UNIVERSITY of BRADFORD

Faculty of Life Sciences

Programme Specification

Programme title: **Clinical Sciences**

Clinical Sciences/Medicine

Academic Year:	2018-2019
Degree Awarding Body:	University of Bradford
Partner(s), delivery organisation or support provider (if appropriate):	
Final and interim award(s):	BSc (Honours) [Framework for Higher Education Qualifications (FHEQ) level 6] BSc (Ordinary) [Framework for Higher Education Qualifications (FHEQ) level 6] Diploma of Higher Education [Framework for Higher Education Qualifications (FHEQ) level 5] Certificate of Higher Education [Framework for Higher Education Qualifications (FHEQ) level 4] Foundation Certificate [Qualifications and Credit Framework (QCF) /National Qualification and Credit Framework (NQF) level 3]
Programme accredited by (if appropriate):	GMC (Year 1 as part of University of Leeds MBChB)
Programme duration:	3 or 4 years full-time
UCAS code:	B990, B991
QAA Subject benchmark statement(s):	Medicine (2002), Biomedical Sciences (2007), Biosciences (2007), Health Studies (2008), Accounting (2007)
Date of Senate Approval:	
Date last confirmed and/or minor modification approved by Faculty Board	March 2018

Introduction

Clinical Sciences at the University of Bradford is a high-quality, multidisciplinary programme which provides students with integrated understanding of science and health-related issues in preparation for varied careers in healthcare, medicine, teaching, research and the pharmaceutical industry. The emphasis on Personal and Professional Development throughout the programme will provide students with the confidence and transferable skills to engage in effective lifelong learning in their future employment. Students will also develop research and critical analysis skills which are essential in the ever-changing medical and scientific landscape.

Clinical Sciences is a joint collaborative initiative between the Faculty of Life Sciences at the University of Bradford and the School of Medicine at the University of Leeds and has been designed to widen access for students, from under-represented groups, into medical and healthcare education.

Depending on an applicant's qualifications, experience and widening participation characteristics, entry to the programme is either via the Foundation Year or directly into Stage 1 of the BSc. This allows for different rates of development for students from a variety of educational backgrounds. Outreach activities with local schools and colleges are used to encourage able students from a wide range of backgrounds to enter higher education. The diversity of students on the course enriches the learning experience and produces graduates who respond appropriately to cultural and medical needs particularly in the local community.

The programme is informed by research and clinical expertise and offers opportunities for students to visit healthcare and community settings. In addition to a BSc in Clinical Sciences the course offers two routes to the MBChB programme at the University of Leeds.

The majority of students enter Clinical Sciences via the Foundation year and the normal expectation is that they would progress onto Stage 1 of the BSc or proceed onto another programme in this University. In that case students would not be awarded the Foundation Certificate as they would continue their studies and be awarded a Degree (or Certificate/Diploma in Higher Education). If students progress onto Year 1 of the MBChB programme at the University of Leeds or use the Clinical Sciences Foundation Year as a 'stand-alone' qualification for admission to programmes at other Universities, they will be awarded the Foundation Certificate in Clinical Sciences/Medicine.

Opportunities for Clinical Sciences graduates will reflect their balanced portfolio of clinical sciences, health studies, professional and transferable skills. In addition, Clinical Sciences has been proven to be an accepted and popular route into graduate medicine at Medical Schools throughout the UK. Depending on a student's chosen pathway through the course they will be able to embark upon a graduate career within the NHS including health service management, associate clinician, healthcare assistant and specialist clinical and healthcare scientists. The highly successful Pharmaceutical Industry also offers a wide variety of careers where graduates will be able to use their knowledge and skills to improve healthcare in the UK or worldwide; these include clinical trials, registration and regulatory affairs. The degree will also provide a sound scientific basis for postgraduate study and a career in teaching or research.

Programme Aims

The programme is intended to:

A1 Develop approaches to learning and teaching that are based on curiosity and exploration of knowledge in preparation for lifelong learning and reflective practice.

A2 Encourage autonomous learning, critical analysis and an understanding of the constraints and limitations of clinical and medical research.

A3 Produce graduates with excellent communication, teamwork, problem-solving, organisational and time management skills who are well prepared for employment or further study.

