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*BM3502- Neuroscience and Neuropharmacology*

*Course Handbook 2023-2024*

*Undergraduate Medical Sciences*

*School of Medicine, Medical Sciences & Nutrition*

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Course Summary

This course deals with the functional neuroanatomy and neuropharmacology of the mammalian peripheral and central nervous system and with neuromuscular pharmacology. It includes functional aspects of central and peripheral neurotransmission and covers the pharmacology and modes of action of drugs used to relieve pain, to relax skeletal muscles or to treat disorders such as Huntington’s disease, anxiety, depression, manic-depression, schizophrenia, epilepsy and myasthenia gravis.

# Course Aims & Learning Outcomes

The purpose of this course is to provide a thorough factual grounding in those aspects of Neuroscience and Neuropharmacology that are deemed to be essential if students are to make the most of their final honours year. It also lays the foundation for further study in neuroscience, physiology and pharmacology, and how these are applied to human health/disease. The primary objective of students enrolled in this course should be to learn with understanding the concepts discussed in lectures and tutorials or that they are asked to study in assigned reading or other media. The detailed course objectives are:

1. To describe current ideas about pharmacological receptors, receptor signalling and theories of drug-receptor interactions.
2. To give an overview of the structure and function of the central and peripheral nervous systems.
3. To describe the arrangement of the main transmitter systems in the brain and spinal cord.
4. To describe chemical neurotransmission at the neuromuscular junction and its modulation by drugs.
5. To describe chemical neurotransmission in the peripheral nervous system in health and disease and its modulation by drugs.
6. To describe chemical neurotransmission in the central nervous system in health and disease and its modulation by drugs.
7. To develop transferable skills particularly in relation to data handling and in abstract and reporting/interpreting scientific information.

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Course Teaching Staff

**Course Co-ordinator(s):**

Professor Derek A. Scott (DAS) (ext 7566) [d.scott@abdn.ac.uk](mailto:d.scott@abdn.ac.uk)

Other Staff:

Dr Derek Garden (DG), Medical Sciences [derek.garden@abdn.ac.uk](mailto:derek.garden@abdn.ac.uk)

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Dr Dawn Thompson (DT), Medical Sciences [dthompson@abdn.ac.uk](mailto:dthompson@abdn.ac.uk)

Dr Catriona Cunningham (CC), Medical Sciences [catriona.cunningham@abdn.ac.uk](mailto:catriona.cunningham@abdn.ac.uk)

# Assessments & Examinations

Attendance: Students are expected to attend the practical class and all lectures and seminars and to complete all class exercises by the stated deadlines. It is vital that you tell the Course Co-ordinator if you are unable to attend a particular class. The minimum performance acceptable for the granting of a class certificate is attendance at 75% of the practical classes, and presentation of all set course work, written and oral.

Continuous Assessment (CA): this makes up 30% of the total assessment. It is based on a practical report and two case studies, all completed via the online Lt system. Marks for these two exercises are weighted as follows: Practical (10%), the two case studies (20%).

Written Examination: 70% of the total assessment is based on what was one 90-minute written paper under pre-COVID circumstances. Students are expected to answer two questions of equal weighting selected from a list of four. The degree examination is held in April/May, with the re-sit examination in June/July. The continuous assessment mark will be considered at a student's second diet of examination.

# Class Representatives

We value students’ opinions in regard to enhancing the quality of teaching and its delivery; therefore, in conjunction with the Students’ Association we support the Class Representative system.

In the School of Medicine, Medical Sciences & Nutrition we operate a system of course representatives, who are elected from within each course. Any student registered within a course that wishes to represent a given group of students can stand for election as a class representative. You will be informed when the elections for class representative will take place.

What will it involve?

It will involve speaking to your fellow students about the course you represent. This can include any comments that they may have. You will attend a Staff-Student Liaison Committee and you should represent the views and concerns of the students within this meeting. As a representative, you will also be able to contribute to the agenda. You will then feedback to the students after this meeting with any actions that are being taken.

Training

Training for class representatives will be run by the Students Association. Training will take place within each half-session. For more information about the Class representative system visit [www.ausa.org.uk](http://www.ausa.org.uk) or email the VP Education & Employability [vped@abdn.ac.uk](mailto:vped@abdn.ac.uk) . Class representatives are also eligible to undertake the STAR (Students Taking Active Roles) Award with further information about this co-curricular award being available at: [www.abdn.ac.uk/careers](http://www.abdn.ac.uk/careers).

Problems with Coursework

If students have difficulties with any part of the course that they cannot cope with, alone they should notify the course coordinator immediately. If the problem relates to the subject matter general, advice would be to contact the member of staff who is teaching that part of the course. Students with registered disabilities should contact the medical sciences office, ([medsci@abdn.ac.uk](mailto:medsci@abdn.ac.uk)) (based in the Polwarth Building, Foresterhill) to ensure that the appropriate facilities have been made available. Otherwise, you are strongly encouraged to contact any of the following as you see appropriate:

* Course student representatives
* Course co-ordinator
* Convenor of the Medical Sciences Staff/Student Liaison Committee (Professor Gordon McEwan)
* Personal Tutor
* Medical Sciences Disabilities Co-ordinator (Dr Derryck Shewan)

All staff are based at Foresterhill and we strongly encourage the use of email or telephone the Medical Sciences Office. You may have a wasted journey travelling to Foresterhill only to find staff unavailable.

If a course has been completed and students are no longer on campus (i.e. work from second half session during the summer vacation), coursework will be kept until the end of Fresher’s Week, during the new academic year. After that point, unclaimed student work will be securely destroyed.

# Course Reading List

# Rang & Dale's Pharmacology

9th Edition – 2019

Authors: James Ritter, Rod Flower, Graeme Henderson, Yoon Kong Loke, David MacEwan, Humphrey Rang

eBook ISBN: 9780702074462

Paperback ISBN: 9780702074486

Students may also be directed to other relevant papers, reviews, media and textbooks by individual lecturers, and should make an effort to visit the library or search online to find other peer-reviewed texts/resources to assist with their own studies.

# Lecture Synopsis

**Introduction to the course/Receptors 1 - Prof D Scott**

An overview of the course. Properties of putative neurotransmitters. Quantal and graded responses; dose-response curves; log dose-response curves; agonists; antagonists; competitive reversible surmountable antagonism; competitive irreversible insurmountable antagonism; non-competitive antagonism; 'physiological' antagonism; 'chemical' antagonism; description of the occupancy theory of drug-receptor interactions and of the assumptions it makes; the concepts of affinity and efficacy; definitions of affinity constant and equilibrium constant; the concept of partial agonism; the concept of "spare" receptors; the evidence for 'spare' receptors.

**Receptors 2 - Prof D Scott**

'Silent' receptors; the need for a transduction mechanism; location and chemical nature of receptors; evidence for the existence of receptors (potency; biological selectivity; chemical selectivity; stereoselectivity; selective antagonism; 'protection' of receptors; presence of binding sites; presence of the genetic material required to express receptors).

**Review of First Semester Performance. What will you do after your degree? - Prof D Scott**

This is a generic lecture which is compulsory for all students reading for degrees administered by Biomedical Sciences. We will discuss with the class their recent assessment performance and provide feedback about how students have tackled them and how they might enhance their performance in the future. We will also try and give you an idea of what specific options and careers are open to you once you have completed your degree. The emphasis will be on the fact that you are all qualified in a variety of areas, and thus, you should not limit your options to those just related to the title of your degree. Students will be encouraged to think what transferable skills they have, be given tips for applying for further courses after this degree, and to start thinking about what it is they think they might want to do with their degree.

**Neuroanatomy 1 - Prof L Erskine**

Gross structure and organisation of the brain (cerebral cortex, diencephalon, brainstem) and spinal cord. Spinal and cranial nerves. Coverings of the brain (meninges) and the ventricular system. Division into central (CNS) and peripheral (PNS) nervous system. Relevant functions of the different regions.

**Tutorials in Neuropharmacology - Prof D Scott**

In this session, students will be assigned a time to take part in a problem-solving tutorial where we will explore the actions of some commonly used neuropharmacological agents, and how our physiology responds to them.

**Neuroanatomy 2 - Prof L Erskine**

Cellular organisation of the nervous system. Types of glia (astrocytes, oligodendrocytes, microglia, ependymal cells, Schwann cells) and their relative functions. Blood brain barrier. Structure of neurons (soma, axon, dendrites, axon hillock, nodes of Ranvier, presynaptic terminal). Structural and functional differences between distinct neuronal cell types.

