School of Pharmacy and Biomolecular Sciences
Module Learning Handbook

PY166  Introductory Pharmacy 2


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Introduction
This module aims to integrate the areas of pharmaceutical sciences, cell biology, pharmacology and pharmaceutical practice by studying cases on lung cancer, pain, health during pregnancy and pet medicines.

Aims
This module aims to provide an introduction to:
- Pharmaceutical sciences and how they are applied in the design, development, and testing of medicines
- Pharmacology and relevant aspects of biological sciences and their relationship to drug function and product safety
- Pharmacy practice by reference to particular scenarios, common situations and professional standards

Learning Outcomes
On successful completion of this module the student will be able to:
LO1 Demonstrate an understanding of cell biology, the mechanisms of drug action; the physiology and pathology of selected organ systems; microbiology, parasitology and aspects of pharmacy practice.
LO2 Explain the basic principles of: pharmaceutical chemistry, such as thermodynamics; the role of biopharmaceutics and pharmaceutics in bringing together different types of drugs and excipients to formulate medicines; drug selection and function.
LO3 Understand the aetiology of common conditions and rationale for their treatment encountered in a community pharmacy setting.
LO4 Recognise the context in which a knowledge of pharmaceutical science and therapeutics can be linked to effective practice and patient-centred skills;
LO5 Recognise the context in which a pharmacy professional operates, including concepts of the legal classification of medicines, health (health, illness and disease), team-working, professionalism and the healthcare system; including veterinary medicines.
LO6 Apply a theoretical understanding of a range of subjects within the field of pharmacy to a practical context and demonstrate the ability to gather and interpret findings

Teaching and Learning
Please see the online timetable for details of scheduled sessions. The running order and topics is provided below.

Formal lectures (68 hours), laboratory classes (20 hours), guided study, independent study (212 hours). Multiple examples of formative assessment and feedback are included in the module e.g.
- Online MCQ tests (one per case) which are automatically marked to be undertaken during independent study; these support summative written exams
- Formative SAQs during lectures to support summative written exams; generic verbal feedback from staff/bespoke feedback from peers

The lecture delivery running order is given in the case handbook
The following topics will be covered as part of module cases

Lung Cancer (Week 9: 19/11/2019 – Week 12: 09/12/2019)
- Structure-activity relationships and the interaction of functional groups and biological macromolecules.
- Basic organic reactions including acid / base reactions, oxidation and reaction, electrophilic additions, elimination, nucleophilic substitution), electrophilic aromatic substitution, acylation reaction, hydrolysis of esters and amides.
- The formulation of solutions (e.g. IV solutions).
- Psychosocial factors in health and illness; changing health behaviours; principles of drug monitoring illustrated by CAVE chemotherapy (full blood counts, etc.).

**Tutors involved in teaching on the case**

<table>
<thead>
<tr>
<th>MCA*</th>
<th>SW</th>
<th>PRG</th>
<th>MJI</th>
<th>GWJO</th>
<th>SG</th>
<th>AHL</th>
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**Pain** (Week 12: 10/12/2019 – Week 15: 21/01/2020)
- Basic calculations and units utilised in analytical chemistry.
- Basic methods for physical characterisation of pharmaceutical drugs (melting point, colour assay, etc.).
- The analytical process (sampling, assay etc.) and quality indicators for assaying medicines. Analytical monitoring, parameters and terminology.
- An introduction to the principles of biopharmaceutics and ADME fundamentals.
- Introduction to evidence based medicine, 2WHAM, common OTC treatments. WHO pain ladder; psychological aspects of pain, placebo effect.

**Tutors involved in teaching on the case**

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<tr>
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<th>SG</th>
<th>SW</th>
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<tbody>
<tr>
<td>RWM</td>
<td>MJI*</td>
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**Health during Pregnancy** (Week 15: 27/01/2020 – Week 17: 03/02/2020)
- Transition metal chemistry, chelation and redox reactions.
- Approaches utilised for qualitative and quantitative analysis (e.g. titration and gravimetric analysis).
- Anaemia: formation and breakdown of red blood cells. Intake and transport of iron around the body, transferrin, ferritin, B₁₂ and folic acid. Inheritance of genetic blood disorders.
- Introduction to aspects of sexual health including sexually transmitted diseases; types of anaemia and their treatment; Adherence to medication.
- Systemic and local drug delivery.

**Tutors involved in teaching on the case**

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<tr>
<th>CM</th>
<th>GS*</th>
<th>JIS</th>
<th>AHL</th>
<th>DKS</th>
<th>MJI</th>
<th>SW</th>
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**Pet Medicines** (Week 17: 04/02/2020 – Week 18: 10/02/2020)
- Specific zoonotic and parasitic infections e.g. food poisoning organisms, endoparasitic infections (nematodes and cestodes), ectoparasitic infections (ticks, lice, fleas and mites)

**Tutors involved in teaching on the case**

<table>
<thead>
<tr>
<th>SJ</th>
<th>SI*</th>
<th>LB</th>
<th>JIS</th>
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The exchange and substitution in assignment to topics of tutors is likely over the course of a module in any year of academic study.