A4 Develop respect for colleagues and clients that encompasses, without prejudice, diversity of background and opportunity, language, culture and way of life.

A5 Equip Foundation Year students with basic biological, chemical, health and social sciences and essential transferable skills that are required for year 1 of Clinical Sciences or the MBChB Course at the University of Leeds.

A6 Develop knowledge and understanding of health and its promotion, healthcare management, the causes and mechanisms of disease, prevention and treatment.

A7 Provide the appropriate skills and knowledge to allow some students to enter the MBChB programme at the University of Leeds at year 1 or 2.

A8 Provide the appropriate skills and knowledge for optional pathways leading to a variety of healthcare and pharmaceutical-based careers.

Programme Learning Outcomes

To be eligible for the award of Foundation Certificate at QCF/NQF level 3, students will be able to:

LO1 Employ reflective practice, team-working and problem-solving skills;

LO2 Assess and reflect on personal and professional growth and recognise the importance of managing their time, self and resources effectively;

LO3 Apply self-directed learning skills to research, review and summarise science and health-related publications;

LO4 Employ oral and written presentation, problem-solving, numerical and laboratory skills;

LO5 Apply fundamental chemistry concepts to biological systems and medical treatments;

LO6 Identify and illustrate core aspects of human biology and anatomy;

LO7 Evaluate the roles of health and social care workers and the NHS;

To be eligible for the award of Certificate of Higher Education at FHEQ level 4, students will be able to:

LO8 Assess and reflect on personal and professional growth and understand the importance of managing their time, self and resources effectively;

LO9 Apply self-directed learning skills to research, review and summarise science and health-related publications;

LO10 Employ statistical methods, effective oral and written presentation, problem-solving and team-working skills;

LO11 Evaluate, discuss and apply core aspects of medical and behavioural sciences;

LO12 Appraise the scientific principles of the causes, symptoms, and treatment of cardiovascular, respiratory, renal, reproductive, urogenital and gastrointestinal disease;

LO13 Analyse the ethical and legal issues of healthcare;

Additionally, to be eligible for the award of Diploma of Higher Education at FHEQ level 5, students will be able to:

LO14 Reflect, analyse and take responsibility for their own progress and skills development using effective skills to manage their time, self and resources;

LO15 Develop and evaluate their personal and professional skills in preparation for graduate employment including effective oral and written presentation, problem-solving and team-working skills;

LO16 Research, review and analyse science and health-related literature and experimental data using independent learning skills;

LO17 Evaluate, discuss and apply core aspects of endocrinology and neuropharmacology;

LO18 Critically analyse and interpret health inequalities;

LO19 Optionally evaluate and discuss: clinical science, physiology and anatomy of the sensory and musculoskeletal systems, mechanisms of disease; genetic factors affecting health and disease, accounting and finance, conventional and alternative therapies;

Additionally, to be eligible for the award of Honours Degree of Bachelor at FHEQ level 6, students will be able to:

LO20 Critically evaluate their progress and identify effective action to develop their personal and professional skills in preparation for graduate employment;

LO21 Apply a variety of learning skills including reflective practice, independent learning, problem solving, team-working and leadership skills;

LO22 Research, review and critically evaluate science and health-related data with an appreciation of the uncertainty, ambiguity and limits of scientific knowledge

LO23 Apply subject-specific knowledge to new and familiar problems using effective communication, information retrieval skills and statistical techniques;

LO24 Critically evaluate the scientific basis of disease, its prevention and treatment;

LO25 Critically analyse and interpret issues in healthcare provision;

LO26 Optionally evaluate research-informed topics in: mechanisms of disease and drug action, healthcare and management studies

LO27 Optionally apply their personal and professional skills and knowledge in a related work environment

Curriculum

Depending on initial qualifications and background, applicants may enter Clinical Sciences at Stage 1 or via the Foundation Year. Students will study 120 credits at all levels of the Programme. The map of studies is detailed below showing core (C) and optional (O) modules.

