**University of Huddersfield**

**Programme Specification**

## *This document does not form part of the student contract*

|  |  |  |
| --- | --- | --- |
| **1.** | **Awarding institution** | University of Huddersfield |
| **2.** | **Teaching institution** | University of Huddersfield |
| **3.** | **School and Department** | Applied Sciences  Department of Biological and Geographical Sciences |
| **4.** | **Course accredited by** | Royal Society of Biology January 2019 (General) and June 2020 (Advanced). |
| **5.** | **Mode of Delivery** | Full-time |
| **6.** | **Final Award** | BSc(Hons) |
| **7.** | **Course Title** | Pharmacology/with Supervised Work Experience  Pharmacology with Supervised Research Placement |
| **8.** | **UCAS Code** | B210  TBC |
| **9.** | **Subject benchmark statement** | Biomedical Sciences (2019) |
| **10.** | **Date of Programme Specification Approval** | June 2016 Revalidated January 2019  Revised June 2020 |

**11. Educational Aims of the Courses**

The aims are:

* To develop creativity and innovation.
* To provide a structured, progressive and thematic training in areas of pharmacology which will provide students with a knowledge and understanding appropriate for subject-specific graduate employment.
* To prepare graduates for careers with a wide variety of employers such as pharmaceutical and biotechnological industries, government agencies and hospitals by delivering a curriculum that is relevant to the needs of society.
* To develop key transferable skills to prepare students for more general graduate employment.
* To develop the intellectual and practical skills necessary for progression to postgraduate research and training.
* To encourage academic curiosity which will prepare students for lifelong learning by challenging the students’ attitudes and approaches to learning in order to enable them to fulfil their potential, and to promote independent learning.
* To offer a range of core and some optional modules which allow students to specialise in particular areas of pharmacology.
* To offer all students the opportunity to conduct a substantial research project.
* To contribute to the University’s commitment to widening access by recruiting students of different ethnic origins and with a wide variety of educational backgrounds and to accommodate a spectrum of abilities and prior knowledge.
* To operate within a caring and supportive environment in which students can develop confidence in their own abilities.

**12. Intended Learning Outcomes**

The learning outcomes for this programme have been derived directly from the Quality Assurance Agency Biomedical Sciences Benchmark Statement (2019) and map to the module content in the matrix at the end of the document to guarantee compliance. The following sections have been used:

# Section 4 Graduate and key transferable skills.

# Section 5 Core biomedical sciences knowledge, understanding and skills.

# Section 6 Pharmacology.

**Section 4 Graduate and key transferable skills**

**Intellectual skills**

Pharmacology graduates should be able to:

1. recognise and apply subject-specific theories, paradigms, concepts or principles (for example, the relationship between genes and proteins, or the nature of essential similarities and differences between prokaryote and eukaryote cells).
2. make evidence-based decisions.
3. obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses.
4. apply subject knowledge and understanding to address familiar and unfamiliar problems.
5. recognise the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct.

**Practical and professional skills**

Pharmacology graduates should be able to:

1. demonstrate competence in the basic experimental skills appropriate to the subject(s) studied.
2. demonstrate an awareness and knowledge of quality assurance and quality control principles as part of an understanding of the need for quality management systems and a culture of continued quality improvements of relevance to the subject(s) of study.
3. plan an experiment in terms of hypothesis, sample, test or observation, controls, observable outcomes and statistical analysis.
4. conduct and report on investigations, which may involve primary or secondary data (for example from a survey database). These data may be obtained through individual or group projects in the appropriate subject.
5. obtain, record, collate and analyse data using appropriate practical techniques, working individually or in a group, as is most appropriate for the subject.
6. undertake practical investigations in a responsible, safe and ethical manner,

paying due attention to risk assessment, relevant health and safety regulations, ethical issues, procedures for obtaining ethical permission and informed consent and issues relating to animal welfare and showing sensitivity to the potential impact of any investigations on the study and on other stakeholders.

**Analytical, data interpretation and problem solving skills**

Pharmacology graduates should be able to:

1. receive and respond to a variety of sources of information: textual, numerical, verbal, graphical.
2. carry out sample selection; record and analyse data in the laboratory or elsewhere; ensure validity, accuracy, calibration, precision, replicability and highlight uncertainty during collection.
3. prepare, process, interpret and present data, using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programmes for presenting data visually.
4. demonstrate an understanding of statistical significance and statistical power.
5. solve problems by a variety of methods, including the use of appropriate software.
6. evaluate published claims by interpreting methodology and experimental data, and make judgements about the strength of the evidence.

**Communication, presentation and information technology skills**

Pharmacology graduates should be able to:

1. communicate about their subject appropriately to a variety of audiences using a range of formats and approaches and appropriate scientific language.
2. cite and reference work in an appropriate manner, including the avoidance of plagiarism.
3. use a range of media critically as a means of communication and a source of information.

