**PROGRAMME SPECIFICATION**

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| 1 | **AWARDING INSTITUTION** | University of Huddersfield |
| 2 | **TEACHING INSTITUTION** | University of Huddersfield |
| 3 | **SCHOOL AND DEPARTMENT** | Applied SciencesDepartment of Biological and Geographical Sciences |
| 4 | **PROGRAMME ACCREDITED BY:** | Royal Society of Biology |
| 5 | **MODE OF DELIVERY** | Full-time/sandwich |
| 6 | **FINAL AWARD**  | BSc (Hons) |
| 7 | PROGRAMME TITLE and UCAS Code | Biochemistry C700 Biochemistry with Research Placement C701Biology (Molecular and Cellular) C1C7 Biology (Molecular and Cellular) with Research Placement C1C8 Medical Biochemistry C741Medical Biochemistry with Research Placement C742Medical Biology C131Medical Biology with Research Placement C132Medical Genetics C440Medical Genetics with Research Placement C441 |
| 8 | **UCAS CODE** | C700, C701, C1C7, C1C8, C741, C742, C131, C132, C440, C441 |
| 9 | **SUBJECT BENCHMARK STATEMENT**  | Biosciences |
| 10 | **DATE OF APPROVAL**  | June 2016Revalidated January 2019Revised June 2020 |

# 11 EDUCATIONAL AIMS OF PROGRAMME

The principle aims of the courses are:

* To develop creativity and innovation.
* To provide graduates with a broad understanding of the scientific basis of the study of living systems and practical experience of working in a laboratory.
* To produce graduates that can exercise professionalism, independent thought, and take personal responsibility for decision making in complex, unpredictable and evolving working environments.
* To produce graduates that have specialist knowledge in areas of existing and emerging importance. These may include areas such as food security, evolution and biodiversity, molecular and biochemical processes which underpin life on earth. Fundamental study in these areas will underpin 21st century advances on longevity, health and well-being and have marked influences on wealth creation and human development.
* Graduates that can make a significant contribution to innovation and growth in emerging areas of the economy: graduate employment in bioscience is strong and the UK has significant leads in certain bioscience fields.

Specific employment areas targeted by these courses are:

* bioscience, biotechnology and healthcare industries
* healthcare and diagnostic products
* diagnostic laboratories
* education: university, college and school teaching
* government departments
* government and charity-funded research laboratories and institutes
* patent offices
* regulatory matters in healthcare, including clinical trials
* research laboratories in universities
* pharma research
* In addition, graduates from these courses have key transferable skills detailed below which give them clear advantages in graduate employment across all employment sectors world-wide.
* Contribute to widening access recruiting students of varied ethnic origins and a wide variety of educational backgrounds.
* To develop the intellectual and practical skills necessary for progression to postgraduate research and training.
* To encourage independent learning and academic curiosity in preparation for lifelong learning, particularly important where the evolution of core subject specific knowledge is undergoing revolutionary transformation within a generation.
* To offer a range of core and optional modules allowing students to specialise in particular areas of bioscience.
* To offer all students the opportunity to conduct a substantial research project.
* To operate a caring and supportive environment in which students can develop confidence in their own abilities.
* Engender an understanding and enthusiasm for biological sciences.
* Equip graduates with the personal skills and the subject-specific knowledge and skills required by employers.
* For the Advanced Accredited programmes – see below – the objective is to train future team leaders in molecular bioscience by giving them the opportunity to conduct a minimum 80 Credit independent-supervised research project.

# 12 INTENDED LEARNING OUTCOMES

The learning outcomes for this programme have been derived directly from the Quality Assurance Agency Biosciences Benchmark Statement (October 2019) and map to the module content of the courses in the matrix at the end of the document to guarantee compliance.

**Graduate and Transferable skills**

Intellectual skills

1. analyse, synthesise and summarise information critically from a variety of sources
2. consider issues from a number of perspectives and values and arrive at a considered critical judgement stating assumptions and limitations
3. construct grammatically correct documents in an appropriate academic style and format, using and referencing relevant ideas and evidence
4. understand the importance of academic and research integrity.

