

Programme specification

1. Overview / factual information

Programme/award title(s)	MSc Biosciences
Teaching Institution	University Centre Leeds (UCLeeds)
Awarding Institution	The Open University (OU)
Date of first OU validation	August 2020
Date of latest OU (re)validation	September 2026
Next revalidation	September 2031
Credit points achieved for the award	180
UCAS Code (if applicable)	application is direct to UCLeeds
HECoS Code (if applicable)	100345 – biological sciences
LDCS Code (FE Colleges England only)	n/a
Programme start date and cycle of starts if appropriate.	September 2026
Underpinning QAA subject benchmark(s)	Quality Assurance Agency. (2020) Characteristics Statement: Master’s Degree. London: QAA. Quality Assurance Agency for Higher Education. (2023) Subject Benchmark Statements Biosciences. Fifth edition. Gloucester: QAA
Other external and internal reference points used to inform programme outcomes (including QAA	ST0759 Research Scientist Apprenticeship Standard

Characteristics Statements). For apprenticeships, the standard or framework against which it will be delivered.	
Professional/statutory/ accreditation recognition	N/A
For apprenticeships more information on integrated Assessment. EPAO being used.	Partly
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	3 modes: Full-time (100% face to face delivery) Part-time (100% face to face delivery) and Part time (mixed distance/face to face)
Duration of the programme for each mode of study	FT: 12 months; PT: 24 months; mixed distance/face to face: 24 months
Dual accreditation (if applicable)	N/A
Date of production/revision of this specification	April 2026

2. Programme overview

2.1 Educational aims and objectives

The Masters in Biosciences programme will give students an opportunity to study theoretical and practical aspects of a broad range of scientific disciplines at Masters level. Taught modules will help students to deepen their understanding of topics such as the organisation and functions of cells in a range of organisms, the molecular basis of disorders of the human body, the mechanisms by which toxins cause their effects in organisms and the ways in which

analysis of tissue, blood or urine samples can help clinicians treat patients most effectively.

The course will involve a large amount of laboratory practical work, allowing students to develop high-level skills in methods and technologies that are key to modern Bioscience research. For example, students will be able to practise laboratory techniques that are commonly used in cellular biology research.

The course will feature a 60-credit Dissertation module, supported by a 20 credit Preparation for Research module, which together will allow students to experience the planning (including literature searches and applying for ethical approval) and execution of a substantial self-directed research project. Through this, students will learn not only to utilise laboratory techniques to generate accurate and reliable data, but also how to manage time and shared resources in a busy working lab.

Throughout the course there will be an emphasis on the production, presentation and processing of data. Accurate and reliable measurements are critical in all scientific industries, and this course will emphasise the importance of data as well as teaching students how to evaluate the quality of data and manipulate it to draw valid conclusions. The Bioinformatics and Data Analysis module will support and enhance this, covering modern computer-based techniques for dealing with the large data sets that are increasingly common in Bioscience.

Employability and entrepreneurship are embedded across the MSc Biosciences programme through a range of authentic, research – informed assessments that require students to apply advanced scientific knowledge to real-world biological, clinical and industrial challenges. The students develop critical evaluation, data analysis, experimental design, and professional communication skills through tasks such as case studies, data analysis, laboratory reports, pilot studies and innovation- focussed pitch decks. These tasks foster employability by developing analytical, digital and problem-solving

skills, and support entrepreneurship through opportunity recognition, innovation and evaluation of feasibility and impact. These reflect current practices in the life sciences sector.

These assessments support the Level 7 Research Scientist apprentices with their End Point Assessment preparation. Studying on this programme, the apprentices develop the ability to design and evaluate experiments, analyse and interpret complex data, justify decisions using evidence and communicate their conclusions effectively to a diverse audience, using various methods. These tasks reflect the project, portfolio and professional discussion components of the End Point Assessment.

