



RUTGERS
UNIVERSITY | CAMDEN

50:160:411 Introduction to Pharmacology (3)
Syllabus

Staff information

Dr Michelle Carlin

Class times:

Class location:

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Wednesday 18.00-20.50 (6-8pm)

Armitage Hall room 121

Course Description

This course provides a theoretical foundation of pharmacology including pharmacokinetics and pharmacodynamics. Topics include absorption, distribution, pharmacological effects, metabolism and excretion of foreign chemicals with an emphasis on drugs of abuse and pharmaceutical drugs.

Learning Objectives

By the end of this module, you should be able to:

- Apply pharmacological principles to evaluation of case related data
- Understand and defend your thoughts in relation to pharmacodynamics and pharmacokinetics principles, with drug specific examples
- Develop a group lecture presentation on the pharmacology of provided drugs/drug groups

What you will be expected to achieve

- **Knowledge & understanding**
You will be expected to demonstrate a broad knowledge of current and emerging techniques in pharmacology and pharmacokinetics
- **Intellectual/professional skills & abilities**
Show the ability to explain and critically appraise results and outcomes of biological toxicologically relevant data
- **Personal values & attributes**
Demonstrate an awareness of the professional, ethical and legal implications pertaining to interpretation of pharmacology/pharmacokinetics data and subsequent interpretation

Explanation

One of the main roles of a toxicologist/forensic toxicologist is to carry out analyses and provide interpretation on analytical data. You are responsible for providing a report, a presentation in court and/or discussion with lay people and peers on your findings. Communication skills are key, especially when delivering evidence in court. You are the person who will help the court and jury understand complex scientific principles in an understandable way or explain to lay people how drugs work and what they do to the body. The way that the assessment has been designed is to provide you with the opportunity to draw on what you have learned in class, to deliver your findings on particular drugs/drug classes in a lecture format and to carry out evaluation of toxicology data and carry out an interpretation that could be used in a court report or explanation for lay people.

Timetable

Week number	Date of class (Wednesday, 6-8.50 pm)	Topic
1.	17 th January	Introduction
2.	24 th January	Pharmacodynamics
3.	31 st January	Drug targets & mechanisms of action
4.	7 th February	Drug design & structure activity relationship
5.	14 th February (ASSESSMENT - 1)	Online quiz
6.	21 st February	Pharmacokinetics
7.	28 th February	Compartment model pharmacokinetics
8.	6 th March	Biotransformation
13 th March Spring break – no class		
9.	20 th March	Data evaluation
10.	27 th March	Pharmacology of opioids (Dr Carlin)
11.	3 rd April (ASSESSMENT - 2)	Group 1 – Pharmacology of benzodiazepines Pharmacology of NPS (Group 2) Pharmacology of NSAIDS (Group 3)
12.	10 th April (ASSESSMENT - 2)	Group 4 – Pharmacology of Amphetamine Type Stimulants (ATS) Pharmacology of cannabinoids (Group 5)
13.	17 th April	Case evaluation
14.	24 th April	Pharmacology of legitimate drugs

Assessment

The assessment for this course will take the following format:

- Online quiz (20% of course grade)
- Group presentation that will take the form of a lecture, explaining the pharmacology of one type

- of drug class. This will be further explained in class and in the assessment brief (40% of course grade). These assessments will take place from 27th March – 10th April
- Case evaluation. You will be provided with information relating to a case where a person had had a drug or drugs administered to them. You will carry out research, outside of class time and write a report explaining what you think the course the drugs would take (explaining pharmacodynamics/pharmacokinetics) and what overall effects you might see in the individual (40% of course grade). This will be due 1st May

Grading

Course grade	%
A	70 - 100
B+	65 - 69
B	60 - 64
C+	55 - 59
C	50 - 54
D	40 - 49
F	< 40

I understand that these numbers may be slightly different to what you experience in other courses but the grading system (A, B, C, etc is the same).

Submission Guidelines

The report should be submitted to the online portal on the Canvas site before the allotted deadline (see Canvas page)

The individual section of the group presentation should also be submitted to the online portal on the Canvas site before the allotted deadline (see Canvas page)

Late assignment guidelines

Please let me know if you are struggling to keep up with the work. I know missing deadlines can be stressful! Sometimes it's just a one-time thing and other times it can snowball. I don't want you to get trapped in this cycle—I can help.

If you think you might miss a deadline:

1. Please contact me ahead of time if you believe you will not be able to complete an assignment on time to see if we can make other arrangements. This is always a better option than waiting after the due date for an assignment has passed.
2. Email me whatever you have before the deadline.

3. Keep in contact with me until you have finished. We can make a plan together to keep you on track.

Suggested Reading (you do not need to but these texts as they are available in the library/online)

- D. G. Grahame-Smith, J. K. Aronson, Oxford Textbook of Clinical Pharmacology and Drug Therapy, Open University Press (2002)
- R.C. Baselt, Disposition of toxic drugs and chemicals in man, 12th edition, Biomedical Publications (2020)
- S.H. Curry, R. Whelpton, Introduction to drug disposition and pharmacokinetics, Wiley (2016)

Useful Resources

- Journal of Analytical Toxicology: <https://academic.oup.com/jat>
- Toxicology: <https://www.journals.elsevier.com/toxicology>
- S. Jickells, A. Negrusz, Clarke's Analytical Forensic Toxicology, Pharmaceutical Press (2013)

Academic Integrity

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- properly acknowledge and cite all use of the ideas, results, or words of others
- properly acknowledge all contributors to a given piece of work
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of unsanctioned materials or unsanctioned collaboration
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress