

UNIVERSITY OF WOLVERHAMPTON

Pharmaceutical Science BSc (Hons)

COURSE GUIDE 2012/13

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About this guide

This Course Guide will help you plan your course. It tells you which modules you must study and pass, and lists the optional ones which contribute to your award. The Guide also offers you brief descriptions of each module, including general information about assessment tasks, and an overview of how the Course can be used for future career choices.

You should read this Course Guide in conjunction with the [Undergraduate Student Guide: the University's Policies and Regulations](#) and/or [Postgraduate Student Guide](#). These documents should provide you with all the basic information that we think you will need for your period of study here.

You are encouraged to read this Guide through now. It will be a considerable advantage to you to be familiar from the outset with the various aspects of your studies that are described. It may be that the relevance of some of the sections will not be immediately obvious. Keep it somewhere accessible, so that you can refer to it as needed. The answers to many of the questions that you will want to ask are contained in it.

Obviously even in a document like this we have not covered every query and problem that you might have about the course. If you find that there is something you need to know, please check on [SAS Student Support Portal in WOLF](#) or contact the SAS Student Support Office (details below). You can also consult the University's [Student Services Gateway](#) as appropriate. We are pleased to hear your views and welcome suggestions for ways of improving the operation of the Course.

Please enter the contact details for your Personal Tutor for your future reference:	----- <i>The name of your Personal Tutor will be given to you at the beginning of your course and can be checked via e:Vision</i>
Your School Student Support Office is:	Student Support Office Room: MA104 Tel : 01902 322129 Email: sasstudentsupport@wlv.ac.uk
Your local <i>HERE 2 HELP</i> is:	Ground floor MD Building, City Campus (South) Tel: 01902 322487 Fax:01902 322185

Please note that in order to develop and improve the Course, it may be necessary on occasions to amend or revise the details given in this Course Guide.

Welcome

On behalf of the Course Management Team I should like to extend to you a very warm welcome and I would like to take this opportunity to wish you every success in your studies at the University of Wolverhampton, and trust that your time at the University of Wolverhampton will prove to be enjoyable, stimulating and rewarding.

The BSc (Hons) Pharmaceutical Science course is one of many run by the School of Applied Sciences which has established an excellent reputation for the quality of its courses, for an innovative approach to teaching and learning, and for the friendliness of its staff.

We believe it is important that you are encouraged to make your own contribution to the effective operation and development of your chosen course. We are, therefore, keen to hear your views and would welcome any suggestions that you may have about ways of improving any aspect of your course and/or the student experience here at the University. In practice, you will have the opportunity to do this through our 'student voice' processes, such as student forums.

Remember that the outcome of your studies could affect the whole of your future career and therefore study should certainly be your first priority. In resolving to work hard however, do not forget to have time for recreation and social activities. Make sure you take full advantage of the [University facilities](#) at your disposal.

Dr Chris Perry (Course Leader)

c.i.perry@wlv.ac.uk

Attendance

The University recognises that you have made a significant investment in both time and money in choosing to study for a degree. Staff are committed to helping you fulfil your potential. Your attendance at, and participation, in classes is a key factor in ensuring that you do so.

Attendance will help you to:

- Understand the subject area you are studying;
- Acquire and develop the skills and knowledge needed to ensure success;
- Prepare for and undertake assessments;
- Learn from and with your fellow students;
- Receive feedback from teaching;
- Participate in practical and group work;
- Develop your communication skills.

If you are unable to attend a class please let your tutor know that you are unable to do so. He/she will then be able to give you advice on what was covered in the class, and what you need to do to catch up. Please do remember how important attendance is to your success.

The University considers this to be so important that it reserves the right to review the position of students who fail to attend.

The Wolverhampton Graduate

By the end of your course, the university expects you to be a Wolverhampton Graduate who is knowledgeable and enterprising, digitally literate and a global citizen.

Digitally Literate

Our graduates will be confident users of advanced technologies; they will lead others, challenging convention by exploiting the rich sources of connectivity digital working allows.