It aims to:

- Develop practitioners who have innovative approaches to the theory and practice of science
- Produce individuals who work in an evidence-led manner
- Develop a high level of ability in data analysis with critical evaluation to produce justified conclusions
- Produce postgraduates who can use existing information to inform decisions about the implementation of experimental procedures
- Enable postgraduates to manage, lead and respond to change
- Facilitate collaborative working
- Encourage postgraduates to formulate research priorities for the immediate future.
- Produce postgraduates who can plan and execute laboratory investigations independently and assess the results generated by these activities
- Produce postgraduates who can work independently and are confident and able problem solvers who can rise to meet challenges.
- Produce postgraduates who cultivate intellectual curiosity and intellectual independence through project-based, activity-orientated and self-regulated learning.
- Provide the opportunity for students to learn to use several industry-standard pieces of laboratory equipment; to follow

standard protocols in their use and to design their own experiments using these instruments.

2.2 Relationship to other programmes and awards

This course will provide a progression route to postgraduate study for students who complete our BSc Biomedical and Pharmaceutical Sciences programme, as well as for the Level 6 BSc(Hons) Scientist (Biological Scientist) apprentices. It will also map to the Level 7 Research Scientist Apprenticeship Standard, and as such will provide a progression route for apprentices on level 3 or level 6 programmes. This meets the requirements of employers and the regional strategy to provide a talent pipeline of qualified personnel to supply STEM industries.

The MSc Biosciences modules continue the line of teaching and the philosophy of the BSc(Hons) Biomedical and Pharmaceutical Sciences. Our Level 6 students who are now studying on this programme mentioned that being taught Genetic Mechanisms of Disease and Recombinant Technology and Next Generation Sequencing in Level 6 made it easier to cope with the requirements of the MSc programme regarding the level of molecular details, use of databases and criticality required. Being allowed to propose and conduct their own project for the Level 6 Undergraduate Research Project meant that the students felt more confident when they were asked to propose a short line of research tasks for the laboratory report in Advanced Concepts in Cellular Biology. The pathology approach during the undergraduate programme gives students the confidence to write the case studies and research projects report for Advanced Concepts in Cellular Biology, Molecular Biology and Genomics and Toxicology and Environmental Change.

The Level 6 BSc(Hons) Scientist (Biological Scientist) apprentices could follow a similar increase in confidence if asked by their companies to progress into Level 7 Research Scientist.

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of

how the work based learning and academic content are organised with the award.

Apprentices will attend the University Centre on a day-release model over 2 years, studying for, and being assessed on, the academic content of taught modules in the same way as other students.

The Level 7 Research Scientist Standard was developed by Trailblazers to provide staff development for laboratory science staff. The apprentices joining the programme could attend in person, if they are near enough to travel to Leeds or remotely, if not. The delivery is tailored to the type of attendance. The apprentices who attend remotely, will also attend a summer school to do the practical tasks required by the Advanced Concepts in Cellular Biology and Diagnostic Techniques modules. The rationale of organisation of modules for part-time delivery was to provide apprentices with the necessary tools and skills they require for the EPA in the first year of training. In the second year, the modules provide support in preparing a proposal for their Dissertation, enhancing their data analysis skills and research for their chosen Dissertation topic. The Dissertation topic is also used by apprentices for their Research project presented during the EPA. This approach was decided to ensure that apprentices are not overburdened by developing a project for Dissertation and another one for their EPA. Apprentices will complete work-based research with their employer, monitored and supported by academic staff. Most Level 7 KSBs standard statements are mapped to our programme, but there are some, such as those referring to the interaction with the external stakeholders, working as part of a team in the company and mentoring for example, that could not be mapped. This is not unusual for a programme without an integrated degree and can be easily addressed using the TLAPs prepared by our assessor.

Our team has experience of working remotely with apprentices to deliver a project based in the workplace and have a range of learning opportunities which are accessible by the student such as a dedicated VLE site as well as regular remote meetings.