The Foundation Year will provide the biological, chemical and numeracy skills required for Stage 1, Clinical Sciences and will provide a transition between The National Qualifications Framework level 3 and the Framework for Higher Education Qualifications level 4. Consideration of health concepts from a psychosocial perspective, the role and responsibilities of health and social care professionals and the consolidation of key skills will enable students to make an informed decision about their career pathway. Students who successfully complete the Foundation year will progress to Stage 1, Clinical Sciences and up to 20 eligible students (i.e. students who fulfil the appropriate widening participation criteria), subject to satisfactory grades (≥ 70% overall and at least 70% in Chemistry with no failed modules), application form and structured interview, may progress into year 1 of the MBChB Programme at the University of Leeds Medical School. The Foundation year is also accepted for entry to other programmes in Life Sciences or Health Studies and other UK Medical Schools.

Stage 1 will mirror the first-year learning outcomes of the MBChB programme at the University of Leeds. Students will use an integrated

systems-based approach to study physiological systems of the body and disease in addition to the underlying scientific principles and students will address multi-professional healthcare issues and develop their transferable skills. Successful completion of Stage 1 will allow students to either continue with the degree in Clinical Sciences or progress towards medicine. Up to 20 eligible (see above) students may progress into year 2 MBChB Programme at the University of Leeds Medical School subject to satisfactory performance (≥ 60% overall with no failed components or modules), application form and structured interview.

In Stages 2 and 3 of the Clinical Sciences programme students will continue with the themes of systems-based learning, drug action, healthcare issues and mechanisms of disease. Emphasis will be placed on the development of effective communication, cultural awareness and team-working skills to provide students with the confidence and competence to embark on a career in allied health professions. Students will be able to select modules from a range of clinical science, health studies and management modules such as physiological control systems, pathology, genetics & health, immunology, research topics in biomedical science, common diseases & their treatment, health economics, NHS structure, or accounting, subject to necessary prerequisites and timetable requirements. Special study modules will allow students to study a topic in depth and further develop their skills in critical analysis.

Stage 0

FHEQ Level	Module Title	Type (Core/ Option/ Elective)	Credit	Study Period	Module Code
3	Chemistry for Clinical Sciences	C	20	1 & 2	CLS3003-B
4	Biology for Clinical Sciences	C	20	1 & 2	CLS4007-B
4	Laboratory and Study Skills for Clinical Sciences/Medicine	C	20	1 & 2	CLS4006-B
3	Health and Society	C	20	1 & 2	CLS3001-B
3	Personal and Professional Development (Foundation)	C	20	1 & 2	CLS3002-B
4	Special Studies (Foundation)	C	20	1 & 2	CLS4008-B

At the end of stage 0, students will be eligible to exit with the award of Foundation Certificate if they have successfully completed 120 Level 3 QCF/NQF credits and achieved the specified learning outcomes.

Stage 1

FHEQ Level	Module Title	Core/ Option/ Elective	Credit	Study Period	Module Code
4	Integrated Medical Sciences	C	30	1 & 2	CLS4004-C
4	Personal & Professional Development, Society and Health	C	30	1 & 2	CLS4005-C
4	Cardiovascular, Respiratory and Renal Systems	C	20	1 & 2	CLS4002-B
4	Special Studies 1	C	20	1 & 2	CLS4001-B
4	Nutrition and Energy	C	20	2	CLS4003-B

At the end of stage 1, students will be eligible to exit with the award of Certificate of Higher Education if they have successfully completed at least 120 credits and achieved the award learning outcomes.

Stage 2

FHEQ Level	Module Title	Core/ Option/ Elective	Credit	Study Period	Module Code
5	Special Studies 2	C	20	1 & 2	CLS5005-B
5	Personal, Career and Professional Development	C	20	1 & 2	CLS5004-B
5	Endocrinology and Neurobiology	C	20	1 & 2	PHA5010-B
5	Immunology, Haematology and Transfusion Science	O1	20	1 & 2	BIS5012-B
4	Introduction to Accounting	O1	20	1 & 2	AFE4005-B
5	Skin, Sensation and Movement	O2	20	1	CLS5003-B
5	Clinical and Analytical Biochemistry	O2	20	1	BIS5013-B
4	Community & Public Health	O2/O3	20	1 or 2	HWS4005-B
5	Genetics and Health	O3	20	2	CLS5002-B
5	Pathology	O3	20	2	BIS5015-B
5	Mental Health & Wellbeing	O3	20	2	HWS5010-B
5	Health Education & Promotion	O3	20	2	HWS5002-B

At the end of stage 2, students will be eligible to exit with the award of Diploma of Higher Education if they have successfully completed at least 240 credits and achieved the award learning outcomes.

