

## Course Specification

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<b>Status:</b>	Validated

## Core Information

<b>Awarding Body / Institution:</b>	University of Wolverhampton		
<b>School / Institute:</b>	Wolverhampton School of Sciences		
<b>Course Code(s):</b>	BC005K23UV	Sandwich	4 Years
<b>UCAS Code:</b>	C701		
<b>Course Title:</b>	BSc (Hons) Biochemistry with Sandwich Placement		
<b>Hierarchy of Awards:</b>	Bachelor of Science with Honours Biochemistry, having satisfactorily completed a sandwich placement Bachelor of Science with Honours Biochemistry Bachelor of Science Biochemistry, having satisfactorily completed a sandwich placement Bachelor of Science Biochemistry, having satisfactorily completed a sandwich placement Diploma of Higher Education Biochemistry Certificate of Higher Education Biochemistry University Statement of Credit University Statement of Credit		
<b>Language of Study:</b>	English		
<b>Date of DAG approval:</b>	25/Sep/2017		
<b>Last Review:</b>	2017/8		
<b>Course Specification valid from:</b>	2010/1		
<b>Course Specification valid to:</b>	2023/4		

## Academic Staff

<b>Course Leader:</b>	Dr Matthew Conner
<b>Head of Department:</b>	Georgina Manning

# Course Information

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Location of Delivery:	University of Wolverhampton
Category of Partnership:	Not delivered in partnership
Teaching Institution:	University of Wolverhampton
Open / Closed Course:	This course is open to all suitably qualified candidates.

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## Entry Requirements:

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Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS)

### 2017 Entry

- A level minimum of BB or CDD to include Biology or Chemistry.
- Access to Higher Education Diploma requires 60 credits overall, 45 credits at Level 3 to include at least 18 Science credits at Merit.
- BTEC Level 3 Extended Diploma in Applied Science grade MMP or BTEC National Diploma grade DM.
- Applicants will normally be expected to hold GCSE English and Maths at grade C+/4 or equivalent
- If you've got other qualifications or relevant experience, please contact [The Gateway](#) for further advice before applying.
- International entry requirements and application guidance can be found [here](#)
- Successful completion of the [International Foundation Year in Science and Engineering](#) guarantees entry on to this course

### Other Requirements

An offer of a place will not be made until you have attended a formal interview.

Those who do not meet the entry requirements may be offered an alternative course.

### Distinctive Features of the Course:

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This broad-based biochemical course examines the techniques used to investigate the world of the cell at a molecular level. It explores how the cells in your body, and within all living things, 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 the biotechnology of pharmaceutical products. 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.

A placement can be undertaken anywhere; local, national or even, in some instances, international. During a placement, you will be doing similar work to a normal employee of the organisation giving you a unique insight into your chosen profession or sector, the opportunity to acquire crucial personal skills and also the opportunity to build a network of useful contacts. Many companies that employ graduates use placement programmes as a method of recruitment so you could be fast tracked into employment or onto one of their graduate schemes if you impress them.

The team at [The Workplace](#) constantly search for new placement opportunities but if you find an opportunity that interests you or you have been successful in securing one yourself, contact them for further information and support.

### Educational Aims of the Course:

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This 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.

Intakes:

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September

Major Source of Funding:

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Office for Students (OFS)

Tuition Fees:

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Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2020/1	Home / EU	Full Time / Sandwich	£9250.00
2020/1	Overseas	Full Time / Sandwich	£12250.00
2021/2	H	Full Time / Sandwich	£9250.00
2021/2	Overseas	Full Time / Sandwich	£13450.00

PSRB:

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None

Course Structure:

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## September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

**Year 1**

Module	Title	Credits	Period	Type
4BC005	Biochemistry for Life Science	20	SEM1	Core
4AB023	Introduction to Biosciences	20	SEM1	Core
4BC004	Introduction to Molecular Genetics	20	SEM2	Core
4BM027	Cell Biology	20	SEM2	Core
4PY011	The Physicochemical Nature of Drugs	20	SEM1	Core

**For this option group you must choose a minimum of 20 credits and a maximum of 20 credits**

4PY009	Principles of Drug Action	20	SEM2	
4BM017	Biomedical Basis of Disease	20	SEM2	

## September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

### Year 2

Module	Title	Credits	Period	Type
5AB032	Biochemistry	20	SEM1	Core
5BC001	Molecular Biosciences	20	SEM1	Core
5BC005	Molecular Biosciences Practical Techniques	20	SEM1	Core
5AB031	Cellular and Organismal Biosciences	20	SEM2	Core
5AB033	Biochemical Assay Techniques	20	SEM2	Core
5BM062	Principles of disease investigation in clinical biochemistry	20	SEM2	Core

## September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

### Year 3

Module	Title	Credits	Period	Type
5AB017	Sandwich Placement	40	YEAR	Core

## September (Sandwich)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

## Year 4

Module	Title	Credits	Period	Type
6AB020	Honours Project (Biosciences)	40	YEAR	Core
6BC010	Advanced Topics in Biochemistry	20	SEM1	Core
6BM056	Clinical Biochemistry	10	SEM1	Core
6BC003	Quality Assurance and Biomolecular Analysis	20	SEM2	Core
6BM057	Developmental & Cellular Physiology	10	SEM1	Core
6BC009	Developmental Biology	20	SEM2	Core

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

## Learning, Teaching and Assessment

### Academic Regulations Exemption:

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AFRSC/17/22.4.4 - BSc (Hons) Biological Sciences/BSc (Hons) Genetics and Molecular Biology/BSc (Hons) Biochemistry/BSc (Hons) Microbiology and Biotechnology.

Section 1.2.5 - Exemption to permit less than 33% differentiation between cognate Biosciences honours degrees.

APPROVED (17/5/2018).

### Reference Points:

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This course refers to the [QAA Bioscience subject benchmark](#)

Equality Act 2010

### Learning Outcomes:

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CertHE Course Learning Outcome 1 (CHECLO1)

"Demonstrate knowledge of the underlying concepts and principles associated with your area(s) of study, and an ability to evaluate and interpret these within the context of that area of study"

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CertHE Course Learning Outcome 2 (CHECLO2)

"Demonstrate an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of your subject(s) of study."

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CertHE Course Learning Outcome 3 (CHECLO3)

Evaluate the appropriateness of different approaches to solving problems related to your area(s) of study and/or work

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CertHE Course Learning Outcome 4 (CHECLO4)

"Communicate the results of your study/work accurately and reliably, and with structured and coherent arguments"

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CertHE Course Learning Outcome 5 (CHECLO5)

Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility

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DipHE Course Learning Outcome 1 (DHECLO1)

"Demonstrate knowledge and critical understanding of the well-established principles of your area(s) of study, and of the way in which those principles have developed with an understanding of the limits of your knowledge, and how this influences analyses and interpretations based on that knowledge."

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DipHE Course Learning Outcome 2 (DHECLO2)

"Demonstrate the ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context"

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DipHE Course Learning Outcome 3 (DHECLO3)

"Demonstrate knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study"

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DipHE Course Learning Outcome 4 (DHECLO4)

"Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis"

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DipHE Course Learning Outcome 5 (DHECLO5)

"Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively"

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DipHE Course Learning Outcome 6 (DHECLO6)

"Demonstrate the qualities and transferable skills necessary for employment, requiring the exercise of personal responsibility and decision-making and undertake further training, developing existing skills and acquire new competences that will enable them to assume significant responsibility within organisations"

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Ordinary Degree Course Learning Outcome 1 (ORDCLO1)

Explain concepts and technologies that are appropriate to the corpus of knowledge expected of a biochemistry graduate

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Ordinary Degree Course Learning Outcome 2 (ORDCLO2)

"Think clearly, with a sound knowledge of the issues surrounding the central role of biochemistry in all aspects life science"

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Ordinary Degree Course Learning Outcome 3 (ORDCLO3)

"Utilise your skills to discover information for yourself and critically analyse, review and evaluate this in the

light of your subject knowledge"

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Ordinary Degree Course Learning Outcome 4 (ORDCLO4)

Work safely in the laboratory and utilise a range of analytical techniques that are directly related to the needs of your future workplace role

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Ordinary Degree Course Learning Outcome 5 (ORDCLO5)

Undertake independent study in an aspect of biochemistry utilising a range of appropriate information resources and investigative tools

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Honours Degree Course Learning Outcome 1 (DEGCLO1)

Explain concepts and technologies that are appropriate to the corpus of knowledge expected of a biochemistry graduate

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Honours Degree Course Learning Outcome 2 (DEGCLO2)

"Think clearly, with a sound knowledge of the issues surrounding the central role of biochemistry in all aspects life science"

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Honours Degree Course Learning Outcome 3 (DEGCLO3)

"Utilise your skills to discover information for yourself and critically analyse, review and evaluate this in the light of your subject knowledge"

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Honours Degree Course Learning Outcome 4 (DEGCLO4)

Work safely in the laboratory and utilise a range of analytical techniques that are directly related to the needs of your future workplace role

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Honours Degree Course Learning Outcome 5 (DEGCLO5)

Undertake independent study in an aspect of biochemistry utilising a range of appropriate information resources and investigative tools

Overview of Assessment:

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Module	Title	Course Learning Outcomes
4AB023	Introduction to Biosciences	CHECLO1, CHECLO2, CHECLO3, CHECLO4, CHECLO5
4BC004	Introduction to Molecular Genetics	CHECLO1, CHECLO2, CHECLO3, CHECLO4
4BC005	Biochemistry for Life Science	CHECLO1, CHECLO2, CHECLO3, CHECLO4
4BM017	Biomedical Basis of Disease	CHECLO1, CHECLO2, CHECLO3, CHECLO4
4BM027	Cell Biology	CHECLO1, CHECLO2, CHECLO3, CHECLO4
4PY009	Principles of Drug Action	CHECLO1, CHECLO2, CHECLO3, CHECLO4
4PY011	The Physicochemical Nature of Drugs	CHECLO1, CHECLO2, CHECLO3, CHECLO4, CHECLO5
5AB017	Sandwich Placement	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5AB031	Cellular and Organismal Biosciences	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5AB032	Biochemistry	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5AB033	Biochemical Assay Techniques	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5BC001	Molecular Biosciences	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5BC005	Molecular Biosciences Practical Techniques	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
5BM062	Principles of disease investigation in clinical biochemistry	DHECLO1, DHECLO2, DHECLO3, DHECLO4, DHECLO5, DHECLO6
6AB003	Honours Project in Biological and Forensic Sciences	DEGCLO1, DEGCLO3, DEGCLO4, DEGCLO5, ORDCLO1, ORDCLO3, ORDCLO4, ORDCLO5
6AB020	Honours Project (Biosciences)	DEGCLO1, DEGCLO3, DEGCLO4, DEGCLO5, ORDCLO1, ORDCLO3, ORDCLO4, ORDCLO5
6BC001	Advanced Topics in Molecular Bioscience	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BC002	Gene Manipulation and Bioinformatics	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BC003	Quality Assurance and Biomolecular Analysis	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BC009	Developmental Biology	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BC010	Advanced Topics in Biochemistry	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BM009	Clinical Biochemistry and Clinical Immunology	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BM056	Clinical Biochemistry	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6BM057	Developmental & Cellular Physiology	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3
6PY006	Biochemical Pharmacology	DEGCLO1, DEGCLO2, DEGCLO3, ORDCLO1, ORDCLO2, ORDCLO3

### Teaching, Learning and Assessment:

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.



## The Development of Graduate Attributes

### Global Citizenship

Throughout the course, students will consider the role biochemistry plays in the broader context of society. An important aspect of the course is the development of an understanding of professional practice and ethics in biochemistry. This will be developed in particular through the modules, 'Practical Molecular Bioscience Assay and Research Methods' at level 5 and 'Laboratory Management and Biomolecular Analysis' at level 6. Professional practice and ethics are key concepts in many professions, and while specific details may vary, the understanding of the principles of professional practice and professional ethics is eminently transferable into many different fields.

### Digital Literacy

Throughout the course students will use a range of standard and specialist software to prepare and present reports, assignments, presentations, etc across a wide range of modules, with increasing sophistication. The development of digital literacy skills is exemplified by the module 6BC002 that has an expectation of engagement with the digital agenda; utilising the many digital techniques associated with bioinformatics.

Students will be introduced to ePDPs and start their individual e-portfolio using PebblePad. Students will be expected to make use of CANVAS for accessing module information, submitting assignments, engaging in module forums, etc.

Students will be expected to make use of email for module and other University communications. By the end of the course, students should be comfortable with and competent in the digital world, and have the flexibility to adapt to a wide range of digital activities.

### Knowledgeable and Enterprising

The course develops students' knowledge base and skills in Biochemistry through all the subject specific module content. In addition, the development of transferable skills improves and enhances employability beyond the field of biochemistry, and indeed science in general. The level 6 module, 'Laboratory Management and Biomolecular Analysis' tests employability skills by dealing with workplace issues such as quality management.

The emphasis on the students moving to a student centred learning approach also fosters the development of transferrable skills. Students are required to reflect upon their learning experience and to extrapolate from this the skills that would make them stand out in their respective career pathways.

As part of the module Practical Molecular Bioscience Assay and Research Methods, they will also consider job applications, and how best to present themselves, by making a formal written application for an Honours project. Students will also be directed to the relevant careers support services in the University.

### Assessment Methods:

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At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)  
Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)  
Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

## Student Support:

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The design of this award allows students to receive learning support targeted to individual needs. The generic module support delivered by the module teams includes regular reflective support meetings. In addition, more generic advice and feedback derived from the generic electronic assessment feedback to allow students to reflect on their personal issues in the context of the group performance.

The demonstrator team provides extensive learning support for students. The team is qualified to advise students at all stages of undergraduate study and provides regular informal drop-in sessions. This is supported by on-line bookable appointments with either demonstrators or academic staff to act as an additional layer of support. The Learning Centre offers considerable support with regards to study skills, as well as focussing on aspects of information retrieval. During Level 4 studies, students are introduced to the basic approaches to study skills. This includes online literature searches, academic writing, and referencing skills. This is supported by academic staff within lectures, small group discussions and personal tutorial sessions. Level 5 develops this by the demonstrator team facilitating the transition to primary literature information retrieval through project preparation. Finally, at level 6, each student is individually supported throughout the project cycle in all aspects of the investigative process.

## Employability in the Curriculum:

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Biochemistry graduates have excellent job prospects. According to Unistats.com, 80% of graduates are in employment or further study within 6 months of leaving. Some of our graduates are working in hospital analytical laboratories as MLSO's, 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. There is also the opportunity to study for a higher degree, for example Molecular Biology with Bioinformatics or Applied Microbiology and Biotechnology.

The completion of a Sandwich Year will enable you to gain valuable hands on experience in a relevant work environment. This will not only provide additional practical subject skills but it will also develop personal transferable skills such as communication skills, problem solving skills and demonstrate competency in working with other people. This will increase your employability and assist you in gaining employment in the future.