**Autonomic Pharmacology 1 - Prof D Scott**

Introduction: The physiology of the autonomic nervous system (sympathetic/ parasympathetic) will be briefly reviewed. The neurotransmitters, noradrenaline and acetylcholine, will be introduced in the context of their specific receptors and the peripheral effects of activation. Cholinergic Transmission: Muscarinic receptor agonists and antagonists will be studied focussing on structure-function relationships, receptor subtype specificity and peripheral effects.

**Autonomic Pharmacology 2 & Neuromuscular Pharmacology - Prof D Scott**

Nicotinic agonists and antagonists together with receptor selectivity and structure-function relationships will be examined. Particular attention will be paid to non-depolarizing and depolarizing ganglion blockers and neuromuscular junction blockers, their mechanism of action, effects and clinical uses. Drugs affecting enhancement of release of acetylcholine acting at the presynaptic terminal, inhibiting acetylcholinesterase and inhibiting synthesis and release will also be studied.

**Autonomic Pharmacology 3 - Prof D Scott**

Adrenergic transmission: The synthesis, storage, release, and uptake of noradrenaline will be studied in the context of drugs affecting these processes such as tyrosine hydroxylase inhibitors, synthetic precursors, drugs affecting "leakiness" of vesicles, indirect sympathomimetics and drugs acting on the pre-synaptic alpha-2-adrenoreceptor.

**Autonomic Pharmacology 4 - Prof D Scott**

Adrenergic Transmission: Agonists for alpha- and beta-adrenoreceptor subtypes will be discussed with respect to affinity/efficacy and interaction with uptake systems and enzymes that metabolize noradrenaline. Different classes of antagonists for both alpha- and beta-adrenoreceptors and their effects/clinical uses will also be studied.

**Epilepsy/Anticonvulsants/Muscle Relaxants - Prof D Scott**

Nature of epilepsy and its neurobiology. Animals models. Classes of drugs used to treat epilepsy, mechanisms of action and pharmacological characteristics. Uses of muscle relaxants and antispasmodics in conditions other than epilepsy.

**General Anaesthetics - Prof D Scott**

Sought-after effects (analgesia, suppression of motor reflexes and loss of consciousness); types of anaesthetic; effects on the central nervous system at low, intermediate and high concentrations; sites of action (NB ascending reticular activating system); some cardiovascular effects; effects on axonal and synaptic transmission; theories of anaesthesia ("critical concentration" theory, critical volume theory, membrane expansion theory, hydrate theory, protein theory); evidence for these theories.

**Monoamines – Affective Disorders: Depression and mania – Dr D Thompson**

The management of affective disorders (unipolar and bipolar depression); monoamine theory of depression; pharmacology of antidepressant drugs (tricyclic antidepressants; monoamine oxidase inhibitors; "atypical" antidepressants); important adverse reactions to these drugs including the underlying mechanisms; monoamine oxidase (types, location, role); modes of action of amphetamine; modes of action of lithium; evidence for the monoamine theory of depression; more recent theories of depression; the actions of para-chlorophenylalanine, alpha-methyl-para-tyrosine, alpha-methyldopa, disulfiram and 5,6- and 5,7-dihydroxytryptamine; the use of certain monoamine oxidase inhibitors in the management of Parkinson's disease; the action of MPTP.

**Excitatory amino acid transmitters – Dr D Garden**

Classification into NMDA, AMPA, kainate, metabotropic and AP4 receptors; cellular actions of each receptor type; physiological/pathological role for (mainly) NMDA receptors.

**Inhibitory amino acid transmitters – Dr D Garden**

Distribution of GABA and glycine; cellular actions of GABAA, GABAB and glycine receptors.

**Data Handling & Visualization – Dr Catriona Cunningham**

Data handling and visualisation are essential skills in medical sciences. The questions for this tutorial will be released in advance to allow you to work through them in your own time. These will focus on a group of fictional researchers screening a screening a novel anxiolytic drug in mice. During the tutorial, we will then go through the answers together. By the end, you should have an appreciation of: how to express your data; choosing an appropriate graph type; plotting bar plots in Excel; how to improve your data visualisation; running t-tests and interpretation of p values.

**Monoamines – Schizophrenia – Dr D Thompson**

The management of schizophrenia; evidence for the role of dopamine in schizophrenia; pharmacology of dopamine antagonists; important adverse reactions to dopamine antagonists including the underlying mechanisms; selectivity of dopamine antagonists; types of dopamine receptor; the management and possible cause of Huntington's chorea.

**Central vs Peripheral Neurotransmitters - Dr D Thompson**

Recapitulation of ACh role in peripheral nervous system; anatomical evidence for a central transmitter role; electrophysiological evidence for a central transmitter role; implication in Alzheimer's disease, memory, Parkinson's disease and Huntington's chorea.

**Opioids - Dr J Hislop**

Classification of opioids; standard *in vivo* and *in vitro* bioassays; the evidence for opioid receptors (potency; chemical selectivity; stereoselectivity; selective antagonism; existence of opioid binding sites; presence of genetic material expressing the receptor protein); endogenous opioids; sites and modes of action for the production of analgesia; types of opioid receptor; non-analgesic effects of opioids; tolerance and dependence.

**Barbiturates and benzodiazepines - Dr J Hislop**

Barbiturates: chemical structure (barbitone, phenobarbitone, pentobarbitone, thiopentone); “pharmacokinetic” classification of barbiturates; effects of single administration; effects of repeated administration; modes of action; clinical uses. Benzodiazepines: examples; comparison with barbiturates; anxiolytic effect; standard in vivo bioassays for anxiolytic effect (NB rating scales; social interaction test, elevated plus maze, “light/dark” test, conditioned emotional response test, conflict test); definition of “placebo”; sites and modes of action; GABA theory; drugs which interact with GABAA receptors (benzodiazepine agonists and inverse agonists, barbiturates, steroids); GABAA and GABAB receptor agonists and antagonists; benzodiazepine antagonists.

**Perception of pain – Dr J Hislop**

Properties of nociceptors, nociceptive pathways, types of pain (e.g. visceral, deep, referred, phantom limb), gate-control theory, action of non-steroidal anti-inflammatory drugs, introduction to action of opioids.

**Peptides in the CNS – Dr Thompson**

Generalisations about synthesis, processing, co-localisation, and co-ordinated central and peripheral functions (NB identification has outstripped knowledge about function); history, receptor subtypes and clinical implications of opioid peptides.

**Course Summary, Exam Advice & Feedback - Prof D Scott**

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Practical/Lab/Tutorial Work

**Practical**

This practical will consist of an online practical focusing on experimental data used to classify receptor action and nervous system action. You will also be tasked with analysing some published scientific literature to get you into the habit of using more than just textbooks for original evidence. This exercise will contribute 10% towards your final written examination mark. See separate handout for further details. The practical will be available via the Lt platform.

**Case Studies**

You are required to complete 2 case study assessments on particular areas of neurophysiology or pharmacology. Each case study will contribute 10% of the continuous assessment mark and the practical 10% towards your final course mark. The content of each case study will be circulated to the class approximately 1 week before the deadline for completion. All students will have to undertake independent revision and study in order to find out the answers as you will not be able to rely on lecture notes alone. Students are strongly encouraged to include as much extra reading, mechanistic detail and relevant discussion as they can during these case study assessments. Brief one word or one line answers are unlikely to gain you enough credit to pass, so you must ensure you are fully prepared for these assessments. Case studies will be accessed via the Lt system.

University Policies

Students are asked to make themselves familiar with the information on key education policies, available [here](https://www.abdn.ac.uk/staffnet/teaching/key-education-policies-for-students-11809.php). These policies are relevant to all students and will be useful to you throughout your studies.  They contain important information and address issues such as what to do if you are absent, how to raise an appeal or a complaint and how the University will calculate your degree outcome.

These University wide education policies should be read in conjunction with this programme and/or course handbook, in which School specific policies are detailed. These policies are effective immediately, for the 2022/23 academic year. Further information can be found on the [University’s Infohub webpage](https://www.abdn.ac.uk/students/) or by visiting the Infohub.

The information included in the institutional area for 2022-23 includes the following:

* Assessment
* Feedback
* Academic Integrity
* Absence
* Student Monitoring/ Class Certificates
* Late Submission of Work
* Student Discipline
* The co-curriculum
* Student Learning Service (SLS)
* Professional and Academic Development
* Graduate Attributes
* Email Use
* MyAberdeen
* Appeals and Complaints

Where to Find the Following Information:

C6/C7- University of Aberdeen Homepage > Students > Academic Life > Monitoring and Progress > Student Monitoring (C6 & C7)

https://www.abdn.ac.uk/students/academic-life/student-monitoring.php#panel5179

Absences- To report absences you should use the absence reporting system tool on Student Hub. Once you have successfully completed and sent the absence form you will get an email that your absence request has been accepted. The link below can be used to log onto the Student Hub Website and from there you can record any absences you may have.

[Log In - Student Hub (abdn.ac.uk)](https://www.abdn.ac.uk/studenthub/login)

Submitting an Appeal- University of Aberdeen Homepage > Students > Academic Life > Appeals and Complaints

https://www.abdn.ac.uk/students/academic-life/appeals-complaints-3380.php#panel2109

Academic Language & Skills support

For students whose first language is not English, the Language Centre offers support with Academic Writing and Communication Skills.

Academic Writing

* Responding to a writing task: Focusing on the question
* Organising your writing: within & between paragraphs
* Using sources to support your writing (including writing in your own words, and

citing & referencing conventions)

* Using academic language
* Critical Thinking
* Proofreading & Editing

Academic Communication Skills

* Developing skills for effective communication in an academic context
* Promoting critical thinking and evaluation
* Giving opportunities to develop confidence in communicating in English
* Developing interactive competence: contributing and responding to seminar discussions
* Useful vocabulary and expressions for taking part in discussions

More information and how to book a place can be found here

Medical Sciences Common Grading Scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Grade | Grade Point | % Mark | Category | Honours Class | Description |
| A1 | 22 | 90-100 | Excellent | First | • Outstanding ability and critical thought • Evidence of extensive reading • Superior understanding •The best performance that can be expected from a student at this level |
|  |
| A2 | 21 | 85-89 |  |
|  |
| A3 | 20 | 80-84 |  |
|  |
| A4 | 19 | 75-79 |  |
|  |
| A5 | 18 | 70-74 |  |
|  |
| B1 | 17 | 67-69 | Very Good | Upper Second | • Able to argue logically and organise answers well  • Shows a thorough grasp of concepts  • Good use of examples to illustrate points and justify arguments  • Evidence of reading and wide appreciation of subject |  |
|  |
| B2 | 16 | 64-66 |  |
|  |
| B3 | 15 | 60-63 |  |
|  |
| C1 | 14 | 57-59 | Good | Lower Second | • Repetition of lecture notes without evidence of further appreciation of subject • Lacking illustrative examples and originality • Basic level of understanding |  |
|  |
| C2 | 13 | 54-56 |  |
|  |
| C3 | 12 | 50-53 |  |
|  |
| D1 | 11 | 47-49 | Pass | Third | • Limited ability to argue logically and organise answers • Failure to develop or illustrate points • The minimum level of performance required for a student to be awarded a pass |  |
|  |
| D2 | 10 | 44-46 |  |
|  |
| D3 | 9 | 40-43 |  |
|  |
| E1 | 8 | 37-39 | Fail | Fail | • Weak presentation • Tendency to irrelevance • Some attempt at an answer but seriously lacking in content and/or ability to organise thoughts |  |
|  |
| E2 | 7 | 34-36 |  |
|  |
| E3 | 6 | 30-33 |  |
|  |
| F1 | 5 | 26-29 | Clear Fail | Not used for Honours | • Contains major errors or misconceptions • Poor presentation |  |
|  |
| F2 | 4 | 21-25 |  |
|  |
| F3 | 3 | 16-20 |  |
|  |
| G1 | 2 | 11-15 | Clear Fail/Abysmal |  | • Token or no submission |  |
|  |
| G2 | 1 | 1-10 |  |
|  |
| G3 | 0 | 0 |  |
|  |