Stage 3

FHEQ Level	Module Title	Core/ Option/ Elective	Credits	Study Period	Module Code
6	Clinical Pharmacology	C	20	1 & 2	CLS6001-B
6	Economics of Healthcare Management	C	20	1 & 2	CLS6002-B
6	Special Studies and Personal & Professional Development 3	C	40	1 & 2	CLS6003-D
6	Research Topics 1 in Medical Biochemistry	O4	20	1	BIS6009-B
6	Research Topics 1 in Cancer Biology & Therapeutics	O4	20	1	BIS6007-B
6	Research Topics 1 in Medical Cell Pathology	O4	20	1	BIS6006-B
6	Research Topics 1 in Haematology and Transfusion Science	O4	20	1	BIS6013-B
6	CNS Mechanisms, Disorders and Therapeutics	O4	20	1	CLS6004-B
6	Independent Study	O4	10	1	HES6001-A
6	Common Diseases and their Treatment	O5	20	2	CLS6005-B
6	Biology of Disease	O5	20	2	BIS6012-B
6	Advanced Communication Skills	O5	30	2	NUR6015-C

Students will be eligible to exit with the award of Ordinary Degree of Bachelor if they have successfully completed 120 credits in both Level 4 and 5 and 60 credits at level 6 and achieved the award learning outcomes.

Students will be eligible for the award of Honours Degree of Bachelor if they have successfully completed at least 360 credits and achieved the award learning outcomes.

Placement and/or Study Abroad

This programme provides the option for students to undertake a voluntary work placement between *Stages 2 and 3.* This provides valuable experiential learning in a healthcare setting or in the pharmaceutical or biotechnology industries. Not only will this improve students' understanding of final year material, it may significantly enhance employment opportunities after graduation.

There are also opportunities to undertake an additional year of study through the International Student Exchange Programme (ISEP) in over 30 countries including the United States, Ghana, Uruguay and many European Universities. This is an exciting way for students to enhance their CV in an increasingly global environment and develop understanding of other cultures and language skills. There are no tuition fee costs for students on an ISEP exchange, most courses are taught in English and accommodation and meals are based on Bradford prices.

Eligibility to study abroad would be dependent on good attendance and an average of 60% in Stage 1 or Stage 2 of the BSc programme.

On successful completion of ARC5013-Z, students will be eligible for the award of University Diploma in Professional Studies.

For further information about study abroad opportunities please refer to http://www.bradford.ac.uk/international/erasmus-and-international-exchanges/

Learning and Teaching Strategy

The learning and teaching strategies recognise the wide diversity of educational backgrounds with which students may enter the programme and the different exit points of students and graduates. Consequently, a variety of teaching and learning opportunities are used to reflect the differences in learning styles between students and to address the various learning outcomes for the programme outlined on Pages 3 and 4. These are indicated in parentheses in the following section. Students are expected to demonstrate greater autonomy in their learning as they progress through the programme. Formative assessments are embedded throughout the programme to monitor students' progress. Students' knowledge and understanding and discipline skills are developed through lectures, practicals, group work, seminars, tutorials and computer-assisted and self-directed learning. Case studies, group work, individual assignments, verbal presentations, problem-based learning and a reflective portfolio will be used to develop students' personal transferable skills in self-directed learning and reflective practice in preparation for lifelong learning. Personal & Professional Development and Special Studies are key themes throughout the programme to enable students to build on essential transferable skills and focus on reflective learning.

In the Foundation year students will be introduced to basic concepts. Students will be assessed by examination for the breadth of knowledge and students' self-directed learning, presentation skills and group skills will also be assessed.

In Stage 1 students will acquire and learn to evaluate a broad knowledge of a variety of scientific and healthcare topics, which underpin the BSc in Clinical Science and the MBChB programme at the University of Leeds. Students will begin to develop the appropriate attitudes required for autonomous learning.

In Stages 2 and 3 students will be able to select a pathway from core and optional modules according to their personal strengths and career aspirations. In Stage 2 students will extend their knowledge and understanding in disease processes and the social impact of disease. Students will be more reliant on self-directed learning and be introduced to the analysis and synthesis of information. This is assessed in an investigative report. At stage 3 students will further develop their specialist subject knowledge and analytical skills. Students will be able to demonstrate this knowledge and analytical skills in essay based examinations, a variety of coursework assignments and a substantial critical dissertation.

Assessment Strategy

The assessment strategy is designed to allow students to demonstrate achievement of the learning outcomes of an individual module appropriate to the level of study and the learning outcomes of the programme. These learning outcomes are consistent with the Framework for Higher Education Qualifications. At levels 3-4, students will be examined, primarily, on the breadth of knowledge via MCQ and

EMQ. Coursework assignments will give the opportunity to gain experience in report writing and data handling and interpretation. As students progress through levels 5 and 6 they will have the opportunity to demonstrate increasing skills of analysis, synthesis and criticism through a wide variety of assessment strategies, including written examinations, report writing, case studies, group work, essays, oral presentations and the project report. The project report provides a major opportunity to demonstrate autonomy in data handling and critical interpretation in a research context

Assessment Regulations

This Programme conforms to the standard University Regulations which are available at the following link:

http://www.bradford.ac.uk/aqpo/ordinances-and-regulations/

Notwithstanding the entrance requirements for entry into the School of Medicine, University of Leeds, students may only progress from Stage 1, Clinical Sciences to year 2 of the MBChB programme at the University of Leeds if they have passed a 'First Aid at Work' assessment and undertaken an NHS placement at the end of Stage 1. All students who wish to transfer to the University of Leeds must sit the BioMedical Admissions Test (BMAT) in the same academic year.

Admission Requirements

The University welcomes applications from all potential students and most important in the decision to offer a place is our assessment of a candidate's potential to benefit from their studies and of their ability to succeed on this particular programme. Consideration of applications will be based on a combination of formal academic qualifications and other relevant experience.

The **minimum** entry requirements for the programme are as follows:

Students who fulfil widening access criteria should apply for Foundation year entry only. Our standard offer for the Foundation year to someone seeking entry through the UCAS scheme would be 104 points (old tariff: 260 points) from a maximum of 3 qualifications including a minimum of 2 A2 subjects at Grade C or above. For entry directly into Clinical Sciences, the minimum admission criterion is 120 points (old tariff: 300 points) from a maximum of 3 qualifications including A2 Chemistry and A2 Biology at Grade B or above.

BTEC National Diploma candidates should have a minimum of DMM (eligible for Foundation year entry only). Mature applicants with relevant experience and academic potential should contact the Admissions tutor for further advice. Overseas and EU students should also write to the Admissions tutor for guidance as they will not be eligible to transfer to the Medical Course but are encouraged to apply for the Clinical Sciences Programme. Students who do not fulfil widening access criteria can apply for entry to the Foundation year entry or directly into Stage 1 Clinical Sciences however they will not be eligible for transfer to the MBChB programme at the University of Leeds. International students should have IELTS 6.5 in place of English Language with not less than 6 in any sub-category and equivalent qualifications to GCSE in Science and Maths.

GCSE passes should include English, Mathematics, Biology and Chemistry (or Dual Award Science) at grade C or 4.

On completion of a UCAS form, students are initially selected on the basis of academic potential, motivation and interpersonal skills and offered a structured interview. Students will also have the opportunity to meet staff, view the facilities and discuss "the Bradford experience" with current students.

Recognition of Prior Learning

If applicants have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University has procedures to evaluate and recognise this learning in order to provide applicants with exemptions from specified modules or parts of the programme.

Minor Modification Schedule

Version Number	Brief description of Modification	Date of Approval (Faculty Board)
2	CLS4004-C: Change of delivery period to reflect modification of BSc Biomedical Science programme via Periodic Review	02/02/18 (Chair's Action)
3	Update to optional modules	14/03/18 (Chair's Action)