The cases and module covers a 10 week period divided by the Christmas recess and an end of module PY165 assessment. The Assessment for PY166 will occur after the Easter vacation.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/case</th>
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<tbody>
<tr>
<td>8</td>
<td>Module PY165 teaching concludes</td>
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<tr>
<td>9</td>
<td>Module PY166 starts with Lung cancer case</td>
</tr>
<tr>
<td>10</td>
<td>Lung cancer</td>
</tr>
<tr>
<td>11</td>
<td>Lung cancer</td>
</tr>
<tr>
<td>12</td>
<td>Lung cancer / Pain</td>
</tr>
<tr>
<td></td>
<td>CHRISTMAS BREAK</td>
</tr>
<tr>
<td>13</td>
<td>PY165 examination / Pain</td>
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<tr>
<td>14</td>
<td>Pain</td>
</tr>
<tr>
<td>15</td>
<td>Pain / Health during pregnancy</td>
</tr>
<tr>
<td>16</td>
<td>Health during pregnancy</td>
</tr>
<tr>
<td>17</td>
<td>Health during pregnancy / Pet medicines</td>
</tr>
<tr>
<td>18</td>
<td>Pet medicines</td>
</tr>
<tr>
<td>19</td>
<td>Module PY167 teaching starts</td>
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Taught lectures and Workshops

The lectures are intended to be a starting point for your study only on each topic. You are expected to take read around the subject area using primary sources of literature. Presentation materials (Powerpoint files and web material) that are used during taught sessions are all available on StudentCentral. You are encouraged to use these in your own time to aid learning.

The material pertaining to the PY166 learning outcomes will be delivered in an integrated manner by presentation of illustrative case-studies named i) Lung Cancer, ii) Pain, iii) Health during Pregnancy and iv) Pet (Veterinary) Medicines. Brief summaries of the topics covered in each case are provided below (please refer to the case handbooks for more details about the individual cases, timetabling, and staff members involved; any alterations to the timetable will be posted on Student Central).

Laboratory Classes

Laboratory classed require all students to work individually other than where directed otherwise by the tutor taking the class. You will find undertaking the class and any assessment much easier if you have undertaken preparation in advance (a minimum of reading through the schedule and making some preliminary notes). You must be aware of your individual laboratory group and the timetabled allocation for this group. You are NEVER allowed to just swap classes or simply select when you want to undertake the class. To swap classes formally you must find another student will to undertake an exchange and do this at least ONE working day in advance, notifying the module leader and seeking their permission to undertake the swap.
Students are reminded that they must wear safety spectacles and laboratory coats whilst in the laboratory. This is a legal requirement. Failure to comply will result in the student being excluded from the laboratory class. Safety spectacles are available from the technicians. Lab coats may be purchased from the Student Union shop.

Students **must** attend the safety talk at the beginning of each practical class undertaken in a laboratory.

<table>
<thead>
<tr>
<th>Element of coursework as laboratory class</th>
<th>Assessment form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung cancer case – Solubility of drugs</td>
<td>End of lab, 10 MCQ test (8.3% of coursework component; 2.5% of module)</td>
</tr>
<tr>
<td>Pain case - Guinea pig ileum</td>
<td>Demonstration only (no marks attributed but knowledge used in next module (PY167) undertaken in the year). Attendance at the demonstration is <strong>expected for all</strong> students</td>
</tr>
<tr>
<td>Pain case – Analysis of paracetamol</td>
<td>Laboratory write-up 1200 words (91.7% of coursework component; 27.5% of module)</td>
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**Learning Support and Coursewares**

Please see “ASPIRE” reading list on the Studentcentral module area for details of learning resources for the module.

Current editions of:
5. British National Formulary, BMA & RPSGB
7. Pharmacy Practice, Taylor and Francis, ed Taylor, K. and Harding, G.
8. Rang and Dale's Pharmacology - Rang, H. P., Dale, M. Maureen
9. Essential Microbiology for Pharmacy and Pharmaceutical Science, Wiley-Blackwell (Also available as an EBook), Hanlon, G. W. and Hodges, N. A.

- Current journals containing research papers and review articles and web-pages relevant to subjects under discussion.

**PLEASE NOTE:** It is expected that you will make substantial use of the scientific literature to supplement your reading of the recommended texts.