Analytical and data interpretation skills

* 1. receive and respond to a variety of sources of information: textual, numerical, verbal, graphical
	2. understand and manipulate numerical data
	3. solve problems by a variety of methods
	4. determine the validity and rigour of statistical outcomes.

Communication, presentation and information technology skills

* + 1. communicate about their subject appropriately to a variety of audiences, including the general public, using a range of formats and approaches and employing appropriate scientific language
		2. cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism whether intentional or not
		3. use the internet and other electronic sources critically as a means of communication and a source of information.

Interpersonal and teamwork skills

* + - 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.

Personal and professional development skills

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

**Core biosciences knowledge, understanding and skills**

an interdisciplinary and multidisciplinary approach in advancing knowledge and understanding of the processes and mechanisms of life, from molecular to cellular, and from organism to ecosystem

engagement with the essential facts, major concepts, principles and theories associated with the chosen subject area, including knowledge of the processes and mechanisms that have shaped the natural world in terms, for example, of the spread of time from the geological to the present and of complexity from the environmental to the sub-cellular, including consideration of interactions between living systems and human activities

competence in the core experimental and/or survey skills appropriate to the subject under study

understanding of information and data, and their setting within a theoretical framework, accompanied by critical analysis and assessment to enable understanding of the subject area as a coherent whole

familiarity with the terminology, nomenclature and classification systems, as appropriate

practical and theoretical methods of acquiring, interpreting and analysing biological information with a critical understanding of the appropriate contexts for their use through the study of texts, original papers, reports and data sets

awareness of the contribution of their subject to the development of knowledge about the diversity of life and its evolution

 knowledge of a range of communication techniques and methodologies relevant to the particular subject, including data analysis and the use of statistics (where this is appropriate)

engagement with some of the current developments in the biosciences and their applications, and the philosophical and ethical issues involved

awareness of the contribution of biosciences to policy and other debates and controversies

understanding of how biosciences knowledge forms the basis for informed concern about the quality and sustainability of life

awareness of the boundaries and limitations of their learning

 awareness of intellectual property (IP) and how scientific advances may be secured and progressed by the application of Intellectual Property Rights (IPRs)

an appreciation of how their skills and learning contribute to the many careers to which graduates will be progressing

an appreciation of the complexity and diversity of life processes through the study of organisms, their molecular, cellular and physiological processes, their genetics and evolution, and the interrelationships between them and their environment

the ability to read and use appropriate literature with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information, and its interpretation and application

the capacity to give a clear and accurate account of a subject, marshal arguments in a sophisticated way and engage in debate and dialogue both with specialists and non-specialists, using appropriate scientific language

critical and analytical skills including a recognition that statements should be tested and that evidence is subject to assessment and critical evaluation

the ability to employ a variety of methods of study in investigating, recording and analysing material

the ability to think independently, set tasks and solve problems.

**Specific graduate skills**

Intellectual skills

recognise and apply subject-specific theories, paradigms, concepts or principles (for example the relationship between genes and proteins, or the nature of essential nutrients in microbes, cells, plants and animals)

analyse, synthesise and summarise information critically, including published research or reports

obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses

apply subject knowledge and understanding to address familiar and unfamiliar problems

recognise the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct.

Practical skills

demonstrate competence and progressive development in the basic and core experimental skills appropriate to the programme of study

design, plan, conduct and report on investigations, which may involve primary or secondary data (for example from a survey database)

obtain, record, collate and analyse data using appropriate techniques in the field and/or laboratory, working individually or in a group, as is most appropriate for the subject under study

undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner

comply with health and safety policies, Good Laboratory Practice, risk, and Control of Substances Hazardous to Health assessments, recognise and explain the importance of quality control and quality assurance

recognise and explain the need for procedures for obtaining informed consent and appreciate the underlying ethical issues, including respect for the rights of access, for example, in field work or in order to map the genes of a community, family or group of plants or animals, including humans

demonstrate an understanding of the ethical and other issues relating to animal welfare.

explain and justify the impact of investigations on the environment, on the organisms or subjects under investigation, and on other stakeholders.

Analytical and data interpretation skills

1. use and interpret a variety of sources of information: textual, numerical, verbal, graphical
2. carry out sample selection; record and analyse data in the field and/or the laboratory; ensure validity, accuracy, calibration, precision, replicability and highlight uncertainty and possible bias 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. solve problems by the most appropriate method.

**Threshold standard**

On graduating with an honours degree in biosciences in which the study of molecular aspects of biology (including biochemistry) forms a significant proportion, graduates will be able to:

1. know and explain the structure and function of various types of cells in unicellular and multicellular organisms, the structure and function of cell membranes, cell differentiation
2. express relevant biological reactions in chemical terms
3. explain the chemistry and structure of the major biological macromolecules and how that determines their biological properties
4. explain how the principles of genetics underlie much of the basis of molecular biology
5. explain the principles of gene expression and how it is controlled
6. explain a range of appropriate and relevant experimental techniques and how they are used; and be able to perform some of them
7. describe cell metabolism, including the main anabolic and catabolic pathways
8. describe protein structures and functions and their control mechanisms.

**Degrees with Supervised Research Placement**

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

**13 PROGRAMME STRUCTURES AND REQUIREMENTS, LEVELS, MODULES,**

 **CREDITS AND AWARDS**

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

The courses are studied over four years, including a year on supervised placement. This year may be in a work based environment (SSB3001). Students undertaking the Advanced Accredited degree take the Supervised Research module, SSB3003. Students can also opt for a full time 3-year route if a placement isn’t sought. Study is undertaken at three levels, one for each year of University-based study. The courses are based on six 20-credit modules per year, with the exception of the Final Year, which includes the 40-credit compulsory Research Project.

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.

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 Biological Sciences** 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 Biological Sciences, providing an appropriate combination of ‘H’ level modules have been passed.

## Course Structures

All courses may include a supervised placement year, between Year Two and the Final Year, with either SSB3001 in a work based environment. RSB Advanced Accredited programmes follow SSB3003 which have course entry pre-requisites and stipulations concerning the nature of the placement, the latter laid out in the module specification.

All of the modules are Core modules unless listed under ‘Option’ in the Course structures shown below.  SFB1010 (Research Skills) and SFB1004 (Biochemistry 1) and SHB4001 (Research Project) are compulsory modules – they cannot be condoned by an exam board and must be passed.

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| **BSc (Hons) Biochemistry** |
| **Year One** | **Year Two** | **Year Three** | **Final Year** |
| Research Skills SFB1010 (compulsory) | Research Skills 2 SIB2001(compulsory) | Optional Supervised Work / Research Experience | Research Project SHB4001(40 credits)(compulsory) |
| Molecular & Cellular Biology SFB1003 | Molecular Biology SIB2003 | Genomics SHB4005 |
| Biochemistry 1 SFB1004(compulsory) | Biochemistry 2 SIB2004 | Applied Molecular Genetics SHB4003 |
| Physiology 1 SFB1006 | Genomes and Evolution SIB2005 | Biochemistry 3 SHB4004 |
| Analytical Chemistry 1 SFC1004 | Analytical Science 2 SIC2004 | Option (x1) Medical Genetics SHB4007 Immunology and Infection SHB4012 Advanced PhysiologySHB4006Cancer Biology SHB4011Innovations of drug design and developmentSHB4018Mechanisms & Pathology of Cancer & other Chronic DiseasesSHB4019   |
| Organic Chemistry 1 SFC1002 | Option (x1) Molecular Aspects of Drug Action SIB2012 Cell Biology SIB2002SIB2013 Pharmaceutics and Formulation SIB2015 Infectious Diseases and Therapeutics |
| **BSc (Hons) Biology (Molecular and Cellular)** |
| **Year One** | **Year Two** | **Year Three** | **Final Year** |
| Research Skills SFB1010(compulsory) | Research Skills 2 SIB2001(compulsory) | Optional Supervised Work / Research Experience | Research Project SHB4001 (40 credits)(compulsory) |
| Molecular & Cellular Biology SFB1003 | Cell Biology SIB2002 | Cancer Biology SHB4011 |
| Biochemistry 1 SFB1004(compulsory) | Molecular Biology SIB2003 | Applied Molecular Genetics SHB4003 |
| Physiology 1 SFB1006 | Biochemistry 2 SIB2004 | Genomics SHB4005 |
| Chemical & Physical Principles SFB1005 | Genomes and Evolution SIB2005 | Option (x1) Biochemistry 3SHB4004Medical Genetics SHB4007 Immunology and Infection SHB4012 Advanced PhysiologySHB4006Innovations of drug design and developmentSHB4018  |
| World of Microbes SFB1008 | Option (x1) Molecular Aspects of Drug Action SIB2012 SIB2013 Pharmaceutics and Formulation SIB2015 Infectious Diseases and Therapeutics |

Students taking BSc Biology (Molecular and Cellular), BSc Medical Biology and BSc Medical Genetics may choose to take Analytical Science (SFC1004) instead of Chemical and Physical Principles (SFB1005) if they have achieved a Grade B or above in ‘A’ Level chemistry

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| **BSc (Hons) Medical Biochemistry (S385)** |
| **Year One** | **Year Two** | **Year Three** | **Final Year** |
| Research Skills SFB1010(compulsory) | Research Skills 2 SIB2001(compulsory) | Optional Supervised Work / Research Experience | Research Project SHB4001 (40 credits)(compulsory) |
| Molecular & Cellular Biology SFB1003 | Molecular Biology SIB2003 |  Cancer Biology SHB4011 |
| Biochemistry 1 SFB1004(compulsory) | Biochemistry 2 SIB2004 | Advanced PhysiologySHB4006 |
| Physiology 1 SFB1006 | Genomes and Evolution SIB2005 | Biochemistry 3SHB4004 |
| Organic Chemistry 1 SFC1002 | Molecular Aspects of Drug Action SIB2012 | Option (x1) Genomics SHB4005Applied Molecular Genetics SHB4003 Immunology and Infection SHB4012 Medical Genetics SHB4007Innovations of drug design and developmentSHB4018 |
| Analytical Chemistry 1 SFC1004 | Option (x1)Epidemiology and Public Health SIB2016 Cell Biology SIB2002  Analytical Science 2 SIC2004Pharmaceutics and Formulation SIB2013 Infectious Diseases and TherapeuticsSIB2015  |

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| --- |
| **BSc (Hons) Medical Biology (S380)** |
| **Year One** | **Year Two** | **Year Three** | **Final Year** |
| Research Skills SFB1010(compulsory) | Research Skills 2 SIB2001(compulsory) | Optional Supervised Work / Research Experience | Research Project SHB4001 (40 credits)(compulsory) |
| Molecular & Cellular Biology SFB1003 | Molecular Biology SIB2003 |  Cancer Biology SHB4011 |
| Biochemistry 1 SFB1004(compulsory) | Physiology 2 SIB2006 | Advanced PhysiologySHB4006 |
| Physiology 1 SFB1006 | Genomes and Evolution SIB2005  | Immunology and Infection SHB4012 |
| Chemical and Physical Principles SFB1005 | Molecular Aspects of Drug Action SIB2012 | Option (x1) Applied Molecular Genetics SHB4003Biochemistry 3SHB4004Genomics SHB4005Medical Genetics SHB4007Innovations of drug design and developmentSHB4018 |
| World of Microbes SFB1008 | Option (x1) Cell Biology SIB2002Epidemiology and Public Health SIB2016 Biochemistry 2 SIB2004SIB2013 Pharmaceutics and Formulation SIB2015 Infectious Diseases and Therapeutics |

Students taking BSc Biology (Molecular and Cellular), BSc Medical Biology and BSc Medical Genetics may choose to take Analytical Science (SFC1004) instead of Chemical and Physical Principles (SFB1005) if they have achieved a Grade B or above in ‘A’ Level chemistry

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|   | **BSc (Hons) Medical Genetics (S383)** |
| **Year One** | **Year Two** | **Year Three** | **Final Year** |
| Research Skills SFB1010(compulsory) | Research Skills 2 SIB2001(compulsory) | Optional Supervised Work / Research Experience | Research Project SHB4001 (40 credits)(compulsory) |
| Molecular & Cellular Biology SFB1003 | Molecular Biology SIB2003 |  Applied Molecular Genetics SHB4003 |
| Biochemistry 1 SFB1004(compulsory) | Biochemistry 2 SIB2004 | Genomics SHB4005 |
| Physiology 1 SFB1006 | Genomes and Evolution SIB2005 | Medical Genetics SHB4007 |
| Chemical and Physical Principles SFB1005 | Epidemiology & Public Health SIB2016 | Option (x1) Advanced PhysiologySHB4006 Cancer Biology SHB4011 Immunology & Infection SHB4012Biochemistry 3SHB4004 Mechanisms & Pathology of Cancer & other Chronic DiseasesSHB4019Innovations of drug design and developmentSHB4018 |
| World of Microbes SFB1008 | Option (x1) Cell Biology SIB2002 Physiology 2 SIB2006 Molecular Aspects of Drug Action SIB2012SIB2013 Pharmaceutics and Formulation SIB2015 Infectious Diseases and Therapeutics |

Students taking BSc Biology (Molecular and Cellular), BSc Medical Biology and BSc Medical Genetics may choose to take Analytical Science (SFC1004) instead of Chemical and Physical Principles (SFB1005) if they have achieved a Grade B or above in ‘A’ Level chemistry

**14 TEACHING, LEARNING AND ASSESSMENT**

The courses ensure that the intended learning outcomes can be achieved by:

1. providing a coherent education with a high degree of currency in the chosen specialism.
2. delivering a curriculum informed by research and scholarly activity.
3. delivering a curriculum informed by feedback from employers.
4. providing a curriculum delivered by staff who engage in peer observation of teaching and participate in an annual personal development review.
5. including modules, which develop the students’ understanding of living systems at a molecular and cellular level.
6. including modules on specialist topics.
7. having a flexible structure, which caters for a diversity of abilities.
8. providing experience of carrying out a wide range of laboratory procedures using modern equipment.
9. incorporating modules with a variety of types of teaching, learning and assessment.
10. providing modules that encourage students to think and work independently.
11. ensuring the availability of support and guidance throughout the students’ education by allocating a personal tutor to each of them.
12. providing students with comprehensive feedback on their progress throughout their course.
13. developing progressively the students’ personal skills, notably through a structured tutorial programme and personal development planning guided by their personal tutor.
14. 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.
15. offering the opportunity of a year’s work or research placement.
16. including modules that develop independent learning, culminating in a research project in the final year.
17. making available expert careers guidance.

# 15 SUPPORT FOR STUDENTS AND THEIR LEARNING

* The personal tutor role is seen as an important one, offering students a clearly identified and accessible ‘contact person’ for pastoral and academic concerns. The personal tutor is responsible for providing students with advice and guidance concerning academic performance and progress, supporting and advising students with personal difficulties. Personal tutors report to the Year Tutor or Course Leader about any student whose progress is a cause for concern which can initiate a chain of events and processes, involving the academic skills tutors, disability and welfare support, counselling service, student services, and the Students’ Union (each where appropriate) as well as the School’s own Student Guidance and Support Officer.
* Students attend an induction week at the start of their course, during which they are given information about the rules, regulations, practices and procedures of the University. A meeting with their Personal Tutor is scheduled, when they are given a Course Guide and a timetable along with advice about relevant topics such as time management.
* Flying Start is a key programme of all courses. This is an intensive 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.
* A special feature of these courses is the inclusion of “self-study” modules, the first of which systematic and timetabled sessions with the student’s Personal Tutor to address specific key points in the students development including: PDP, CV and career planning skills (enterprise and employability), promotion of independent study requiring each student to investigate a chosen topic and produce written reports early in Year 1 as well as oral presentations to build confidence in key transferable and subject specific skills. These appear in all levels of the courses, are designed to develop the students’ capacity for independent study (in the context of their chosen subject), in addition to their communication skills, and culminate in the Research Project in the Final Year, which requires students to undertake an individual and original piece of work.
* The Personal Development Planning (PDP) process is facilitated by the Personal Tutor in the context of these self-study modules.
* Student attendance is monitored in accordance with the University regulations. Attendance at lectures is monitored electronically and students who fail to attend regularly are contacted to ensure that there are no major problems being encountered.
* The School of Applied Sciences possesses modern purpose-built suites of chemistry, biology and pharmacy laboratories. These have equipment that students are likely to meet in a typical industry, hospital or research laboratory.
* The University Library provides students with full access to a wide range of books, journals, electronic information, IT facilities and staff support (available evenings and weekends). Services can be accessed electronically from home or workplace and orders/requests can be made by e-mail, fax or telephone. In some instances, orders can be delivered for a nominal charge.
* The School makes full use of the Virtual Learning Environment with a range of study support material for each module.
* Supervised Work Experience is organised jointly by administrative staff and SWE tutor, as well as the Personal Tutor. They assist students with all aspects of the placement year, but especially with the process of gaining suitable employment/research placements.
* The Department of Biological Sciences has a long tradition of placing SWE students with major employers and in world class research facilities. 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 widespread international placements e.g. in Australia (Monash University) Tokyo (Women’s Medical School) as well as internal research and technical placements at the University of Huddersfield.
* Final Year students attend specialist sessions designed to give expert guidance on future careers.
* Graduates have excellent employment prospects. Many of our graduates now work for multinational companies or are carrying out research in international laboratories. Many have gone on to further study, either at Huddersfield or in other universities, and it is now routine for our best students to undertake PhDs or similar further level training such as the NHS Science training programme, or Medicine and Dentistry.
* Student Services provide specialist advice in the areas of careers advice, pastoral care and chaplaincy, counselling, accommodation and welfare, financial support, disability support and sports facilities etc. In compliance with SENDA, for students with disabilities, arrangements can be made to alter the pattern and nature of assessment activities and provide an extended range of learning resources and support where helpful.
* 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.

# 16 CRITERIA FOR ADMISSION

* BBC at A Level including two relevant Science subjects. The endorsement for practical work is an essential part of Science A-level study, and is a requirement for entry to our degree course. For the Advanced Accredited Courses BBB at ‘A’ Level including an ‘A’ level in chemistry and 2 other sciences subjects.
* DDM in BTEC Level 3 Extended Diploma in Applied Science. Alternatively, a BTEC Health and Social Care is acceptable but must be accompanied by another Science A Level at grade C or above.
* 120 UCAS tariff points from a combination of Level 3 qualifications including a grade B in a Chemistry A-Level, plus another relevant Science subject.
* Access to Higher Education Diploma with 45 Level 3 credits at Merit or above to include modules in relevant science subjects.
* International Baccalaureate with an overall score of 31 points to 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.
* Advanced Accredited courses require ABB at ‘A’ level with the ‘A’ grade in Chemistry or Biology and the remaining 2 ‘A’ levels in relevant science subjects.
* Full details of entry requirements are given in the University Prospectus Entry requirements for all courses in the Biological Sciences Suite are covered by the regulations of the University.

**17 METHODS FOR EVALUATING AND IMPROVING THE QUALITY AND**

 **STANDARDS OF TEACHING AND LEARNING**

* There is a comprehensive framework for the monitoring and improvement in quality and standards.
* The School of Applied Sciences Board monitors quality and standards, with a devolved responsibility being taken by the School Teaching and Learning Committee. The Biology Suite Course Committee manages the courses. This is a sub-committee of the School Board. The Course Committee considers all feedback and evaluation.
* **Student Feedback** is an integral part of course evaluation and improvement. Students provide feedback through a variety of means including formal module and course evaluation questionnaires, the Student Panel and membership of the Course Committee. The final Year National Student Survey is now a key metric of student satisfaction published by the Government annually.
* **Employer Feedback** is sought through feedback questionnaires involving employers of our graduates and through monitoring from placement providers.
* **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.
* 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. In addition to the annual monitoring processes the University organises a quinquennial review at School level.

**18 REGULATION OF ASSESSMENT**

**Assessment rules and honours classification**

**The university regulations for awards can be found at the following link:**

<http://www.hud.ac.uk/media/universityofhuddersfield/content/documents/registry/regulationsandpolicies/awardsregulations/Full%20Version%20August%202015.pdf>

Additional qualifications for progression on the Advanced Accredited Route.

Students must achieve an average of 60% in Year 2 to progress on the Advanced Accredited Placement module SSB3003 and to complete the Advanced Accredited route. Students who start out on the Advanced Accredited degree that do not achieve 60% in Year 2 will be placed on the equivalent degree course without Advanced Accreditation. Similarly, students who achieve 60% in Year 2 who are not undertaking the Advanced Accredited route will be allowed to undertake SSB3003 and join the Advanced Accredited route on a competitive basis of which approximately ten places will be made available annually.

**Role of External Examiners**

External Examiners are appointed by the School Board and approved by the University Teaching and Learning Committee.

The role of the External Examiners is to ensure academic and professional standards are maintained through:

* The review of coursework and examinations.
* Attendance at the Course Assessment Board.
* External Examiners’ report to the University.

**19 INDICATORS OF QUALITY AND STANDARDS**

The report of the Review Panel for the Subject Review/Re-Validation of the of the Biological Sciences subject area, held on Monday 14 March 2016 was recently published. The review was undertaken in accordance with Section G of the University’s handbook of Quality Assurance Procedures for Taught Courses, September 2015. The panel recommended to the University Teaching and Learning Committee that the courses within the Biological Sciences subject area should be revalidated. The panel were unanimous in their decision to revalidate the course within the subject area.

The panel wished to specifically commend the teaching team on:

* The facilities available to students and staff
* The Resource Centre
* The student representatives and their work ethic
* Their extensive efforts in trying to improve the engagement with students from within the subject area

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| **Benchmark** | SFB1010 | SFB1003 | SFB1004 | SFB1005 | SFB1006 | SFB1008 | SFC1004 | SFC1002 |  | SIB2001 | SIB2002 | SIB2003 | SIB2004 | SIB2005 | SIB2006 | SIB2012 | SIB2008 | SIB2016 | SIC2004 | SIB2013 | SIB2015 |  | SHB4001 | SHB4011 | SHB4003 | SHB4004 | SHB4005 | SHB4006 | SHB4007 | SHB4012 | SHB4018 | SHB4019 |
| 1 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  | X |
| 2 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  | X |  | X |  |
| 3 | X |  | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X | X | X |  | X |  | X | X |  | X |
| 4 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 5 | X |  | X |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  |  | X |  |
| 6 |  | X | X |  | X |  |  |  |  | X | X | X | X | X |  | X | X |  | X |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 7 | X | X | X | X | X | X | X | X |  |  | X | X | X | X | X | X | X | X | X |  |  |  |  |  | X | X |  | X | X |  | X |  |
| 8 | X |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  | X |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  | X |
| 10 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  | X |
| 11 | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X |
| 12 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 13 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 15 |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 17 | X |  | X |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  | X |  |  |  |
| 18 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 19 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 20 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 22 | X | X | X |  |  |  |  |  |  | X | X | X | X | X |  |  |  |  |  |  |  |  | X | X |  |  |  | X |  | X | X |  |
| 23 |  |  | X |  |  | X |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  | X |  |  | X |  | X | X |  |
| 24 |  | X | X | X | X | X | X | X |  |  | X | X | X |  | X | X | X | X | X | X | X |  |  |  |  |  |  | X |  |  |  | X |
| 25 | X |  |  |  |  |  |  |  |  | X |  |  |  | X |  |  |  |  |  | X | X |  | X |  | X |  |  |  |  |  | X |  |
| 26 |  | X | X | X | X | X | X | X |  |  | X | X | X | X | X | X | X |  |  | X | X |  |  | X | X | X | X |  | X | X | X |  |
| 27 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X | X |
| 28 |  | X | X |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  | X |  |
| 29 | X |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  |  |  |  |  |  |  | X | X |  |  | X | X |  |  |  |  |
| 30 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  | X |  | X | X |
| **Benchmark** | SFB1010 | SFB1003 | SFB1004 | SFB1005 | SFB1006 | SFB1008 | SFC1004 | SFC1002 |  | SIB2001 | SIB2002 | SIB2003 | SIB2004 | SIB2005 | SIB2006 | SIB2012 | SIB2008 | SIB2016 | SIC2004 | SIB2013 | SIB2015 |  | SHB4001 | SHB4011 | SHB4003 | SHB4004 | SHB4005 | SHB4006 | SHB4007 | SHB4012 | SHB4018 | SHB4019 |
| 31 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  | X |  | X |  |
| 32 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |
| 33 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 35 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 36 | X | X | X |  |  | X |  |  |  | X | X | X | X | X |  |  | X |  |  |  |  |  | X |  |  |  |  |  | X | X |  |  |
| 37 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |
| 38 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 39 | X |  | X |  |  |  |  |  |  | X |  |  |  |  | X |  |  |  |  |  |  |  | X |  |  |  |  | X | X |  |  |  |
| 40 | X | X | X | X | X |  |  |  |  | X | X | X | X | X |  | X | X |  |  |  |  |  | X | X |  |  |  |  |  | X |  |  |
| 41 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 42 | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X | X | X |  |
| 43 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X |  |  |
| 44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X | X |
| 45 | X |  | X |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | X |  |
| 46 |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  | X |  |
| 47 |  | X | X | X | X | X | X | X |  |  | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 48 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| 49 |  | X | X | X | X | X | X | X |  |  | X | X | X |  | X | X | X |  | X |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 50 |  | X |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 51 |  | X | X |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |  |
| 52 |  |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| 53 |  | X | X |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| 54 |  | X | X |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X |  | X | X |  |  |
| 55 |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X |  | X |  |  |  |
| 56 |  | X | X | X | X | X | X | X |  |  | X | X | X |  | X | X | X |  | X |  |  |  |  |  | X | X | X | X | X | X |  |  |
| 57 |  |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| 58 |  |  | X |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Benchmark**ThresholdStandard | SFB1010 | SFB1003 | SFB1004 | SFB1005 | SFB1006 | SFB1008 | SFC1004 | SFC1002 |  | SIB2001 | SIB2002 | SIB2003 | SIB2004 | SIB2005 | SIB2006 | SIB2012 | SIB2008 | SIB2016 | SIC2004 | SIB2013 | SIB2015 |  | SHB4001 | SHB4011 | SHB4003 | SHB4004 | SHB4005 | SHB4006 | SHB4007 | SHB4012 | SHB4018 | SHB4019 |
| 59 |  | X | X | X | X | X |  |  |  |  | X | X | X | X | X |  |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |  |
| 60 |  |  | X | X |  |  | X | X |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| 61 |  | X | X |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 62 |  | X | X |  |  |  |  |  |  |  |  | X | X | X |  |  |  |  |  |  |  |  |  |  | X |  | X |  | X | X |  |  |
| 63 |  | X | X |  |  |  |  |  |  |  | X | X | X |  |  |  |  |  |  |  |  |  |  | X | X |  | X |  | X |  | X |  |
| 64 |  | X | X | X | X | X | X | X |  |  | X | X | X |  | X | X |  | X | X | X | X |  |  |  |  |  |  | X |  |  |  |  |
| 65 |  |  | X |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 66 |  | X | X |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |

Benchmarking falls in to three categories in the QAA Subject Benchmark statement for Biosciences (November 2015) under sections (4) Graduate and key transferable skills, (5) Core biosciences knowledge, understanding and skills and Benchmarking standards (7). In total there are 66 points summarized here with a simpler numbering system (used above) but otherwise verbatim from the original statement.