**Interpersonal and teamwork skills**

Pharmacology graduates should be able to:

1. identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles, in particular those being developed through practical, laboratory and/or field studies.
2. recognise and respect the views and opinions of other team members.
3. use negotiating skills.
4. evaluate their own performance as an individual and a team member.
5. evaluate the performance of others.
6. develop an appreciation of the interdisciplinary nature of science and of the validity of different points of view.

**Self-management and professional development skills**

Pharmacology graduates should be able to:

1. develop the skills necessary for self-managed and lifelong learning (for example working independently, time management, organisational, enterprise and knowledge transfer skills).
2. build on knowledge and understanding of the role and impact of intellectual property (IP) within a research environment.
3. identify and work towards targets for personal, academic, professional and career development.
4. develop an adaptable, flexible and effective approach to study and work.

**Section 5 Core biomedical sciences knowledge, understanding and skills**

Approaches to study and forms of subject knowledge likely to be common to all biomedical sciences degree programmes include:

1. a broadly based core covering the major elements defined by the particular

programme and providing the wider context required for the subject area, together with specialised in-depth study (which may be career related) of some aspects of the subject area. Whatever the degree programme, there is a need for an interdisciplinary and (where appropriate) multidisciplinary approach in advancing knowledge and understanding of the processes and mechanisms of life, from the molecular and cellular levels through to those of the whole body and the environment in which a person lives.

1. engagement with the essential facts, major concepts, principles and theories associated with the chosen subject.
2. competence in the basic experimental and/or survey skills appropriate to the subject under study.
3. understanding of information and data within the context of biomedical sciences, accompanied by critical analysis and assessment to enable understanding of the subject area as a coherent whole.
4. familiarity with terminology, nomenclature and disease classification systems, as appropriate.
5. methods of acquiring, interpreting and analysing biomedical sciences information with a critical understanding of the appropriate contexts for its use through the study of texts, original papers, reports and data sets.
6. awareness of the contribution of their subject to the development of knowledge about the complexity of human health and disease.
7. knowledge of a range of communication techniques and methodologies relevant to the particular subject, including data analysis, information technology and the use of statistics.
8. engagement with current developments in the biomedical sciences and their applications, and the philosophical and ethical issues involved.
9. awareness of the contribution of biomedical sciences to debate and controversies, and how this knowledge and understanding forms the basis for informed concern about the quality and sustainability of health and well-being**.**
10. awareness of intellectual property (IP) and how scientific advances can be secured and progressed by the application of intellectual property rights (IPRs).
11. understanding of the applicability of the biomedical sciences to the careers to which graduates will be progressing.

Students working to acquire graduate and professional attributes appropriate to the biomedical sciences need to recognise that much of what they are taught is likely to change in the future, particularly in the light of continuing scientific advances.

The attributes include:

1. an appreciation of the complexity and diversity of life processes.
2. the ability to read and use appropriate literature with a full and critical understanding, while addressing such questions as content, context, aims, objectives, experimental design, methodology, data interpretation and application.
3. the capacity to give a clear and accurate account of a subject, the ability to marshal arguments, mediate and debate both with specialists and non-specialists, using appropriate scientific language.
4. critical and analytical skills including a recognition that statements should be tested and that evidence is subject to assessment and critical evaluation.
5. the ability to employ a variety of methods of study in investigating, recording and analysing material.
6. the ability to think independently, set tasks and solve problems.
7. an understanding of how to identify, protect, and exploit intellectual property (IP) as part of the scientific innovation process.

Whatever the precise nature of their specific programme, graduates in the biomedical sciences are expected to have a broad basic understanding of how cells, organs and systems function in the human body in health and disease, the common causes and effects of disease, the body's defence mechanisms and approaches to treatment. These form the foundation for the more in-depth and advanced knowledge specific to their particular programme's focus or specialism within the biomedical sciences (see section 6).

The Pharmacology Programme will include the following:

1. Human anatomy and physiology: the structure, function, neurological and hormonal control of the human body, its component parts and major systems (musculoskeletal, circulatory, respiratory, digestive, renal, urogenital, nervous, endocrine) and their relationship to each other.
2. Cell biology: the structure and function of prokaryotic and eukaryotic cells; the cell as the fundamental unit of life; cell division, cell cycle, stem cells, cell specialisation and cooperation.
3. Biochemistry: key chemical principles relevant to biological systems, the structure and function of biological molecules and the biochemistry of processes which support life including cellular metabolism and its control.
4. Genetics, genomics and human variation: the structure and function of genes, the principles of their inheritance, genetic disorders with particular biomedical significance, evolution and population biology.
5. Molecular biology: the structure and function of biologically important molecules including DNA, RNA and proteins and the molecular events that govern cell function. Molecular biology overlaps with biochemistry, genetics and cell biology.
6. The nature of disease and fundamentals of pathology to include the development of age-related diseases and the impact of lifestyle upon health and disease.
7. Bioinformatics and systems biology: the computation of high volumes of biological data and the properties of a network of interacting components in a system, as well as the components themselves, including an appreciation of the algorithms to decipher biological relationships.
8. Microbiology: the structure, physiology, biochemistry, identification, classification and control of micro-organisms, including the roles of normal flora.
9. Immunology: acute and chronic inflammation, structure, function and mechanisms of action of the components of the immune system; innate and acquired immunity.
10. Pharmacology: the importance of drug actions in the living organism for prevention and treatment of disease; the principles of drug-receptor interactions and the relationship between dose and response, routes of administration, types of drugs, how drugs are metabolised and eliminated from the body, toxic effects; approaches for drug discovery; personalised medicine/precision medical science.
11. Developmental biology, which may include topics such as human life cycles, ageing, stem cells and regenerative medicine.
12. Physics and chemistry sufficient to support understanding of biochemical and biophysical processes and instrumentation.

**Section 6. Subject Specific knowledge, understanding and skills: Pharmacology**

Pharmacology is the science of drugs, their chemical and physical properties, their actions on living tissues and systems, and their effects on health and disease.

Pharmacologists have played a crucial role in the discovery of hundreds of chemicals used in the treatment of disease and the relief of human and animal suffering. The scientific foundations that underpin modern pharmacology include the areas outlined in sections 4 and 5. In addition, pharmacologists have extended understanding of mechanisms of drug action, drug discovery, safety and efficacy. In designing degree programmes staff are encouraged to seek an integrated approach to pharmacology teaching and assessment that embeds practical and transferable skills into the investigation of pharmacological principles.

In addition to those areas outlined in sections 4 and 5, a pharmacology graduate will have the following core knowledge, understanding and skills:

1. Pharmacodynamics (what drugs do to the body) in health and disease, including:molecular targets of drug action: receptors, enzymes, ion channels, transporters and others drug-receptor relationships, including agonism (full, partial, biased and inverse), antagonism (competitive and non-competitive), and an understanding of how these properties relate to drug specificity, selectivity and potency the main molecular targets for drugs, knowledge of their structure and function, and the ways in which drugs alter this function at the molecular level changes in receptor signalling caused by drug action, including mechanisms of desensitisation and tolerancehow drug action affects the major organ systems of the body as well as drug effects on cell function, cell proliferation and cell death emerging technologies in personalised medicine (for example small molecular inhibitors, antisense therapy, biopharmaceuticals, novel drug delivery systems). **SFB1011, SFB1012, SIB2012, SHB4015, SHB4018**
2. Pharmacokinetics (what the body does to drugs), including absorption, distribution, biotransformation and excretion **SFB1011, SIB2012, SHB4015, SHB4018**
3. Individual variation in drug action and toxicity for example: the effects of ethnicity, gender, age, pregnancy, genetic factors, disease and drug-drug interactions, in addition to the potential for allergy and drug addiction **SHB4018**
4. Pharmacological methods, including knowledge and/or practical experience of: drug concentration/dose-response relationships, experimental methods and techniques applied to pharmacology (for example bioassays, receptor binding, receptor cloning, recombinant proteins for therapy, animal models of disease, genetic manipulation of cells and animals and their uses), ethical and legal issues pertaining to the use of animals in research, as outlined in the Animal (Scientific Procedures) Act 1986, with knowledge of approaches to replace, refine and reduce their use. **SFB1011, SIB2012, SFB1012, SHB4001, SHB4018**
5. Drug discovery and development, including toxicology, with knowledge of the

regulatory processes that monitor drug quality, safety, and effectiveness. **SHB4018**

1. Principles of clinical trials, for example: the avoidance of bias, the effect of sample size, the placebo effect, the concept of therapeutic index which relies upon the integration of pharmacodynamics, pharmacokinetics, toxicology and other safety information to contribute to an understanding of the risk associated with a drug, as well as the ethical issues surrounding the use of human study participants and human tissues. **SHB4015, SHB4018**

**Pharmacology with Research Placement**

In addition to the above, students in the “with Research Placement” course will also have advanced knowledge and skills to carry out independent research projects.

**13. Course Structures and Requirements, Levels, Modules, Credits and Awards**

**13.1** Comprehensive documentation giving module details, course structures and related matters is available online.

The Pharmacology course is studied over three years with an option to extend this by a further year through undertaking a supervised placement in a work-based environment (SSB3001).

The Pharmacology with Research Placement course is studied over three years with an option to extend this by a further year through undertaking a supervised placement in a research-based environment (SSB3003). If students do not take (or do not complete) the research-based placement, they will transfer to the Pharmacology course.

The placement is regarded as especially valuable but it is recognised that it will not be suitable for all students and students can also opt for a full time three-year route. Study is undertaken at three levels, one for each year of University-based study. The course is based on six 20-credit modules per year, with the exception of the Final Year, which includes the 40-credit Research Project and four 20-credit modules.

All assessments, including examinations, are set and marked by academic staff of the University. Assessment results are considered by the Biological Sciences Course Assessment Board (CAB), which includes the staff responsible for delivering the modules and the External Examiners. The Board determines degree classification based on a student’s best 100 credits of performance in Year Two and the Final Year, with the latter weighted by a factor of two.

**13.2 Course Structure**

The Pharmacology course may include a work-based supervised placement year, between Year Two and the Final Year (SSB3001).

The Pharmacology with Research Placement includes a supervised research-based placement year (SSB3003). Stipulations on the nature of the placement and pre-requisites are described in the SSB3003 module specification document.

All of the modules are Core modules unless listed under ‘Option’ in the Course structure shown below.  SFB1010 (Research Skills), SFB1004 (Biochemistry 1), SIB2001 (Research Skills 2) and SHB4001 (Research Project) are compulsory modules.

Compulsory modules cannot be awarded a condoned pass and so must be passed with a score over 40%. See Regulations of Awards for details of progression rules:

<https://www.hud.ac.uk/policies/registry/awards-taught/>

**Year 1 Full Time - Foundation Level**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Level** | **Module Code** | **Module Title** | **Credits** | **Module Type** |
| F (FHEQ 4) | SFB1010 | Research Skills | 20 | Compulsory |
| F (FHEQ 4) | SFB1003 | Molecular & Cellular Biology | 20 | Core |
| F (FHEQ 4) | SFB1004 | Biochemistry 1 | 20 | Compulsory |
| F (FHEQ 4) | SFB1006 | Physiology 1 | 20 | Core |
| F (FHEQ 4) | SFB1011 | Medical Pharmacology 1 | 20 | Core |
| F (FHEQ 4) | SFB1012 | Pharmaceutical Chemistry 1 | 20 | Core |

**Year 2 Full Time - Intermediate Level**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Level** | **Module Code** | **Module Title** | **Credits** | **Module Type** |
| I (FHEQ 5) | SIB2001 | Research Skills 2 | 20 | Compulsory |
| I (FHEQ 5) | SIB2012 | Molecular Aspects of Drug Action | 20 | Core |
| I (FHEQ 5) | SIB2002 | Cell Biology | 20 | Core |
| I (FHEQ 5) | SIB2006 | Physiology 2 | 20 | Core |
|  | SIB2013 | Pharmaceutics and Formulation | 20 | Core |
|  | **Option (x1)** |  |  |  |
| I (FHEQ 5)  I (FHEQ 5) | SIB2015  ***Or***  SIB2016 | Infectious Diseases and Therapeutics  Epidemiology and Public Health | 20  20 | Optional  Optional |

**Year 3 Work or Research Placement**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I (FHEQ 5) | SSB3001 | Optional Supervised Work Experience | 120 | Optional |
| I (FHEQ 5) | SSB3003 | Optional Supervised Research Experience | 120 | Optional |

**Final Year**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Level** | **Module Code** | **Module Title** | **Credits** | **Module Type** |
| H (FHEQ 6) | SHB4001 | Research Project | 40 | Compulsory |
| H (FHEQ 6) | SHB4015 | Medical Pharmacology III | 20 | Core |
| H (FHEQ 6) | SHB4018 | Innovations of Drug Design and Development | 20 | Core |
| H (FHEQ 6) | SHB4017 | Pharmaceutical Formulation and Drug Analysis | 20 | Core |
| H (FHEQ 6) | **Option** (x1) | | | |
| H (FHEQ 6)  H (FHEQ 6)  H (FHEQ 6)  H (FHEQ 6) | SHB4006  ***Or***  SHB4012  ***Or***  SHB4019  ***Or***  SHB4007 | Advanced Physiology  Immunology and Infection  Mechanisms and Pathology of Chronic Disease  Medical Genetics | 20  20  20  20 | Optional  Optional  Optional  Optional |

**13.3** **Interim Awards**

Students who are unable, or do not wish, to complete the Honours programme are able to gain named intermediate awards determined by the number and type of credits as follows:

Certificate of Higher Education 120 “F” credits

Diploma of Higher Education 120 “F” credits + 120 “I” credits

BSc Pharmacology 120 “F” credits + 180 “I”/”H” credits (at least 60 “H” credits)

At the discretion of the CAB a named ordinary degree may be awarded as an alternative to BSc Pharmacology, providing an appropriate combination of ‘H’ level modules has been passed.

**14. Teaching, Learning and Assessment**

The course ensures that the intended learning outcomes can be achieved by:

1. providing a coherent education with a high degree of currency in the chosen specialism

1. delivering a curriculum informed by research and scholarly activity
2. delivering a curriculum informed by feedback from employers
3. providing a curriculum delivered by staff who engage in peer observation of teaching and participate in an annual personal development review
4. including modules on specialist topics relevant to the field
5. having a flexible structure, which caters for a diversity of abilities
6. providing experience of carrying out a wide range of laboratory procedures using modern equipment
7. incorporating modules with a variety of types of teaching, learning and assessment
8. providing modules that encourage students to think and work independently, culminating in a research project in the final year
9. providing assessments that encourage students to work in teams
10. ensuring the availability of support and guidance throughout the students’ education by allocating a personal tutor to each of them
11. providing students with comprehensive feedback on their progress throughout their course
12. developing progressively the students’ personal skills
13. providing at all stages of the course a structured and supported process that enables students to reflect upon their learning, performance and achievement, and to plan their personal, educational and career development
14. offering the opportunity of a year’s work placement
15. making available expert careers guidance

**15. Support for Students and their Learning**

**15.1** Support for students undertaking the courses operates at University, School and Course level as follows:

**15.2 University Level**

Central to the provision of student support are **Student Services**. The range of services they offer include:

## 15.2.2 Wellbeing and Disability Services

* [Counselling](http://www.hud.ac.uk/wellbeing/studentcounselling/)
* [Back on Track](http://www.hud.ac.uk/wellbeing/back-on-track/)
* [Disability Services](http://www.hud.ac.uk/disability-services/)
* [Drop in (Counselling and Wellbeing)](http://www.hud.ac.uk/wellbeing/)
* [The Faith Centre](http://www.hud.ac.uk/faith-centre/)
* [Getting help](http://www.hud.ac.uk/wellbeing/needhelpwithaproblem/)
* [Group workshops and courses](http://www.hud.ac.uk/wellbeing/needhelpwithaproblem/groupworkshops/)
* [Hate Crime Reporting Centre](http://www.hud.ac.uk/wellbeing/hatecrimereporting/)
* Help for suspended students
* [Self help](http://www.hud.ac.uk/wellbeing/needhelpwithaproblem/selfhelp/)
* [Student parents](http://www.hud.ac.uk/wellbeing/studentparents/)
* [Student wellbeing](http://www.hud.ac.uk/wellbeing/)
* [Welfare support](http://www.hud.ac.uk/wellbeing/needhelpwithaproblem/studentwelfare/)
* [University Health Centre](http://www.universityhealthhuddersfield.co.uk/)
* Big White Wall

More information on the range of student services can be found on their website at: <http://students.hud.ac.uk/wellbeing-disability-services/disabilityservices>

**15.2.3 Careers and Employability Service**

[Careers and Employability Service](https://students.hud.ac.uk/opportunities/careers/) including Jobshop

An integral part of the students Personal development and careers support is provided by the University’s Global Professional Award (GPA). This CMI accredited course runs alongside the academic modules and integrates aspects of well-being, career planning and global awareness.

**15.2.4 The Student Finance Office** provides:

* Information and guidance regarding possible sources of funding for all courses in the University.
* Budgeting advice to discuss a variety of options and strategies in order to manage on a budget.
* Facilities for the billing and payment of income to be collected by the University.
* Debt advice via personal and confidential sessions is available from trained staff along with mediation and resolution.
* Further information can be found on their website at: <http://www.hud.ac.uk/students/finance>

**15.2.5** **Computing services** provide induction and ongoing support for all students. More information on the range of computing services can be found on their website at:

<http://students.hud.ac.uk/it/>

**15.2.6 Library** **Services** provide induction and ongoing support for all students. More information on the range of library services can be found on their website at: <http://www.hud.ac.uk/library/>

**15.2.7** [**Students’ Union**](https://www.huddersfield.su/)

**15.2.8** [**International Office**](https://www.hud.ac.uk/international/)provides help and support for all overseas students

**15.2.9** [**Accommodation**](https://www.hud.ac.uk/uni-life/accommodation/)

**15.2.10** [**Sports facilities**](https://sport.hud.ac.uk/)

**15.3 School Level**

The School of Applied Sciences provides additional student support using a variety of approaches:

* + 1. **Induction Week**
    2. **Personal Academic Tutor (PAT)** assigned to each student who maintains regular contact with the student throughout each academic session, especially at key times of the year for Personal Development Planning (PDP)
    3. **PDP** meetings
    4. **Support and Guidance Officers** work with the University Student Support systems to provide pastoral support as required.
    5. **School Student Support Office** (Room JPGS/25) for course enquiries.
    6. **Academic Skills tutors** can give one to one support to students requiring help with study skills.

**15.3.7** Student attendance is monitored in accordance with the University regulations.

**15.4 Course Level**

At course level support is provided by:

15.4.1 **Flying Start** is a key part of all Biology courses. This is a short and intensive induction programme of lectures, laboratory practicals, problem solving sessions, group work and social activities with several objectives and aims: to build the student community by building social cohesion within the cohort and by meeting with all members of staff within the Department; to familiarize the students with good laboratory practice, local H&S procedures and build responsibility within the cohort; to demonstrate learning strategy and build clear expectations of rigour and self-discipline amongst the cohort particularly with respect to independent study, library use and problem solving individually and in set groups. The programme also covers key elements of biodiversity and the concept of evolution by natural selection through a tutorial and problem solving session involving small group work, library research and then feedback from the groups on a specific problem in biodiversity and evolution.

* + 1. Students will be supported through academic mentoring
    2. Year/Module Tutors are available to help with module-specific academic problems.
    3. Supporting documentation is provided online in the form of Course Handbooks, Module Handbooks, and Programme and Module specifications.
    4. [**Brightspace**](https://brightspace.hud.ac.uk/d2l/login) virtual learning environment.
    5. Specialised computing laboratories and science laboratories

**15.4.7** Student e-mail and access to teaching staff including the Head of Department and the Course Leader.

**15.4.8** Supervised Work Experience (SWE) Students who take the optional SWE year are supported by the SWE Tutor and the Placement and Outreach Administrator. Guidance in the preparation of CVs, letters of application and interview techniques is available. Students are supervised by visits during the placement period. The Department of Biological Sciences has a long tradition of support for placing SWE students with major employers. These include The Wellcome Trust at The Sanger Institute, Astra Zeneca Pharmaceuticals, Syngenta, Avecia, GlaxoWellcome, Pfizer, EliLily, Covance, Anthony Nolan Bone Marrow Trust the LIGHT and LIMM Institutes at Leeds and internal placements at the University of Huddersfield.

**16. Criteria for Admission**

**16.1** The University of Huddersfield seeks and encourages applicants in order to widen participation, improve access and apply the principles of equal opportunities. We provide support for applicants who require additional assistance in order to select the right course of study and make a successful transition to studying at University. We encourage local, national and international applications. Further information for International Students can be found on: <http://www.hud.ac.uk/international>

If you were educated outside the UK, you are required to have International English Language Testing System (IELTS) at a score of 6.0 with a minimum score of 6.0 in writing and a minimum of 5.5 in any single component. If you have alternative qualifications or do not meet the IELTS requirement we also offer a range of [Pre-Sessional English Programmes.](http://www.hud.ac.uk/international/pre-sessionalenglishprogramme/)

**16.2** The University provides opportunities for the accreditation of prior learning (APL) as stated at the following link: <https://www.hud.ac.uk/policies/registry/awards-taught/section-c/>

**16.3** The University’s general minimum entry requirements are specified in Section D of the Regulations for Awardswhich can be found on the University website as follows: <https://www.hud.ac.uk/policies/registry/awards-taught/section-d/>

**16.4** Every person who applies for this course and meets the minimum entry requirement – regardless of any disability – will be given the same opportunity in the selection process. General advice and information regarding disability and the support the University can give can be found by contacting student services as follows:

Telephone**:** 01484 472675

Email: [disability@hud.ac.uk](mailto:disability@hud.ac.uk)

Further information is available at their website at:

<http://students.hud.ac.uk/wellbeing-disability-services/disabilityservices>

Further advice on the specific skills and abilities needed to successfully undertake this course can be found by visiting the University website at <http://www.hud.ac.uk/courses/> and by contacting the admissions tutor.

* 1. The specific entry requirements and admission criteria for the courses are detailed below:

* BBC at A-Level including a grade B in Chemistry, or a Grade C in Chemistry plus a grade B in another relevant Science subject. The endorsement for practical work is an essential part of Science A-Level study, and is a requirement for entry to our degree course.
* DMM in BTEC Level 3 Extended Diploma in Applied Science. Alternatively, a BTEC Level 3 Extended Diploma in Health and Social Care is acceptable but must be accompanied by another Science A-Level at grade C or above.
* 112 UCAS tariff points from a combination of Level 3 qualifications including a grade B in a Chemistry A-Level, or a grade C in Chemistry at A Level plus a grade B in another Science subject.
* Access to Higher Education Diploma with 45 Level 3 credits at Merit or above to include modules in relevant science subjects
* 112 UCAS tariff points from International Baccalaureate qualifications which should include modules in relevant science subjects.
* Successful completion of the University of Huddersfield Science Extended degree course
* Applications are also welcomed from mature candidates capable of benefiting from the course

Full details of entry requirements are given in the University prospectus and on the web site.

1. **Methods for Evaluating and Improving the Quality and Standards of Teaching and Learning**

**17.1 University:** The methods for the validation and annual evaluation of courses, including those validated by external bodies, and for the review of teaching and research and of academic support services are specified in the University’s; Quality Assurance Procedures for Taught Courses and Research Awards which can be found on the University website as follows:

<https://www.hud.ac.uk/policies/registry/qa-procedures/>

**17.1.1 Periodic reviews**

**17.1.2 External examiner system**

**17.1.3 University Teaching and Learning Committee**

**17.1.4 Mechanisms for student feedback** (including independent student satisfaction survey)

**17.1.5 Institutional staff development courses**

**17.2** **School:**

**17.2.1** Mechanisms for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards:

* Course and module reviews (student evaluations and staff report)
* Annual course evaluation report prepared by the Course Leader and considered by Course Committee and School Annual Evaluation Committee
* Peer observation of teaching
* External Examiners' reports
* PSRB requirements

**17.2.2 Committees with responsibility for monitoring and evaluating quality and standards**

* Student Panel
* Course Committee
* School of Applied Sciences Teaching and Learning Committee
* School of Applied Sciences Annual Evaluation Committee
* Course Assessment Board -Annual Evaluation Committee - All forms of feedback, including a review of progression and completion rates are included in the annual course monitoring report. This is considered through the process of annual evaluation of courses and enables areas of weakness to be identified and clear action plans to be determined and monitored. The School has introduced a rigorous module review process that is undertaken by Year Tutors prior to annual evaluation to ensure necessary changes to modules can be implemented immediately. In addition to the annual monitoring processes the University organises a quinquennial review at school level.

**17.2.3 Mechanisms for gaining student feedback on the quality of teaching and their learning experience**

Student Feedback is an integral part of course evaluation and improvement. Students provide feedback through a variety of means including:

* Module and course evaluation questionnaires
* Student representation on Course Committee
* Student Panel.

**17.2.4 Employer Feedback** is sought through feedback questionnaires involving employers of our graduates and through monitoring from placement providers.

* + 1. **External Examiners** provide evaluation of the standards achieved by the students. The course team is required to formally respond to comments raised by External Examiners and to report on progress made in addressing any areas on concern.

**17.2.6 Staff development priorities include:**

* Staff Personal Development Review
* Updating professional developments
* Regular course meetings and annual review and planning for subsequent academic year.

**18. Regulation of Assessment**

**18.1** University awards are regulated by the Regulations for Awards on the University website as follows: <https://www.hud.ac.uk/policies/registry/awards-taught/> and the Regulations for Taught Students, procedures and forms can be accessed on the University website as follows:

<https://www.hud.ac.uk/registry/current-students/taughtstudents/>

The minimum pass mark for each module is 40%.

An overview of assessment details and procedures is provided in the Course Handbook.

To qualify for the award of Honours students must be credited with 360 credits and complete all the requirements of the course. Only the marks from the second and third year will contribute to the final classification of degree.

The marks for each module are weighted according to the credit rating. Third year marks contribute two thirds of the overall performance.

**18.2 Role of External Examiners**

External Examiners are appointed by the University Learning and Teaching Committee. The role of the External Examiner is that of moderator. In order to do this they:

* approve examination papers
* review coursework and examination scripts
* interview borderline candidates for award
* attend the Course Assessment Board.

**19. Indicators of Quality and Standards**

* Reports of validation panels
* Periodic Review
* Subject Review
* Annual course review
* External examiners’ reports
* Qualifications and experience of staff
* Recognition of BSc(Hons) suite of courses by RSB for accredited status

# Appendix 1

# Mapping of learning outcomes to modules

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Learning Outcome** | SFB1010 | SFB1003 | SFB1004 | SFB1006 | SFB1011 | SFB1012 |  | SIB2001 | SIB2002 | SIB2006 | SIB2012 | SIB2013 | SIB2015 | SIB2016 |  | SHB4001 | SHB4006 | SHB4007 | SHB4012 | SHB4015 | SHB4017 | SHB4018 | SHB4019 |
| 1 |  | X | X | X | X | X |  | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X | X |
| 2 |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  | X | X | X | X | X | X | X | X |
| 3 |  |  |  |  |  |  |  |  | X | X | X |  | X |  |  | X | X | X | X | X | X | X | X |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X |
| 5 |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  | X |  |  |  |  |  |
| 6 |  | X | X | X | X | X |  |  | X | X | X |  | X | X |  | X | X |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 9 |  | X | X | X | X | X |  |  | X | X | X |  | X | X |  | X | X | X |  | X | X |  |  |
| 10 |  | X | X | X | X | X |  |  | X | X | X |  | X | X |  | X | X |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 12 | X |  | X | X |  |  |  | X |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X |
| 13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 14 |  |  |  | X |  |  |  |  |  |  | X |  |  |  |  | X | X |  |  |  |  |  |  |
| 15 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |
| 16 | X |  |  | X |  |  |  | X |  |  | X |  |  |  |  | X | X |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 18 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  | X |
| 19 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 20 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  | X |
| 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  | X |  |  |  |
| 22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  | X | X |  |  |
| 27 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 29 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| **Learning Outcome** | SFB1010 | SFB1003 | SFB1004 | SFB1006 | SFB1011 | SFB1012 |  | SIB2001 | SIB2002 | SIB2006 | SIB2012 | SIB2013 | SIB2015 | SIB2016 |  | SHB4001 | SHB4006 | SHB4007 | SHB4012 | SHB4015 | SHB4017 | SHB4018 | SHB4019 |
| 30 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 31 | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 33 |  | X | X | X | X | X |  |  | X | X | X |  | X |  |  | X | X |  |  |  |  |  |  |
| 34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |
| 35 |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  | X |  |  |  | X |
| 36 |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |
| 37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  | X |  |
| 38 | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  |  | X |  |
| 39 |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |
| 40 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |
| 41 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 43 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 45 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  | X | X |  |  |  |
| 46 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 47 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 48 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 49 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| 50 |  |  |  | X |  |  |  |  |  | X |  |  |  |  |  |  | X |  |  |  |  |  |  |
| 51 |  | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 52 |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 53 |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |
| 54 |  | X | X |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55 |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  | X |
| 56 |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| 57 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  | X |
| 58 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  | X |
| 59 |  |  |  |  | X |  |  |  |  |  | X |  |  |  |  |  |  |  |  | X |  | X |  |
| 60 |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |
| 61 |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 62 |  |  |  |  | X | X |  |  |  |  | X |  |  |  |  |  |  |  |  | X |  | X |  |
| **Learning Outcome** | SFB1010 | SFB1003 | SFB1004 | SFB1006 | SFB1011 | SFB1012 |  | SIB2001 | SIB2002 | SIB2006 | SIB2012 | SIB2013 | SIB2015 | SIB2016 |  | SHB4001 | SHB4006 | SHB4007 | SHB4012 | SHB4015 | SHB4017 | SHB4018 | SHB4019 |
| 63 |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |
| 64 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |
| 65 |  |  |  |  | X | X |  |  |  |  | X |  |  |  |  | X |  |  |  |  |  | X |  |
| 66 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| 67 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |

**Appendix 2**

**Course Assessment Board Structure**

|  |  |  |  |
| --- | --- | --- | --- |
| Mode of Study | Course Start Month | Length before Main CAB | Expected Month for Main CAB |
| UGT FT | September | 9 months | June |

Appendix 1 - Assessment schedule, for all modules including optional modules, identifying the final assessment submission point for the course overall

|  |  |  |
| --- | --- | --- |
| **Module** | **Exam** | **Practical or Coursework** |
| SFB1003 | 60% | 40% |
| SFB1004 | 60% | 40% |
| SFB1006 | 60% | 40% |
| SFB1010 | None | 60% Mathematics and Statistics  30% Report  10% Oral Presentation |
| SFB1011 | 60% | 40% |
| SFB1012 | 80% | 20% |
|  |  |  |
| SIB2001 | none | 50% Group Work  35% Case Study  7.5% COSHH  7.5% Ethics |
| SIB2002 | 60% | 40% |
| SIB2006 | 60% | 40% |
| SIB2012 | 60% | 40% |
| SIB2013 | 60% | 40% |
| SIB2015 (optional) | 60% | 40% |
| SIB2016 (optional) | 60% | 40% (Group Presentation) |
|  |  |  |
| SHB4001 | none | 75% Written Report  15% Oral Presentation  10% Supervisor Assessment |
| SHB4015 | 70% | 30% |
| SHB4017 | 70% | 30% |
| SHB4018 | 70% | 30% |
| SHB4006 (option) | 70% | 30% |
| SHB4007 (option) | 70% | 30% |
| SHB4012 (option) | 70% | 30% (Poster and Interview) |
| SHB4019 (option) | 70% | 30% (Flyer and Group Presentation) |
|  |  |  |

Final Assessment Submission Point is …?

Appendix 3 - PDP mapping

|  |  |  |
| --- | --- | --- |
| **Aspect of PDP** | **Place in the course** | **Evidence** |
| Personal reflection and CV development. | Years 1/2/3 - Personal tutorials.  (SFPT001, SIPT001, SHPT001) | CV  List of Technical Skills (checklist) |
| Personal reflection | Optional SWE/SRE year | Placement log |
| Developing Presentation Skills | SFB1010 (formative and summative individual presentations)  SIB2001 (summative group presentation)  SHB4001 (summative individual presentation) | Feedback on presentations |
| Teamwork | SIB2001 | Learning Outcome -The students will be able to develop their team working skills in diverse teams, appreciate the advantages and difficulties of team-work whilst negotiating with their peers. |
| Various aspects of PDP | Global Professional Award |  |
| Developing Independence/ confidence | SHB4001 | Students reflect upon their personal development, write about their weaknesses, make plans for improvement and identify key skills. There is a particular emphasis on career plans with tutorials on employment and postgraduate study, as well as interview techniques. |

Appendix 4 - [Subject benchmark/s](https://www.qaa.ac.uk/quality-code/subject-benchmark-statements) to course learning outcomes mapping (please use the [QAA Qualifications Descriptor](https://www.qaa.ac.uk/quality-code/qualifications-and-credit-frameworks) where there is no available subject benchmark)