acknowledging assessment submission. Students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assignments in the event that re-submission is required.

WET LAB REPORT SUBMISSION ONLY

Assessments submitted at the StudentHub 41 must have a SATS (Student Assessment Tracking System) coversheet attached to the front of the assessment. Instructions for generating a coversheet can be found on: http://smah.uow.edu.au/current-students/UOW151958.html

For an assessment to be successfully submitted at the Student Centre, please note the following:

- The coversheet must be signed and dated.
- The assessment must have the correct coversheet i.e. the correct subject code and tutorial group (if applicable).
- A legible barcode with all numbers and digits below e.g. UOW20121007656.
- Assessments must be submitted by 4:00pm on the due date.

If an assessment is submitted to the Student Centre without any of the above we will contact you through your student email address and advise that you need to return to the Student Centre with the correct coversheet. Your assessment won’t be considered submitted until the correct coversheet is attached. This might mean that your assessment is submitted late.

An email receipt will be issued on the same day as submission of assessments and students are required to retain this receipt until they have received the final mark for that assessment task. It is your responsibility to contact the Student Centre if you have not received this receipt by the following business day. The receipt is proof of submission of assessments and students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assessments in the event that re-submission is required. SATS Group Assessment Coversheets are printed by the lead member of the group and subsequent names can be added in the SATS student interface before printing. All members of the group must sign the printed SATS Group Assessment Coversheet before submitting the assessment.

Note that if assessments are submitted in the after-hours slot at the Student Centre it will be scanned into SATS the following business day. Assessments submitted via post will be scanned into SATS on the day of delivery. Any assessments received without the correct assessment coversheet attached will not be accepted by SATS. It is the student’s responsibility to ensure that the correct assessment coversheet is submitted with their assessment.
Students may post their assessments to: the StudentHub 41 (41.152), University of Wollongong, Wollongong, NSW 2522.

Assessments will be considered submitted on the date of postage. It is the student’s responsibility to ensure they have evidence of their submission date if it arrives at the office after due date.

**Assessment Return**

Students will be notified when they are able to view their marked assessment. In accordance with University Policy marked assignments will usually only be held for 21 days after the declaration of marks for that assignment.

**WET LAB REPORT ASSESSMENT RETURN ONLY**

Students will be notified by email when marked SATS assessments are available for collection from the Student Centre during business hours. Students will be required to present their student card when collecting marked assessments. Subject Coordinators/ Tutors may opt to hand marked assessments back to students in class or during their consultation hours. In accordance with University Policy marked assessments will usually only be held for 21 days after the declaration of marks for that assessment.

- The StudentHub 41 (41.152)
  Business Hours & Location:
  Monday – Friday
  9:00 am to 4:30 pm
Section C: General Advice

Students should refer to the Faculty of Science, Medicine and Health website for information on policies, learning and support services and other general advice.

University Policies

Students should be familiar with the following University policies:

a. Code of Practice – Teaching and Assessment

b. Code of Practice – Research, where relevant

c. Code of Practice – Honours, where relevant

d. Student Charter

e. Code of Practice – Student Professional Experience, where relevant

f. Academic Integrity and Plagiarism Policy

g. Student Academic Consideration Policy

h. Course Progress Policy

i. Graduate Qualities Policy

j. Academic Complaints Policy (Coursework and Honours Students)

k. Policy and Guidelines on Non-Discriminatory Language Practice and Presentation

l. Workplace Health and Safety, where relevant

m. Intellectual Property Policy

n. IP Student Assessment of Intellectual Property Policy, where relevant

o. Policy on Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects, where relevant

p. Human Research Ethics Guidelines, where relevant

q. Animal Research Guidelines, where relevant
r. Student Conduct Rules and accompanying Procedures or Research Misconduct Policy for research students

**Student Support Services and Facilities**

Students can access information on student support services and facilities at the following link. This includes information on “Academic Support”, “Starting at University, “Help at University” as well as information and support on “Career’s and Jobs”.  http://www.uow.edu.au/student/services/index.html

**Student Etiquette**

Guidelines on the use of email to contact teaching staff, mobile phone use in class and information on the university guide to eLearning ‘Netiquette’ can be found at  http://www.uow.edu.au/student/elearning/netiquette/index.html

**Version Control Table**

<table>
<thead>
<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20151113</td>
<td>Dr Christopher Hyland –</td>
<td>Mrs Sonia Losinno – ADE</td>
<td>Final CHEM350 Autumn 2016 Subject Outline</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject Coordinator</td>
<td>Nominee</td>
<td></td>
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</tbody>
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