**Software and databases**

Specialist Chemistry Software is provided by University site licence and can be found on all pooled PCs on site. Access to research databases such as Reaxys, Scifinder and Sciencedirect is also provided free to all students by a University subscription. The RSC also provide a range of Research Council sponsored databases. Check with the Information Services staff for assistance with home access to University resources.

Assessment

The information contained in practical handbooks is useful and related to the material delivered by lectures. Students should not assume that coursework and examination are mutually exclusive to the material taught in the year and therefore potentially part of a formal end of module examination.

Assessment for this module consists of two components, each with a threshold mark requirement of 40%. A weighted average of 40% must also be achieved across the 2 mark bearing components to pass the module.

<table>
<thead>
<tr>
<th>Item</th>
<th>Brief Description</th>
<th>%</th>
<th>Deadline</th>
<th>Feedback (when and how)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1</td>
<td>A 3 hour unseen written exam (70% of the module mark) (LO 1-5)</td>
<td>70%</td>
<td>Sem 2 exam period</td>
<td>Post examination</td>
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<tr>
<td></td>
<td>The examination is based on a large number of MCQs (40 marks), many SAQs (60 marks) and a single LAQ question (20 marks) selected from the cases taught in the year of study</td>
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<tr>
<td>Component 2</td>
<td>Written report (1200 words) (5%) Laboratory-based assessment based on laboratory exercise (25%) Lab demonstration (LO 6)</td>
<td>30%</td>
<td>Submission 10 working days after lab class; feedback 20 working days after submission</td>
<td>Appended comments to online submission of reports and numerical score for MCQ tests</td>
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Feedback and Moderation

Feedback will be provided on your performance to aid your learning. To provide you with the most appropriate support, the means and timing of feedback will vary according to the task. Please note that feedback on any work will not be made available until after all students have handed in the item. An announcement will be sent out by email when feedback is ready for viewing. Students are reminded that work handed in late will be subject to penalties as described in GEAR.

Plagiarism and collusion

Please consult the University’s Plagiarism Awareness Pack if you are unsure what constitutes plagiarism or collusion. Collusion will be treated as cheating and penalised accordingly. Do not share your coursework or your preparation with students outside of your group. Once submitted, reports may be scrutinised by the JISC plagiarism detection system (Turnitin) and the module team will be presented with a report highlighting any sections which have substantial similarity to other documents on the internet or submitted by other users of the system, including previous submissions. Work which has a very high similarity index will be examined in more detail by a member of staff, and should it appear that plagiarism or collusion have taken place, the student(s) concerned will be subjected to the University's Academic Misconduct procedure.

Moderation

All your assessed work is subjected to checking for consistency and fairness according to the University’s moderation policy in this module.

Sample phrases might include
• Because more than one member of staff is needed to complete the marking in a timely manner,
  consistency between staff is ensured through a neutral markers moderation.
• Scheduling of a pre-meeting to determine use of the marks scheme and additional blind double
  marking of a sample of each marker’s work.
• In addition, group marks are adjusted to reflect individual contributions on the basis of individuals.

The moderation process undertaken for written work consists of a team (normally 1-3 staff) looking at your
submitted work. A small number of tutors mark all the work to ensure consistency. This marking is
moderated by a third (neutral) observer tutor using a specific sampling approach. Work taken from the best
scoring, moderate scoring, poorest scoring and failing students is taken in equal proportions so as to
traverse the range of work quality and marks. The sample size is typically greater than 10 students or the
square root of the total number of students involved. Very often a larger sample size is examined and
notably is supplementary to the situation, if it arises, where individual markers are in disagreement over
marks.

Where any discrepancies are discovered during this process, the source is investigated to eliminate any
errors and, where necessary, all work will be marked again. Marks for any module are scrutinised and
ratified by an course exam board with the participation of an external examiner.

**HOW YOUR COURSEWORK GETS MARKED**

**DAY 1**
- Submission deadline.
- The marking is allocated to the marking team by the module leader.

**DAY 2-18**
- Your work is marked.
- Each staff member might have up to 6 modules worth of student assessments.
- Each submission for an assessment could take an hour to mark.
- During this time the team will also be teaching, supervising project students, undertakings research and attending meetings amongst other things.

**DAY 18-19**
- Your work is moderated.
- The module team normally moderate the marks and feedback of each marker to ensure consistency.
- Moderation ensures fairness across the whole cohort and confirms standards are in line with quality assurance processes.

**DAY 20**
- Your feedback is returned to you.
- Your feedback is released and available to you either online or through the school office.

*University of Brighton*

School of Pharmacy and Biomolecular Sciences

**Student Feedback**

You will be offer a chance to feedback to us on your student experience via an anonymous survey at the
end of the module. Please let us know what you found effective and what you think could be improved. If
you have any questions or experience any problems with this module please email the module leader as
soon as possible for help and assistance.