Staff at University Centre Leeds have experience of working with apprentices, employers and End Point Organisations. Apprentices will receive input on the apprenticeship and EPA and will be prepared throughout their apprenticeship for the end-point assessment. Delivery

of the course will also highlight to apprentices (who will be able to access a separate range of resources through the VLE) where the course contributes to competences and will establish awareness of the close links of delivery and assessment with EPA.

The Programme Manager and Assessor will work with apprentices to ensure achievement and will offer support in tutorials and taught sessions, as well as Progress Review meetings. The Assessor will have Progress review meetings with the apprentices and their line managers and mentors every 8-10 weeks. During these meetings, the apprentices and their line managers and mentors will discuss the progress made by the apprentice. The Assessor will also be responsible for providing the link between the University Centre and the workplace and will monitor and work with line managers and mentors to support progress towards EPA. This close linking between workplace and academic institution will provide a strong foundation on which to base acquisition of the academic qualification as well as the Standard. The achievement of the OTJ training hours will be done using the Learning Journal and the tasks set by the assessor. The recording of the OJT training hours doesn't stop when the academic training stops. During the academic holidays, while apprentices are in the workplace they might learn a new technique or they might develop a new technique themselves. The recording of the OTJ training hours is carefully monitored by the assessor. If necessary, the assessor will remind apprentices to record their activity on OneFile. During their academic training sessions, the apprentices are given the opportunity to work on OneFile. Each module lecturer is made aware of the requirement that the apprentices should be allowed an hour to work on their academic or OneFile tasks.

Materials designed to support the evolution of the collaborative project involving the workplace will be used to ensure that targets are being met and progress continues at an appropriate rate.

Regular tutorial and review will provide support and will ensure that sufficient progress is being made. Continuous feedback to workplace mentors and line managers on apprentice engagement and achievement will also promote achievement and allow the business

organisation an awareness of how the taught elements map to the Standard.

2.4 List of all exit awards

Postgraduate Certificate (60 credits)

Postgraduate Diploma (120 credits)

Master of Science (180 credits)

3. Programme structure and learning outcomes

The teaching for modules will be delivered on 2 days per week for full time students, or 1 day per week for part time students (100% face to face or mixed distance/face to face). There will also be significant independent study for all modules. In order to complete the Dissertation module, students will initially be offered laboratory time for half a day per week and will be expected to conduct initial literature searches and plan their research outside of this time. In semester 2, one full day per week will be dedicated to laboratory work for the Dissertation module. Completion of the module may require students, at certain times throughout the year, to undertake laboratory work for more than 1 day per week. Access to laboratories for up to 5 consecutive days in a week will be provided at key points in the year so that students will be able to organise their time as is demanded by the nature of their research project. A full, detailed timetable of exactly when laboratories will be available to students will be provided.

Programme Structure - LEVEL 7						
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	Semester runs in	Available as single registerable module?
Advanced Concepts in Cellular Biology	20			Yes	1	
Molecular Biology and Genomics	20			Yes	1	
Bioinformatics and Data Analysis	20			Yes	1+2	
Preparation for Research	20			Yes	1	
Toxicology	20			Yes	2	
Diagnostic Techniques	20			Yes	2	

Programme Structure – LEVEL 7						
Dissertation	60			No	1+2	

Course Structure – Full Time

2 days per week plus one further day for independent laboratory work as needed. This extra day would be a supervised session – but without formal teaching. The *Bioinformatics and Data Analysis* module will be delivered asynchronously online over both semesters; however, this will be closely monitored and supported with regular tutorials. The course runs over 36 weeks (30 weeks of teaching plus 6 weeks to allow for more lab time in the Dissertation)

semester	am	Day 1	pm
1	Molecular Biology and Genomics		Advanced Concepts in Cellular Biology
2	Toxicology		Diagnostic Techniques
semester	am	Day 2	pm
1	Preparation for Research		Dissertation
			Tutorial
2	Tutorial		

	Dissertation
	Bioinformatics and Data Analysis (online asynchronous delivery)

Course Structure – Part Time 1 day per week with the option to access laboratories on a second day if necessary. (Apprentices may follow this structure on day release. There is *no requirement* for apprentices to attend more than one day per week, but in the *second year*, if extra time to work in our laboratories was deemed beneficial by tutors and the employer, this would be offered for short periods as needed.

