

UNIVERSITY OF WOLVERHAMPTON

BSc (hons) Biochemistry

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.

BSc (hons) Biochemistry is one of many courses 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. Do take full advantage of the [University facilities](#) at your disposal.

Dr Catherine Duke
c.v.a.duke@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 on the BSc (hons) Biochemistry course, plus teaching and learning activities and assessment tasks. If there is anything you need to discuss further, please contact the course leader, Dr Catherine Duke.

Educational Aims of the Course

The BSc (hons) Biochemistry course aims to:

- Develop your knowledge and understanding of the underlying theories of biochemistry. It will also provide practical experience of the major analytical techniques used in biochemistry, including bioinformatics.
- Equip you with the appropriate subject-specific knowledge and transferable skills for a wide range of careers in the research, industrial, health, educational, and academic sectors.
- Enable you to develop your skills in scientific and critical thinking and to study independently.

Learning Outcomes of the Course

At the end of the BSc (hons) Biochemistry course you will be able to:

1. explain concepts and technologies that are appropriate to the corpus of knowledge expected of a biochemistry graduate
2. think clearly, with a sound knowledge of the issues surrounding the central role of biochemistry in all aspects life science
3. utilise your skills to discover information for yourself and critically analyse, review and evaluate this in the light of your subject knowledge
4. work safely in the laboratory and utilise a range of analytical techniques that are directly related to the needs of your future workplace role
5. undertake independent study in an aspect of biochemistry utilising a range of appropriate information resources and investigative tools

Prizes

Each year, the best student on either the BSc (hons) Biochemistry or BSc (hons) Genetics and Molecular Biology courses is awarded the Oxford University Press Molecular Biosciences prize.

Course Recognition

BSc (hons) Biochemistry is recognised by the Royal Society of Chemistry (RSC) as a course that will qualify graduates for Associate Membership of the RSC.

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

Attendance Policy

The School of Applied Science expects students to attend all classes. We know from experience that students whose attendance is good generally do very well on their course, while those students whose attendance is poor are very likely to fail.

Many science modules include practicals and workshops, and these generally require students to attend and complete all sessions. It is not possible to pass these modules without attending.

Attendance lists will regularly be taken in both lectures and practical classes, and students who are absent will be contacted and asked to explain their absence.

If you cannot your classes for genuine reasons (e.g. illness) you need to let staff know as soon as possible. A part-time job is not a valid reason for missing classes. If you have a part-time job, you must fit your job around your University course, not your course around your job.

Blended Learning

The University has 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.

There are six blended learning entitlements:

1. 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

This is our minimum standard for module delivery. It is expected that this will be delivered via WOLF for all modules that comprise the course.

2. formative assessment opportunities on line with appropriate meaningful electronic assessment feedback;

Formative assessments are a key feature of the course. We expect to engage formatively with students via practical activities as a routine feature. In addition, generic feedback on both interim and terminal assessments will be accessible using the WOLF platform for a range of modules. This strategy, coupled to traditional timetabled face-to-face feedback throughout the course is expected to develop the student understanding of expectations of graduate performance levels and should form part of the on-line reflective feedback process.

3. have opportunities to collaborate on line with others in their learning cohort;

At all levels students engage in group work activities. As such, students need to interact. The degree provides opportunities for students to undertake this formally using topic blogs but our experience is that students use informal social networking sites out of preference to engage in this activity. Some group activities have an expectation of formal email communications to forward progress and this provides a further on-line interaction vehicle.

4. have the opportunity to participate in electronic Personal Development Planning (ePDP);

There are formal opportunities to engage in electronic feedback at all levels. The process of ePDP building commences in the first semester, with students being introduced to the PebblePad platform and the type and nature of materials that can be stored to evidence personal development statements. The materials are developed during the second year using the second semester module, 5BC004. The electronic interface means that ePDPs can be made available to prospective employers if students are building evidence-based job applications.

5. submit all appropriate assessments online;

The nature of practically based subjects means that some assessments are not appropriately submitted via on-line interfaces. However, in compass with a reduction in overall assessment loading and a move towards formal terminal assessment, a consequence of the drivers within Learning Works, the number of interim assessments has been reduced to a number where it is feasible where appropriate to utilise electronic submission where appropriate. It will never be the only form of interim assessment in practically-based subject areas, however.

6. opportunities to engage in interactive learning during all face to face sessions.

Modular delivery expects student engagement and it is expected that all teaching will engage to varying extents with interactive learning. This will vary from selective in-lecture feedback to gauge student understanding of concepts and knowledge, through to interactive practical, tutorial and workshop sessions where interactive learning process will be more student focussed through to one-to-one sessions where a student can individually interact with staff around their learning agenda.

Learning Activities and Assessment Methods

Learning activities are focused on moving towards student-centred learning from a more tutor-centred approach. Thus level 4 modules tend to involve tutor-led sessions, with defined student directed activities, whereas level 6 modules are more student-centred, with tutors acting to facilitate students' learning. Students will be presented with theoretical information in lecture sessions and then will use workshops, group tutorials, seminars, on-line forums, electronic tutorials, directed reading and a range of IT-based activities and formative assessments to develop these concepts.

Practical skills will similarly be developed through the course. Level 4 practicals will be directed towards developing basic laboratory skills, which are put into context at level 5. At level 6, students will be expected to employ the practical skills they have learned in a research project in their area of interest.

Modules will be assessed by the following methods:

- Problem solving exercises
- Presentations
- Case studies
- Practical reports
- Phase Tests
- Examinations, seen and unseen
- Essays
- Written assignments

- Personal Development Portfolios
- Structured assessment of research projects from planning through to thesis submission
- Appropriate use of formative, self, tutor and peer assessment methods

Distinctive Features of the Course

This broad-based course examines the techniques used to investigate the world of the cell at a molecular level. It explores how the cells in your body function and how malfunction of these sub-cellular processes can occur. It helps you develop the practical skills and knowledge to consider challenging areas of science such as the diagnosis and treatment of cancer, DNA fingerprinting and forensic science.

An optional one-year placement provides you with the opportunity for valuable work experience as well as giving you useful employment contacts.

You will get extensive practical experience applying your knowledge in the laboratory. The laboratory and IT facilities that support your studies are up there with the best and offer first class support for your honours project.

Undergraduate Regulations

Full-time students: must study modules worth 120 credits each academic year, taught over two semesters in the academic year.

Part-time students normally study modules worth no more than 80 credits each academic year.

Course Structure for undergraduate courses

Course Structure for BSc (Hons) Biochemistry

All modules are 20 credit unless stated otherwise

Level	Semester 1	Semester 2
Level 4 (formerly level 1)	4AB008 Bioscience Skills (year long)	
	4PY013 Molecular Basis of Life (year long)	
	4BM004 Human Structure and Function	4BM005 Microbiology and Immunology
	4BC001 Chemistry for Forensic and Molecular Science <i>or</i> 4BC002 Forensic and Molecular Chemistry Choose 4BC001 if you do <i>not</i> have A Level Chemistry at grade C or above. Choose 4BC002 <i>only</i> if you have A Level Chemistry at grade C or above.	4PY009 Principles of Drug Action <i>or</i> 4BM006 Disease Biology Choose 4PY009 for a pharmaceutical flavour to your course. Choose 4BM006 for a biomedical flavour to your course.
Level 5 (formerly level 2)	5BC001 Molecular Bioscience (year long)	
	5AB008 Cellular and Organismal Bioscience (year long)	
	5BC002 Proteins	5BC004 Practical Molecular Bioscience Assay and Research Methods
	5BC003 Molecular Bioscience Practical Techniques	5PY010 Clinical Pharmacology <i>or</i> 5BM006 Biology and Investigation of Disease 2 Choose 5PY010 if you studied 4PY009 at level 4. Choose 5BM006 if you studied 4BM006 at level 4.
Placement	5AB017 Sandwich Placement (40 credits) (Sandwich students only)	
Level 6 (formerly level 3)	6AB003 Honours Project in Biological and Forensic Sciences (40 credits, year long)	
	6BC001 Advance Topics in Molecular Bioscience	6BC003 Quality Assurance and Biomolecular Analysis
	6BC002 Gene Manipulation and Bioinformatics	6PY006 Biochemical Pharmacology <i>or</i> 6BM009 Clinical Aspects of Biochemistry and Immunology Choose 6PY006 if you studied 5PY010 at level 5. Choose 6BM009 if you studied 5BM006 at level 5.

University Academic Calendar 2012/13

[University Academic Calendar.](#)

Course Management and Staff Involved with the Course

Staff Involved with the Course

The following staff are the members of the Department of Forensic & Molecular Science of the School of Applied Sciences, but you will also be taught by members of other departments within the School, and occasionally Visiting Lecturers.

Dr Raul Sutton Head of Department and Placement Tutor
room MA207a
tel: 01902 322167
email: R.Sutton@wlv.ac.uk

Dr Tara Bal room MA137
tel 01902 211115
email: ts.bal@wlv.ac.uk

Dr Terry Bartlett Admissions & Recruitment Tutor
room MA144
tel: 01902 322693

email: T.J.Bartlett2@wlv.ac.uk

Dr Alan Burns Room MA144
Tel: 01902 322154
Email: A.T.Burns@wlv.ac.uk

Ms Emma Clemson room MA118
tel: 01902 322221
email: E.Clemson@wlv.ac.uk

Dr Catherine Duke Course Leader
room MA144
tel: 01902 322737
email: c.v.a.duke@wlv.ac.uk

Dr Paul Hooley room MA145
tel: 01902 322130
email: P.Hooley@wlv.ac.uk

Dr Izabela Radecka room MA145
tel: 01902 322771
email: I.Radecka@wlv.ac.uk

Dr Wera Schmerer room MA144
tel: 01902 323570
email: W.Schmerer@wlv.ac.uk

Ms Julie Walton room MA118
tel: 01902 321089
email: J.T.Walton2@wlv.ac.uk

Dr Michael Whitehead room MA145
tel: 01902 322771
email: M.P.Whitehead@wlv.ac.uk

Prof Craig Williams room MA137
tel: 01902 322159
email: C.Williams@wlv.ac.uk

Dr Malc Inman Senior Technician, Forensic Science
room MA027
tel: 01902 322364
email: msi@wlv.ac.uk

**School of Applied Sciences Special Needs Tutor and Equality & Diversity
Coordinator**

Dr Nick Musgrove room MA223
tel: 01902 322191
email: n.j.musgrove@wlv.ac.uk or sasnt@wlv.ac.uk

Staff-Student Liaison

Staff-student liaison meetings take place once a semester, usually about semester week 6. All students are welcome to attend, but course reps are expected to attend. Students who have issues to raise can bring issues directly to the meeting, or pass issues to the course reps, or email the Course Leader.

Course reps are students who volunteer to represent the views of their fellow students. Training for course reps is available from the Students' Union.

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.

BSc (hons) Biochemistry is also available in Sandwich mode. The Sandwich placement is a 48 week work-based placement which is taken between levels 5 and 6 (years 2 and 3 for full time students). Students generally find a Sandwich placement very valuable for the experience of working in a professional laboratory. In addition, we find that on return from placement, most students improve their module grades in their final year.

Health & Safety issues

Biochemistry is a practical subject, and you will be required to spend quite a lot of time in laboratories. You will be required to abide by the School of Applied Sciences Codes of Practice, in particular CoP3 “Working in Bioscience Labs” and CoP4 “Chemistry and Analytical Labs”. When you come to undertake your Honours project, you will be required to complete CoSHH (Control of Substances Hazardous to Health) forms and Risk Assessments (see “Coshh Assessment” and

CoP15 "Risk Assessment"). The Codes of Practice and additional information are given on WOLF, in the Health and Safety folder of the SAS Student Support Portal.

Progression for Further Study

Suitably qualified graduates in BSc (hons) Biochemistry have the opportunity to study for a higher degree, for example a taught MSc such as MSc Molecular Biology with Bioinformatics or MSc Medical Biotechnology, a Master's degree by research (MRes), or even a PhD.

Career opportunities

Biochemistry graduates have excellent job prospects. According to Unistats.com, 70% of graduates are in employment or further study within 6 months of leaving, with 60% finding "graduate level" jobs, placing us in the top 15 Universities for employability in this field. Some of our graduates are working in hospital analytical laboratories as MLSOs, as post-Doctoral research fellows and as science teachers. Graduates are needed by employers looking for relevant skills in areas such as pharmaceuticals, brewing, food, biotechnology and agrochemicals. Career opportunities also exist in hospitals, public health laboratories, teaching and research.

School Charter for Students

The University is a community of learning; each and every member, be they staff or students, have 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 honest effort on the part 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 webpages.
- 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