# BM3502 Course Timetable: 2023-2024

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Date | Time | Place | Subject | Session | Staff |
| Week 26 | | | | | |
| Mon 22 Jan | 09:00-10:00 | SUTTIE LT | Introduction to course; Receptors 1  RELEASE CASE STUDY 1 ON LT SYSTEM | Lecture | DAS |
| 12:00-13:00 | SUTTIE LT | Receptors 2 | Lecture | DAS |
| Tue 23 Jan | 15:00-17:00 | SUTTIE LT | Review of recent assessment performance/What will you do after your degree? | Lecture | DAS |
| Wed 24 Jan | 12:00-13:00 | SUTTIE LT | Neuroanatomy 1 | Lecture | LE |
| Thu 25 Jan | 09:00-17:00 | STH 0.001 | Tutorials in Neuropharmacology  CHECK WHICH GROUP YOU ARE IN! | Tutorial | DAS |
| Fri 26 Jan | 12:00-13:00 | SUTTIE LT | Neuroanatomy 2 | Lecture | LE |
| Week 27 | | | | | |
| Mon 29 Jan | 10:00-11:00 | SUTTIE LT | ANS Pharmacology 1 | Lecture | DAS |
| 11:00-12:00 | SUTTIE LT | Case Study 1 Introduction and how to perform well in case study assessments | Lecture | DAS |
| Tue 30 Jan |  |  |  |  |  |
| Wed 31 Jan | 12:00-13:00 | SUTTIE LT | Data Handling and Visualisation | Lecture/ Tutorial | CC |
| Thu 1 Feb | 10:00-17:00 | STH 1.007 | Drug Screening/Natural Product Extraction Practical Group 1 | Practical | DAS/  JH |
| Fri 2 Feb | 12:00-13:00 | SUTTIE LT | Autonomic Pharmacology 2 & Neuromuscular pharmacology – Nicotinic receptors & NMJ blockers | Lecture | DAS |
| Week 28 | | | | | |
| Mon 5 Feb | 09:00-10:00 | SUTTIE LT | Autonomic Pharmacology 3 – Adrenergic neurotransmission | Lecture | DAS |
| 11:00-12:00 | SUTTIE LT | Epilepsy/Anticonvulsants/Muscle Spasm & Muscle Relaxants | Lecture | DAS |
| Tue 6 Feb |  |  | SUBMIT CASE STUDY 1 ONLINE  RELEASE CASE STUDY 2 ONLINE |  |  |
| Wed 7 Feb | 12:00-13:00 | SUTTIE LT | Autonomic Pharmacology 4 – Adrenergic agonists and antagonists | Lecture | DAS |
| Thu 8 Feb | 10:00-18:00 | STH 0.004 | Drug Screening/Natural Product Extraction Practical Group 2 | Practical | DAS/JH |
| Fri 9 Feb | 12:00-13:00 | SUTTIE LT | Affective Disorders – depression | Lecture | DT |
| Week 29 | | | | | |
| Mon 12 Feb | 09:00-10:00 | SUTTIE LT | Excitatory amino acids | Lecture | DG |
| 11:00-12:00 | SUTTIE LT | Inhibitory amino acids | Lecture | DG |
| 12:00-13:00 | SUTTIE LT | General Anaesthetics | Lecture | DAS |
| Tue 13 Feb |  |  |  |  |  |
| Wed 14 Feb | 12:00-13:00 | SUTTIE LT | Monoamines & Schizophrenia | Lecture | DT |
| Thu 15 Feb | 10:00-18:00 | STH 1.007 | Drug Screening/Natural Product Extraction Practical Group 3 | Practical | DAS/JH |
| Fri 16 Feb | 12:00-13:00 | SUTTIE LT | Central vs Peripheral Neurotransmission | Lecture | DT |
| Week 30 | | | | | |
| Mon 19 Feb | 09:00-10:00 | SUTTIE LT | Perception of Pain | Lecture | JH |
| 11:00-12:00 | SUTTIE LT | Barbiturates & Benzodiazepines | Lecture | JH |
| Tue 20 Feb |  |  |  |  |  |
| Wed 21 Feb | 12:00-13:00 | SUTTIE LT | Opioids | Lecture | JH |
| Thu 22 Feb | 10:00-18:00 | STH 1.007 | Drug Screening/Natural Product Extraction Practical Group 4 | Practical | DAS/JH |
| Fri 23 Feb | 12:00-13:00 | SUTTIE LT | Peptides | Lecture | DT |
| Week 31 - No New Teaching – Revision and Assessment Only | | | | | |
| Mon 26 Feb | 11:00-12:00 | SUTTIE LT | TUTORIAL 3 – WHOLE CLASS | Tutorial | DAS |
| Tue 27 Feb |  |  | SUBMIT CASE STUDY 2 ONLINE |  |  |
| Wed 28 Feb |  |  |  |  |  |
| Thu 29 Feb |  |  |  |  |  |
| Fri 1 Mar | 12:00-13:00 | SUTTIE LT | Course Summary, Exam Info, Feedback | Revision Session | DAS |

Staff

* Dr Dawn Thompson (DT)
* Prof Lynda Erskine (LE)
* Prof Derek Scott (DAS), (Course Co-ordinator)
* Dr James Hislop (JH)
* Dr Derek Garden (DG)
* Dr Catriona Cunningham (CC)

Campus Maps – Foresterhill



Polwarth Floor Plans

Diagram, schematic

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated