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Programme Specification for BSc (Hons) Pharmacology

This document applies to Academic Year 2019/20 onwards

1.	**Awarding institution/body**	University of Worcester
2.	**Teaching institution**	University of Worcester
3.	**Programme accredited by**	N/A
4.	**Final award or awards**	BSc (Hons)
5.	**Programme title**	Pharmacology
6.	**Pathways available**	Single
7.	**Mode and/or site of delivery**	Standard taught programme at University of Worcester.
8.	**Mode of attendance and duration**	3 years full time.
9.	**UCAS Code**	B210
10.	**Subject Benchmark statement and/or professional body statement**	QAA Subject Benchmark Statement: Biomedical Sciences 2015 British Pharmacology Society's (BPS) Core Curriculum
11.	**Date of Programme Specification preparation/ revision**	January 2018 August 2018 AQU amendments October 2018 Level 4 amendments December 2018 AQU template amendments

12. Educational aims of the programme

The Honours degree programme in Pharmacology aims to enable students to develop the knowledge, practical and intellectual skills necessary for a career in pharmacology, along with the theoretical and philosophical underpinning required to support professionalism, independent thought, personal responsibility and decision making during a period of rapid change and increasing accountability. Pharmacologists study the mechanisms by which drugs interact with biochemical, cellular and physiological systems. Pharmacology graduates can go on to pursue careers in the NHS, academia or Bioscience/Pharmaceutical industries in clinical trials, in product management, or in areas such as patenting new drugs, marketing and medical information acting as the link between pharmaceutical companies and doctors and patients. Teaching and learning focuses on ensuring a thorough understanding of the subject, with an emphasis on practical skills, based on case studies and simulations of real life scenarios.

The educational aims of the programme are:

1. to enable students to understand the theoretical principles of drug action in the human body, sites and mechanisms of drug action, clinical use of drugs and principles of toxicology;
2. to give students a knowledge of the history of drug discovery and current developments in pharmacology, including commercial pressures and constraints;
3. to teach methodological and analytical principles and practice used in clinical drug trials and scientific pharmacological research;
4. to develop an awareness of industry standards and good practice, ethics, a responsibility for and a positive attitude towards Health and Safety, and the importance of pharmacology on public health;
5. to develop team working and leadership skills, as well as skills of time management and task prioritisation;

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6. to support students in the development of intellectual skills of critical evaluation, scientific analysis and synthesis of ideas in order for them to be able to optimise their thinking and reflection skills;
7. to foster a spirit of enquiry and scientific discipline to enable students to design and undertake an independent research project;
8. to develop a range of skills to enable students to communicate their ideas effectively and appropriately in a variety of media;
9. to develop personal and interpersonal skills; self-awareness, personal responsibility and reflection on the ethical, social and economic implications of professional decisions in pharmacology;
10. to develop highly motivated, employable students with the intellectual and practical skills necessary to succeed in a changing and challenging environment.

13. Intended learning outcomes and learning, teaching and assessment methods

Knowledge and Understanding

LO no.	On successful completion of the named award, students will be able to:	**Module Code/s**
1.	Demonstrate a detailed knowledge and understanding of the principles of drug action, metabolism and excretion in the human body, the basics of medicinal chemistry, the sites and mechanisms of drug action and the clinical use of drugs.	BIOS2500 BIOS3503
2.	Discuss the history of drug discovery, demonstrating a detailed knowledge and understanding of the importance and impact of pharmacology on society and public health and apply this understanding to current developments in pharmacology.	BIOS3501 BIOS3503
3.	Demonstrate an in-depth knowledge of the scientific methods and regulatory requirements used in clinical drug trials, to include scientific methodology, statistical analysis and interpretation of results.	BIOS2500 BIOS3500 BIOS3501
4.	Demonstrate an understanding of the principles that guide ethical decision making in the context of drug design and development, as well as human health and disease.	BIOS2400 BIOS3501 BIOS3503
5.	Critically evaluate current developments in pharmacology, as well as new and future avenues, analysing the commercial pressures and constraints on pharmacological developments.	BIOS2500 BIOS3501 BIOS3502

Cognitive and Intellectual skills

6.	Use skills of reflection, evaluation, critical thinking, problem solving and decision-making to support the effective management of practical skills.	BIOS2023 BIOS2106 BIOS3501
7.	Analyse and critically evaluate research evidence, information and data from a variety of sources in the context of current theory and practice, and use it to develop a research proposal.	BIOS3002
8.	Apply professional judgement and ethical considerations to solve problems, demonstrating independence of thought in the formulation, development and testing of hypotheses.	BIOS2400 BIOS3500 BIOS3503
9.	Reflect on own learning and practice to develop personally and professionally.	BIOS2500 BIOS3501 BIOS3502

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Skills and capabilities related to employability

10.	Use a wide range of laboratory and IT equipment to perform common *in vitro* laboratory techniques and simulation based activities and investigations in pharmacology, competently and in compliance with current good laboratory working practice, exercising personal responsibility for relevant legislation, health and safety and ethical issues.	BIOS2201 BIOS3002 BIOS3500
11.	Accurately collect, describe, manage and interpret scientific data from a range of sources, demonstrating skills of numeracy, data processing and scientific analysis.	BIOS2201 BIOS3002 BIOS3500
12.	Write clear and appropriately referenced laboratory and scientific reports.	BIOS2023 BIOS3500
13.	Design and conduct an independent research project with minimal supervision.	BIOS2400 BIOS3002
14.	Exercise professionalism and demonstrate personal responsibility for good working practices and decision making.	BIOS2106 BIOS3002 BIOS3502

Transferable/key skills

15	Demonstrate competence in a range of information management skills; for example, in written and verbal communication, the use of information technology in the workplace, using library resources.	BIOS2106 BIOS3002 BIOS3404
16	Work effectively with a wide range of individuals and groups and as part of a team, establishing professional and ethical relationships using a variety of means.	BIOS2106 BIOS3502
17	Demonstrate independent problem solving skills in a variety of theoretical and practical situations, the ability to work on one's own initiative, and manage one's own time to meet deadlines.	BIOS2400 BIOS3002
18	Reflect on, analyse and evaluate own academic, vocational and professional performance, taking responsibility for personal independent working and professional learning and development.	BIOS2500 BIOS3502
19	Understand career opportunities, manage change effectively and begin to plan a career path.	BIOS2500 BIOS3502

Practical skills for employment are also addressed through the Biosciences skills passport, where students on all levels of the course will have the practical skills they gain recorded.

Learning, teaching and assessment

The BSc Hons in Pharmacology aims to provide supportive, student-centred learning environments that acknowledge and respond to the diversity of student backgrounds and experiences. The structure of the course enables students to move towards increasing independence in their studies from level 4 to level 6 in line with the Framework for Higher Education Qualifications (FHEQ) and University policies for assessment and curriculum design. Level 4 modules offer students structured tutor support for their learning, whilst at level 5 this support becomes less structured, although the extent to

which this occurs varies with the difficulty of the task. At level 6, modules offer students opportunities for more independent learning, although specific tutor help will always be available. Module learning outcomes, and hence assessments will always be more demanding at level 6.

Teaching, assessment and private study are interlinked in that they are all aspects of each student's personal and academic development.

Students are taught through a combination of interactive workshops, lectures, seminars, laboratory practical sessions, practical activities, etc. Interactive workshops take a variety of formats and are intended to enable the application of learning through discussion and small group activities. Seminars enable the discussion and development of understanding of topics covered in lectures, and laboratory practical sessions are focused on developing subject specific skills and applied individual and group project work. The VLE and computer modelling software will be used extensively to support key areas of study.

In addition, meetings with personal academic tutors are scheduled on at least four occasions in the first year and three occasions in each of the other years of a course.

The University places emphasis on enabling students to develop the independent learning capabilities that will equip them for lifelong learning and future employment, as well as academic achievement. A mixture of independent study, teaching and academic support from Student Services and Library Services, and the personal academic tutoring system enables students to reflect on progress and build up a profile of skills, achievements and experiences that will help them to flourish and be successful.

The course employs a variety of assessment methods, for more details please see section 14 of this programme specification.

Contact time
In a typical week students will have around 16 contact hours of teaching. The precise contact hours will depend on the optional modules selected and in the final year there is normally slightly less contact time in order to do more independent study.

Typically class contact time will be structured around:

- Lectures
- Workshops
- Practical sessions
- Group activities

Independent self-study
In addition to the contact time, students are expected to undertake around 24 hours per week independent study, plus assessment preparation in the assessment period at the end of the semester. Typically, this will involve reading, watching selected videos, working through example problems, preparing assessments.

Independent learning is supported by a range of excellent learning facilities, including the Hive and library resources, the virtual learning environment, and extensive electronic learning resources.

Teaching staff
Students will be taught by a teaching team whose expertise and knowledge are closely matched to the content of the modules on the course. The team includes a range of expert lecturers (details of individuals can be found in the course handbook and on the School web pages), a team of professional clinical practitioners, and visiting employers.

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Teaching is informed by research and consultancy, and as of December 2017 eighty-five per cent of lecturers on biosciences courses have or are working towards a higher education teaching qualification and/or are Fellows of the Higher Education Academy.

Student skills
Students will be able to obtain a wide range of skills on this course, e.g. a range of subject-specific, professional and transferable skills appropriate to graduate employment and/or postgraduate study in Pharmacology.

The Biological Sciences tutors at the University of Worcester have developed a Personal Development Planning scheme based on QAA Biosciences / Biomedical Sciences graduate and transferable skills. It contains a number of elements which run from induction through to level 6 and is compulsory for all Biological Sciences students. It was developed with three main aims in mind: to help students to reflect on the skills that they need in order to attain the next step in their studies, to make more effective use of the opportunities provided by academic tutorials to give the necessary individual support and guidance, and to increase the students' employability. Each of the PDP skills is linked to appropriate assessments. Practical skills and attributes are also recognised in the PDP scheme in order to increase employability. For more information about PDP skills development, please see the Pharmacology programme student handbook.

Assessment
The course provides opportunities to test understanding and learning informally through the completion of practice or 'formative' assignments. Each module has one or more formal or 'summative' assessment which is graded and counts towards the overall module grade.

Assessment methods include exams, in-class tests, practical reports, group reports, oral presentations and academic posters.

The precise assessment requirements for an individual student in an academic year will vary according to the mandatory and optional modules taken, but a typical formal summative assessment pattern for each year of the course is:

Module	Practical Report / file / handbook	Written examination / test	Practical examination / test / assessment	Engage with PDP	Essay	Group report	Group presentation	Group poster presentation	Lay summary/case study file	Written report / Literature review	Oral presentation	Research proposal	Reflective report/diary	Interim review	Independent Study	Poster presentation	Action Plan	Completion of work experience and documentation
Percentage weighting of assessment																		
Level 4																		
BIOS 1010	50	50																
BIOS 1201	50	30	20	P/F														
BIOS 1205	50	50																
BIOS 1211	25	50						25										
BIOS 1500		50			50													
BIOS 1501		35	30							35								
Level 5																		

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BIOS 2023	50	50																
BIOS 2106	25	50		P/F			15		10									
BIOS 2201	30	45			25													
BIOS 2400		50										50						
BIOS 2500									50		20		30					
Level 6																		
BIOS 3002														P/F	90	10		
BIOS 3404		50								50								
BIOS 3500	50	50																
BIOS 3501		50											50					
BIOS 3502						40							30				10	
BIOS 3503		50														50		
BIOS 3003											60		20				20	P/F
BIOS 3113		50						25		25								
BIOS 3402		50														50		

14. Assessment strategy

The students have opportunities to develop the appropriate skills necessary for the particular assessment type used before summative assessment takes place. Extensive feedback is given on assessments and students are supported through the Academic Tutoring Programme for the course to reflect and act on this feedback in order to support their academic development.

Formative assessment is a key part of the learning process and, in this course, it takes a variety of forms including: peer marked formative laboratory report, formative multiple-choice examinations, regular formative clicker tests, formative practise for presentations, as well as more informal feedback on essays and reports.

As far as is possible the assessments have been spread throughout the modules. However, the skills and depth of understanding to be assessed take time to develop and consequently summative assessment deadlines do not generally occur in the first half the module. The range of assessment tasks used and their weightings, together with a calendar of submission dates, is shown in the course handbook.

All module guides contain detailed assignment briefs and grading criteria which are normally specific for that particular assignment. Study Skills, which form part of the extended induction for level 4 students as well as being incorporated into some modules, include sessions on how to make good use of this information.

15. Programme structures and requirements

An award map template is appended to this document. In order to ensure the criteria of the QAA subject benchmark statement for Biomedical Sciences (2015) and the British Pharmacological Society's Core Curriculum are met, all modules at level 4 and 5 are mandatory.

16. QAA and professional academic standards and quality

This award is located at level 6 of the FHEQ. The course has been developed with reference to the British Pharmacology Society's (BPS) Core Curriculum informed by QAA Subject Benchmark Statement Biomedical Sciences November 2015 as directed by the BPS which has been used to inform course outcomes and skills.

17. Support for students

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Pharmacology students experience a wide variety of learning and teaching methods detailed in 13.1 above and these are frequently reviewed and adapted in order to enhance the students' experience.
In addition to the University induction week, Pharmacology students have an induction programme extended throughout year one. This extended induction allows the necessary study skills to be developed at the most appropriate time for the students. Returning students at levels 5 and 6 also have induction sessions to support study skills and help prepare them for their continuing studies.
All students have an Academic Tutor who they see twice each semester and the requirement to do this is linked to a mandatory module. The tutorial sessions are structured to guide and support each student, on an individual basis, throughout their course and to help them to realise their potential. The Academic Tutors guide the students through completion of a Personal Development Plan related to the current British Pharmacology Society's (BPS) Core Curriculum to enable students to plan the most appropriate path through their course and to increase employability. All tutors have an open-door policy.

The Disability and Dyslexia Service (DDS) provides advice and support to students who have a disability, medical condition or specific learning difficulty, including dyslexia. The DDS also provides support and advice to other departments and individual staff on how to ensure the needs of individual students are met. For more details see:
http://www.worcester.ac.uk/student-services/index.htm and
http://www.worcester.ac.uk/student-services/disability-and-dyslexia.htm.

There is a strong emphasis on practical and laboratory work using specialist equipment.

Students have access to a Virtual Learning Environment (Blackboard Learning System) to provide module-specific material, documents, activities, videos etc.
Students are given the Pharmacology Course Handbook (published on an annual basis) to provide them with detailed course information, information on modules and options available, and details of how to access university support for their studies.
Students are also given detailed module guides which include planned teaching activity, attendance requirements, assessment brief, assessment criteria and resource lists.

18. Admissions

Admissions policy

We welcome applications from people of all ages and backgrounds with an interest in studying Pharmacology. The University aims to be accessible; it is committed to widening participation and encouraging diversity in the student population. The School of Science and the Environment works closely with central student support services, including the Admissions Office, the Disability and Dyslexia Service and the International team (student services), to support students from a variety of backgrounds. We actively encourage and welcome people from the widest range of economic and cultural backgrounds, and value the contribution of mature learners. Students entering via non-standard entry routes will be interviewed.

Entry requirements

The normal minimum entry requirement for undergraduate degree courses is the possession of 4 GCSEs (Grade C/4 or above) and a minimum of 2 A Levels (or equivalent Level 3 qualifications). The Pharmacology course requires A Level Biology, Human Biology or Chemistry and an A Level in another science, Maths or Statistics.

The current UCAS Tariff requirements for entry to this course are published in the prospectus and on the University website. BSc Hons Pharmacology Entry Requirements

See Admissions Policy for other acceptable qualifications.

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Alternative qualifications may be considered for entry to this course. See the Taught Courses Regulatory Framework (Section 2) for other acceptable qualifications.

The University will consider each application on its individual merits, including applications from candidates holding qualifications outside the UCAS Tariff, and those awarded by professional bodies and overseas qualifications (including the European Baccalaureate). Non-standard entry via the exploratory essay route is also available.

International students may apply for this course through the University of Worcester International College (UWIC) programme. Students who successfully complete UWIC Stage 1 will progress to UWIC Stage 2 Integrated Level 4 Programme which involves completing 120 credits of University of Worcester modules as set out in the award map in section 15, plus a year-long study skills programme with UWIC. Students will be required to successfully complete the UWIC study skills programme in addition to meeting the University requirements for progression to Level 5.

Mature Students:
We welcome applicants who hold alternative qualifications/experience and mature students who can demonstrate the ability to benefit from the course and show their potential to complete the course successfully. Although recent preparatory study at an appropriate level (e.g. an Access to Higher Education Diploma) is recommended, students may be considered on the basis of prior evidenced professional/work experience and/or other assessment procedures, and the assessment of personal suitability. University Admissions office staff can offer information, advice and guidance on this process.

Recognition of Prior Learning
Details of acceptable level 3 qualifications, policy in relation to mature students or applicants with few or no formal qualifications can be found in the prospectus or on the University webpages. Information on eligibility for recognition of prior learning for the purposes of entry or advanced standing is also available from the University webpages or from the Registry Admissions Office (01905 855111).
Further information on Recognition of Prior Learning can be found at
http://www.worcester.ac.uk/registryservices/941.htm

Admissions procedures
Applicants are considered on the basis of their UCAS application forms. It is not currently standard practice to interview candidates but those entering via non-standard entry routes will be interviewed. Those who accept our offer will be invited to an Applicant Day to experience studying at Worcester.
Full-time applicants apply through UCAS W80 B210. Part-time applicants apply directly to University of Worcester.

Admissions/selection criteria:
Offers are made in line with the entry requirements specified above and demonstration via the application form of a strong interest in Pharmacology. The reference you give as part of your application is also taken into account.

19. Regulation of assessment

The course operates under the University's Taught Courses Regulatory Framework

Requirements to pass modules

- Modules are assessed using a variety of assessment activities which are detailed in the module specifications

- The minimum pass mark is D- for each module
- Students are required to submit all items of assessment in order to pass a module, and in some modules, a pass mark in each item of assessment may be required
- Some modules have attendance requirements
- Full details of the assessment requirements for a module, including the assessment criteria, are published in the module outline

Submission of assessment items

- Students who submit course work late but within 5 days of the due date will have work marked, but the grade will be capped at D- unless an application for mitigating circumstances is accepted
- Students who submit work later than 5 days but within 14 days of the due date will not have work marked unless they have submitted a valid claim of mitigating circumstances
- For full details of submission regulations please see the Taught Courses Regulatory Framework

Retrieval of failure

- Students are entitled to resit failed assessment items for any module that is awarded a fail grade, unless the failure was due to non-attendance
- Reassessment items that are passed are graded at D-
- If a student is unsuccessful in the reassessment, they have the right to retake the module (or, in some circumstances, take an alternative module); the module grade for a re-taken module is capped at D-
- A student will be notified of the reassessment opportunities in the results notification issued via the secure student portal (SOLE). It is the student's responsibility to be aware of and comply with any reasessments.

Requirements for Progression

- Students at Level 4 will be permitted to progress to Level 5 when they have passed at least 90 credits at Level 4
- Students at Level 5 will be permitted to progress to Level 6 when they have passed at least 210 credits, including at least 90 credits at Level 5
- A student who fails 90 credits or more due to non-submission will be required to withdraw from the University
- For students following the UWIC pathway see section 18 above.

Requirements for Awards

Award	Requirement
Certificate of Higher Education Cert HE Pharmacology	In order to be eligible for the exit award of Certificate in Higher Education in Pharmacology, a student must have passed at least 120 credits in total including the mandatory modules for level 4 of the award as specified on the award map.
Diploma of Higher Education DipHE Pharmacology	In order to be eligible for the exit award of Diploma in Higher Education in Pharmacology, a student must have passed at least 240 credits in total including the mandatory modules for level 4 and level 5 of the award as specified on the award map.
Degree (non-honours) Pharmacology	In order to be eligible for the award of a non-honours degree, as student must have passed a minimum of 300 credits with at least 90 credits at Level 5 or higher and a minimum of 60 credits at Level 6, including the mandatory modules for Level 5 and at

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	least 60 credits from the mandatory taught modules at Level 6 of the award (not including the Independent Study module).
Degree with honours Pharmacology	Passed a minimum of 360 credits with at least 90 credits at Level 5 or higher and a minimum of 120 credits at Level 6, as specified on the award map.

Classification
The honours classification will be determined by whichever of the following two methods results in the higher classification.

- Classification determined on the profile of the best grades from 60 credits attained at Level 5 and the best grades from 120 credits at Level 6. Level 5 and Level 6 grades count equally in the profile.

- Classification determined on the profile of the best grades from 120 credits attained at Level 6 only.

For further information on honours degree classification, see the Taught Courses Regulatory Framework.

20. Graduate destinations, employability and links with employers

Graduate destinations
Pharmacology graduates can work as analytical chemists, biomedical scientists and healthcare scientists as well as pharmacologists. In addition, they can work in research careers in hospitals, academia, industry and the scientific civil service. Britain is a world leader in pharmaceuticals and large sums are invested in research and development. As well as initial drug discovery, pharmacologists can also work in clinical trials, manufacturing, patenting and media consultancy as well as areas such as marketing and medical information, acting as a link between pharmaceutical companies, doctors and patients. Employers of pharmacology graduates include the civil service, Department of Health, Intellectual Property Office, National Health Service, and pharmaceutical and biotechnology companies.

Student employability
Careers and employability is embedded in the curriculum at all three levels. At Level 4, students are introduced to the Careers Service in BIOS 1201, Cell Biology, as part of the Science PDP scheme. Students are given the opportunity in almost every module to develop practical and work-related skills (see PDP table in student handbook) and at Level 4 module BIOS1501 Scientific Support Skills enables students to develop a range of skills required by employers in the biosciences industries. BIOS2500, Introduction to Pharmacokinetics and Pharmacodynamics includes an exercise reflecting on different possible career pathways. The Level 6 module BIOS3003 Work Experience gives students the option to undertake a period of work experience in the pharmacology sphere of employment to enhance their employability. Students will also record their practical skills in the Technical Skills Passport as a record to show prospective employers and careers advice is given at all levels of the course.

Links with employers
The University has a strong track record of working closely with employers and local NHS Acute/ Community Trusts and with the Independent sector. We have an excellent reputation for providing employers with professional, well prepared and well-motivated students. Organisations such as Sequani, QinetiQ (Malvern), Malvern Cosmecuetics, Severn Biotech and Worcester Bosch have all expressed an interest in supporting the

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development and delivery of science-based subjects, which will bring employer focus to the pharmacology degree.

The School of Science and the Environment has developed a Biological Sciences Employers Liaison Group to ensure the curriculum for Biological Science related courses are fit for purpose and meet the needs of the sector, at the same time as maximising student opportunities for work experience and employment. These employers (including local Hospital Trusts and private sector organisations) support both course development and delivery by informing course design, ensuring teaching staff are aware of skills and competencies needed, by providing opportunities for student workplace visits and placements, and by giving talks and demonstrations to students.

In addition, the British Pharmacological Society has been consulted and their 'Undergraduate Pharmacology Core Curriculum' has been used in the course design process.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in associated course documentation e.g. course handbooks, module outlines and module specifications.

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Award map template for: Single Honours (BSc (Hons) Pharmacology) at Levels 4, 5 and 6

Course Title: BSc Honours Pharmacology

Level 4					
Module Code	**Module Title**	**Credits** (Number)	**Status** (Mandatory (M) or Optional (O)) **Single Hons**	**Pre-requisites** (Code of Module required)	**Co-requisites/ exclusions and other notes***
BIOS1010	Human Anatomy and Physiology	15	M	N/A	N/A
BIOS1201	Cell Biology	30	M	N/A	N/A
BIOS1205	Introduction to Biological Chemistry	15	M	N/A	N/A
BIOS1203	Health and Disease	30	O	N/A	N/A
BIOS1500	Introduction to Pharmacology	15	M	N/A	N/A
BIOS1501	Scientific Support Skills	15	M	N/A	N/A
LANG	Optional modules offered by the Language Centre	15/30	O	N/A	N/A

Single Honours Requirements at Level 4

Single Honours students must take 120 credits in total, drawn from the table above to include all mandatory modules and 30 credits of optional modules optional modules. Optional modules can include up to 30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: http://www.worcester.ac.uk/your-home/language-centre-module-options.html.

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Level 5					
Module Code	**Module Title**	**Credits** (Number)	**Status** (Mandatory (M) or Optional (O)) **Single Hons**	**Pre-requisites** (Code of Module required)	**Co-requisites/ exclusions and other notes***
BIOS2023	Microbiology	15	M	BIOS1201	-
BIOS2106	Human Systems Physiology	30	M	BIOS1201 & BIOS 1010 or BIOS1211	None
BIOS2201	Molecular and Cellular Biology	30	M	BIOS1201	Excl: BIOS2100 & BIOS2202
BIOS2400	Project Development	15	M	None	None
BIOS2500	How Drugs Act: An introduction to Pharmacokinetics and Pharmacodynamics	30	M	BIOS1205 BIOS1500	None

Single Honours Requirements at Level 5

Single Honours students must take all mandatory modules from the table above totalling 120 credits.

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Level 6					
Module Code	**Module Title**	**Credits** (Number)	**Status** (Mandatory (M) or Optional (O)) **Single Hons**	**Pre-requisites** (Code of Module required)	**Co-requisites/ exclusions and other notes***
BIOS3001/2	Independent Study	30	M	BIOS2400	None
BIOS3404	Neuroendocrine Physiology and Biochemistry	15	M	None	None
BIOS3500	Pharmaco-informatics	15	M	None	None
BIOS3501	Drug Discovery, Design and Development	15	M	BIOS2500	None
BIOS3502	Pharmacology and the Immune System	15	M	BIOS2500	None
BIOS3503	Pharmacological Toxicology	15	M	BIOS2500	None
BIOS3003	Work Experience	15	O	None	Excl: BIOS2003
BIOS3113	Biochemistry of Cancer	15	O	BIOS2201	None
BIOS3402	Diseases of the Ageing Brain	15	O	BIOS2106	Co-Req: BIOS3404

Single Honours Requirements at Level 6

Single Honours students must take 120 credits in total drawn from the table above to include all mandatory modules.