Knowledgeable and Enterprising

Our graduates will know how to critique, analyse and then apply knowledge they acquire in an enterprising way.

Global citizens

Our graduates will bring an informed understanding of their place and ethical responsibilities in the world.

Further information can be found on the University student webpage for [Graduate Attributes](#).

About the Course

This Guide outlines the modules which are available, teaching and learning activities and assessment tasks. If there is anything you need to discuss further, please contact Dr C.J. Perry (c.j.perry@wlv.ac.uk)

The educational aims of the course are:

- To support you in the development of intellectual and key interpersonal skills as well as subject knowledge that will equip you for life-long learning.
- To develop a knowledge of the physico-chemical and biological principles necessary to understand the sourcing, preparation, analysis and properties of medicinal agents. This will include the design, delivery, mode of action, therapeutic application and clinical usage of medicines.
- To encourage the development of practical and problem solving skills, research methods and the techniques and processes necessary for the evaluation, critical appraisal and systematic review of pharmaceutical science.

The course learning outcomes are:

That at the end of this course you, the student, will be able to:

1. Apply a range of graduate skills to an investigation in pharmaceutical science
2. Design, implement and critically evaluate research in pharmaceutical science
3. Critically evaluate modern concepts of disease and the contribution of new technologies to the treatment of disease
4. Design and implement appropriate strategies for the manufacture and quality control of pharmaceutical dosage forms

These will be achieved through the following learning activities:

- Computer based learning
- Supported learning using the University VLE (WOLF) for information, synchronous and asynchronous communications
- Lectures
- Tutorials (small group)
- Tutorials (one-to-one)
- Workshops
- Problem based learning
- Case studies
- Structured laboratory exercises
- Individual structured assignment-based learning
- Directed study
- Individual or group investigative practical exercises
- Individual and group research project investigations
- Group work to develop and assess a wide range of manipulative, logic and other transferable skills

The course is currently accredited by the Royal Society of Chemistry and graduates may apply for Associate Membership of the Society.

Academic Regulations

This course adheres to the University's academic regulations. A full version of these regulations can be found on the University web page [for Policies and Regulations](#). These regulations govern your course and will be binding on you. It is, therefore, important that you read and become familiar with them.

Course information

Blended learning: In 2008, the University adopted a Blended Learning Strategy which promotes the integration of technology supported learning across all our modules. We believe this will improve the employability and, digital literacy, of our students and the effectiveness and efficiency of our learning and teaching practice. As a result of this Blended Learning approach, students are entitled to have access where possible to an electronic copy of all lecturer-produced course documents e.g. module guides, assessment briefs, presentations, handouts and reading lists. All material is to be made available on WOLF topics and will include detailed module information, interactive tutorials, class practical results, lecture materials and many other forms of material to encourage independent learning.

There will also be formative assessment opportunities (on-line with appropriate meaningful electronic assessment and feedback. Many modules incorporate interactive materials into their teaching strategies, so that students can test their performance as they progress. You will also have opportunities to collaborate on line with others in your learning cohort and each module will have a Café area on WOLF where students can join discussion groups and communicate with their cohort members.

There will be opportunities to participate in electronic Personal Development Planning (ePDP) and the new Undergraduate Development module will involve an electronic portfolio which students will maintain and evaluate for themselves. You will be able to submit some assessment material on-line and this is set to become much more common on this new programme, with a move towards paperless assessment.

There will also be opportunities to engage in interactive learning during all face to face sessions. Experienced staff will use question and answer techniques in lectures (including polls and surveys) and practical classes will be especially interactive with integrated assignments and activities.

Assessment methods

During this course you will encounter the following types of assessments:

- *Examinations:*
 1. MCQs – to test a wide base of knowledge at a surface level
 2. Short answer questions – to allow your knowledge to be tested beyond the surface level
 3. Long answer questions – to test deep knowledge of a limited range of topics
- *Practical tests* – to determine whether the skills required at the bench have been mastered
- *Portfolio preparation* – to create a resource of practical and analytical techniques
- *Oral presentations* – to equip you with skills to communicate your ideas and findings

- *Coursework* – to allow you to investigate specific topics and report your findings in your own words to an agreed format that represents best practice in scientific reporting.

Support for Learning

A wide range of support for learning will be available to Pharmaceutical Science students. Generic support will include the use of central services such as SAS's Student Support Office, for general enquiries, and City Campus's Learning Centre. The Learning Centre will provide library facilities as well as electronic and literature search resources and can introduce study skills to students. Support for study skills will also be embedded within individual modules. Outside of the module environment, 'drop-in' opportunities at the Learning Centre or with demonstrators will be available.

For more specific support, students will be able to contact their personal tutors as well as being able to use SAMS to contact individual members of staff for face-to-face meetings. Specialist software (Know-it-All, PharmaCALogy, PebblePad, GraphPad Prism, Chart, etc.) is likely to be introduced within a module setting, so further enriching the learning environment for students, with additional staff support being offered where necessary.

Using the above mentioned frameworks to support the development of study skills, *autonomous student learning* will be encouraged.

Any Distinctive Features of the course

A heuristic approach to learning pervades this course. There is a deliberate emphasis on learning through experimentation and problem solving which is intended to improve the confidence of students and prepare them for the workplace. This culminates in the final year project where independent learning, experimental design, planning and personal organisation are key aspects. Students will be encouraged from the outset to view the final year project as a means of demonstrating the learning and skills which have been developed in the earlier years of the course. In a sense, the project begins on day one of the programme.

Under Graduate Regulations (This section does not apply to Higher Nationals, Foundation Degrees and RN/Dip HE.)
<p>Standard Full-time:</p> <p>modules worth 120 credits each academic year, taught over two semesters in the academic year.</p>

Course Structure for undergraduate courses

Level 4					
Semester 1			Semester 2		
C	4PY013 Molecular Basis of Life		20		20
C	4PY011 Pharmaceutical Chemistry and Physico-Chemical Principles for Pharmacy				20
C	4BM004 Human Structure and Function		20	C	4PY009 Principals of drug Action
C	4PY012 Scientific Communication & Undergraduate Development		20	C	4PY008 Introduction to Microbiology
Level 5					
Semester 1			Semester 2		
C	5PY015 Practical Pharmaceutical Techniques				20
C	5BC001 Molecular Biosciences				20
C	5BC002 Proteins		20	C	5PY014 Principles of Drug Discovery, Development and Formulation
C	5PY017 Pharmaceutical Microbiology		20	C	5PY010 Therapeutic Pharmacology
Level 6					
Semester 1			Semester 2		
C	6PY004 Honours Project				40
C	6PY002 Pharmaceutical Biotechnology & Molecular Biology		20	C	6BC003 Quality Assurance and Biomolecular Analysis
C	6PY005 Advanced Pharmaceutical Formulation		20	C	6PY006 Biochemical Pharmacology

University Academic Calendar 2012/13

[University Academic Calendar.](#)

Course Management and Staff Involved with the Course

The guidance that you are offered comes from members of the course team.

Head of Department - Professor Rae Morgan
Course Leader - Dr Chris Perry

A Personal Tutor will also be assigned to you during welcome week of year one. This person will remain your tutor until graduation. This tutor will normally be a member of the course team.

The course team consists of:

Prof Rae Morgan (Professor of Pharmacy education)
Prof John Howl (Professor in Molecular Pharmacology)
Prof Satya Sarker (Professor of Pharmacy)

Dr Edward John Mole (Principal Lecturer in Pharmaceutical Chemistry)
Dr Iain Coleman (Principal Lecturer in Pharmacology and Pharmaceutical Science)
Dr Colin Brown (Senior Lecturer in Pharmacology and Course Leader)
Dr Steve Anderson (Senior Lecturer in Pharmacology)
Dr Angel Armesilla (Reader in Cancer Pharmacology)
Dr Chris Perry (Senior Lecturer in Pharmaceutical Chemistry)
Dr Daron Fincham (Senior Lecturer in Biochemistry)
Dr Paul Hooley (Senior Lecturer in Cell & Molecular Biology)
Dr Claire Martin (Senior Lecturer in Pharmaceutics)
Dr Chris McConville (Senior Lecturer in Pharmaceutics)
Dr Steve Safrany (Senior Lecturer in Pharmacology)
Dr James Tang (Senior Lecturer in Pharmaceutics)

Mr Abhishek Gupta (Junior Lecturer/Demonstrator in Pharmaceutical Science)
Miss Laura Harvey-Vallender (Junior Lecturer/Demonstrator in Pharmaceutical Science/Pharmacology)
Mr Adam Watts (Junior Lecturer/Demonstrator in Pharmacology and Biomedical Sciences)
Mrs Jemima Mantle (Departmental Secretary)

Other staff from departments within SAS also lead and teach on some modules.
These include:

Dr Paul Barrow (Senior Lecturer in Biomedical Science)
Dr Terry Bartlett (Senior Lecturer in Forensic Science)
Dr Martin Khechara (Senior Lecturer in Microbiology)
Dr Gill Condé (Senior Lecturer in Biomedical Science)
Dr Catherine Duke (Senior Lecturer in Forensic Science)
Dr Peter Griffiths (Senior Lecturer in Biomedical Science)
Dr Paul Hooley (Senior Lecturer in Cell & Molecular Biology)
Dr Mark Morris (Lecturer in Molecular Biosciences)
Dr Iain Nicholl (Senior Lecturer in Biomedical Science)
Dr Liz O'Gara (Senior Lecturer in Biomedical Science)
Dr Shantha Perera (Senior Lecturer in Biomedical Science)
Dr Roy Protheroe (Senior Lecturer in Biological Science)
Dr James Vickers (Senior Lecturer in Biomedical Sciences)
Dr Weiguang Wang (Reader in Cancer Studies)
Dr Michael Whitehead (Senior Lecturer in Genetics & Molecular Biology)

HOW THE COURSE IS MANAGED

The BSc Pharmaceutical Science/Pharmacology Board oversees the operation and development of this course. Some of the modules on this Course, contribute towards the MPharm Course and are therefore subject to review by the General Pharmaceutical Council.

Student input is an essential part of the development of this course. See below for details.

BSc Pharmaceutical Science/Pharmacology Board and the Course Journals.

The Course team undertakes the day-to-day administration and the team holds at least 2 meetings per year with student representatives. Elections of student representatives are organised early in the academic year and you should ensure that you know your currently elected representative. Student representatives raise issues for discussion at the Board and other students should inform their representative about items they want to include. The aim of these meetings is to identify both good practice and problems. We attempt to resolve the problems by deciding on what action to take and the outcomes are reported in the notes of the meeting. We can only help you with your problems if we know they exist.

A recent development is the introduction of a Course Journal. There is a separate Journal for each Course and students are encouraged to interact with this on-line forum.

Use your representatives

This Board and Course Journal are the main avenues for you to influence the operation and development of your course. You are therefore encouraged to participate as much as possible, either directly as a student elected member, or indirectly via your elected member or your comments in the Course Journal..

If you have an academic or personal problem let us know as soon as possible. Your personal tutor has a vital role as they are familiar with the structure and regulations of the course and will advise you. If in doubt please consult your personal tutor or the course leader.

Where to get help with your course

If you find that there is something you need to know, please check on [SAS Student Support Portal in WOLF](#) or contact the SAS Student Support Office in room MA104, Tel: 01902 322129 or Email: sasstudentsupport@wlv.ac.uk

Student Support

If you encounter any issues (personal or academic) the following diagram directs you to the appropriate department or staff member.



Employability & Your Personal Development Portfolio (PDP)

What is 'Employability'?

'Employability' is concerned with the development of skills aimed at enhancing your employment prospects throughout your time here at the University of Wolverhampton. Developing specialist subject and academic knowledge is important for employers but they also want to employ individuals who are able to:

- Communicate effectively,
- Work in a team and have good interpersonal skills.
- Solve problems
- Work on their own using their own initiative and are able to adapt to changing situations
- Be self-confident

How Will You Develop Your Employment Skills?

At the School of Applied Sciences we aim to provide you with the opportunity to develop these through the modules you will be studying. The assessments you do for your modules are designed to help you develop Subject specific skills through the research you undertake for the assignments. In addition, they are also designed to help you develop other key skills such as your written communication skills. Where you have formal presentations, this will build your self-confidence in addition to helping you develop your skills of verbal communication. Working as part of a team will develop vital group-work skills. Attending your classes regularly will further ensure that you have the opportunity to develop other skills.

Throughout your time at the University, you will develop and be able to demonstrate a number of skills, some of which are listed below:

- Working as part of a group
- Demonstrating teamwork skills and leadership skills
- Effective communication
- Written (via reports etc.)
- Oral (through formal presentations)
- Problem-solving
- IT skills (which include use of basic packages for word processing, spreadsheets, use of email etc.)
- Time management – attending classes, handing in of assignments, planning study time

You may also be working part-time. The experience you gain within a work environment is a very worthwhile one and also helps you to develop transferable skills which are valued by employers.

Health & Safety issues

You will be trained in the safe and appropriate behaviour for the different working areas that you will be exposed to. As part of the Student Charter, you will be expected to follow the Health & Safety guidelines.

Progression for Further Study

On successful completion of your degree, you may wish to study towards an MSc or PhD in an area of personal interest.

Career opportunities

A broad range of career opportunities are available to graduate pharmaceutical scientists. Listed below are some of the key areas where graduates are likely to find employment:

- Teaching
- Research laboratories
- Pharmaceutical industry laboratories
- Pharmaceutical industry medical representatives
- Pharmaceutical industry clinical trials scientists
- Pharmaceutical industry medical education specialists
- Pharmaceutical industry training departments

Graduates will demonstrate the generic, subject-specific and transferable knowledge and skills that form a sound basis for further postgraduate study and/or research and their continuing development.

School Charter for Students

The University is a community of learning; each and every member, be they staff or students, has responsibilities to that community as well as to themselves. All students of the university have the right to study in an environment that promotes success. This means that no one should be distracted by the inconsiderate behaviour of others; for example by people who arrive late, or talk in lectures or the learning centre.

In order to help you achieve your objectives with us, we will strive to provide:

- Effective impartial advice and guidance
- An effective introduction to the University, the School of Applied Sciences and your chosen course
- A welcoming environment with quiet places to study
- Appropriate resources including books and computing resources
- Qualified and professional tutors and staff
- Stimulating and well planned learning opportunities
- Well-defined and appropriate programmes of study
- Opportunities to plan and review progress with tutors and student support workers
- Access to learning support
- Access to confidential counselling and careers advice

We will aim to ensure that

- Timely and appropriate feedback will be provided on assessments
- You have a personal tutor
- You can book an appointment with your tutor using the on-line booking system
- You will have access to the information you need to progress on your course e.g. each module you study will be accompanied by a module guide, similarly your award/pathway will have a guide or handbook

You will find information about all of the above in your Pathway Guide or Award Handbook, or from your tutor or from the web.

The University expects and needs you to:

- Make regular use of the electronic systems provided for your use e.g. E-Mail, E-Vision, Wolf and the student appointments system If you do not make use of these resources you cannot perform well.
- Attend regularly and punctually, this means for example, that you should not enter a teaching room after the session has started or miss appointments you have made to see staff.
- Given in all your assessments on time (or they will not be marked)
- Show courtesy and respect to staff and other students, this means for example, that cell phones should be turned off in all teaching sessions.
- Ensure that you understand the requirements of your award/pathway
- Ensure that you are aware of the requirements of each module you are studying and are aware which sessions to attend and what the assessment procedures are
- Respect and abide by University Regulations, e.g. Equal Opportunities Policy, ID Cards, quiet areas.
- Bring all the personal equipment that you require to classes/workshops
- Show consideration to others by listening attentively and participating in class activities
- Keep your tutor informed if you have personal problems that affect your work; if these problems make it necessary to seek extensions, to do so before the deadline
- Identify for yourself what constitutes academic misconduct such as plagiarism and make every effort to avoid it. (See <http://www.wlv.ac.uk/polsregs> for definitions and help)
- Use the student support office (Room MA104) to get quick answers to your queries without hunting for a lecturer.
- Seek approval for and confirm any change of programme within the deadlines
- Inform the University when your address or other contact details change
- Follow Health and Safety guidelines in laboratory and fieldwork settings.
- Behave appropriately as an ambassador for the University when working off campus.

Academic Misconduct

The University considers seriously all acts of academic misconduct, which by definition are dishonest and in direct opposition to the values of a learning community. Academic misconduct, if not challenged, will ultimately devalue academic standards and the honest efforts of students.

Defining Academic Misconduct

Cheating

Cheating is defined as any attempt to gain unfair advantage in an assessment by dishonest means, and includes, for example, all breaches of examination room rules, impersonating another student, falsifying data, and obtaining an examination paper in advance of its authorised release.

This is not an exhaustive list and other common examples of cheating would include –

- Being in possession of “crib notes” during an examination
- Copying from the work of another student
- Prohibited communication during an examination
- Acts of plagiarism or collusion as defined below

Collusion

Collusion is when two or more people combine to produce a piece of work for assessment that is passed off as the work of one student alone. The work may be so alike in content, wording and structure that the similarity goes beyond what might have been coincidence. For example – where one student has copied the work of another, or where a joint effort has taken place in producing what should have been an individual effort.

Collusion should not be confused with the normal situation in which students learn from one another, sharing ideas and group work to complete assignments (where this is specifically authorised).

Plagiarism

Plagiarism is the act of taking someone else’s work and passing it off as your own. This includes incorporating either unattributed direct quotation(s) or substantial paraphrasing from the work of another/others. It is important to cite all sources whose work has been drawn on and reference them fully in accordance with the referencing standard used in each academic school.

The most common forms of plagiarism are –

- Cut or copied and pasted materials from websites
- Copying the work of another student (past or present) including essays available through “essay bank” websites – or other data.
- Copying material from a text book or journal

Students may go to great lengths to disguise the source reference they have been consulting in contributing to an assignment – without understanding that with proper referencing this is entirely acceptable.

Support for Students

The University, through its academic staff, will be both sympathetic and supportive in preventing plagiarism and other forms of academic misconduct.

A variety of support mechanisms are in place to help students succeed and avoid academic misconduct.

- Visit our study skills support website at www.wlv.ac.uk/skills See the section on tackling academic misconduct.
- Download the Students' Union guide to Avoiding Academic Misconduct ("Read, Write, Pass") - available from the same web pages
- Book an appointment to see a study skills adviser - through the Learning Centres.
- Speak to your personal tutor or module leader.
- There is help available if you need it. The University caught and prosecuted 500 cases of Academic Misconduct last year - it is better to do the work than think you can get away with cheating - the penalties are severe...

Penalties

Where an offence is admitted, or a panel decides that cheating, plagiarism or collusion has occurred, a penalty will be imposed. The severity of the penalty will vary according to the nature of the offence and the level of study. Penalties will range from failure of the assignment under investigation to a restriction of the award a student may ultimately achieve or a requirement to leave the University.

Full details about the University's policy on Academic Misconduct and regulations and procedures for the investigation of academic misconduct are available at our website: www.wlv.ac.uk/polsregs