Year 1 – 1 day per week covering 80 credits of taught modules. There are 30 weeks in this year

semester 1	Molecular Biology and Genomics		Advanced Concepts in Cellular Biology
2	Toxicology		Diagnostic Techniques

Year 2 – 1 day per week, plus further days for independent laboratory work *if required*. This extra time would be supervised – but with no formal teaching. Modules in year two total 100 credits. The *Bioinformatics and Data Analysis* module will be delivered asynchronously online in year 2 over both semesters; however, this will be closely monitored and supported with regular tutorials. There are 36 weeks in this year (30 weeks of teaching plus 6 weeks to allow for more lab time in the Dissertation)

semester 1	Preparation for Research		Dissertation
			Tutorial
2	Tutorial		

	Dissertation
	Bioinformatics and Data Analysis (online asynchronous delivery)

Course Structure – Distance learning, online with intensive summer school (Apprentices may follow this route)

Online delivery will be used for students who are unable to regularly attend the University Centre. Theoretical elements of the course will be delivered remotely; practical elements will be taught and assessed in an intensive summer school. Learning materials will be available on our VLE and taught sessions delivered via video calls. Progress monitoring and support will be provided via video calls. Students will attend practical sessions at the University Centre daily for 6 days to develop and assess practical skills.

September start: Year 1 – 80 credits of taught modules, mostly delivered online with practical work and assessment through a summer school.

Weeks 1-7	Molecular Biology and Genomics (all content and assessment online)
Weeks 8-15	Toxicology (all content and assessment online)
Weeks 16-21	Advanced Concepts in Cellular Biology (all theoretical content delivered online – one assessment online, one assessment in summer school)
Weeks 22-28	Diagnostic Techniques (all theoretical content delivered online – one assessment online, one assessment in summer school)

Weeks 29 & 30	No teaching – preparation time for summer school
Week 31	6-day intensive summer school - Day 1 – laboratory induction – Introduction to staff, lab safety and laboratory techniques & equipment, revision of assessment method. Short formative assessment (practical task) - Day 2 – Demonstration of techniques, formative assessment (practical task) - Day 3 – Demonstration of techniques, formative assessment (practical task) - Day 4 – Demonstration of techniques, formative assessment (practical task), final preparations for summative assessment - Day 5 – Demonstration of techniques, summative assessment (practical task) for Advanced Concepts in Cellular Biology - Day 6 – Demonstration of techniques, summative assessment (practical task) for Diagnostic Techniques
Week 32	Remote Completion of Assessment Writing lab reports. Submission of drafts. Tutorials discussing feedback. Final submission of lab reports by week 30

September start: Year 2 – covering 100 credits, delivered online with laboratory access for Dissertation research available at a four-week summer school. For employers who do not wish to release apprentices for four weeks, Dissertation lab work can be completed at the employers’ facilities with monitoring by University Centre staff (who will visit the facilities to ensure appropriate work is possible).

Weeks 1-30	Bioinformatics and Data Analysis (all content and assessment online over 30 weeks)
Weeks 1-7	Preparation for Research (all content and assessment online)

Weeks 8-28	Dissertation – initial planning and literature search – thorough and detailed planning of all methods and protocols that are to be used – all required equipment and chemicals identified and agreed with the supervisor Parts of the journal-style article (e.g. background, experimental methods) can be written at this stage before laboratory work begins
Weeks 29-30	No teaching
Weeks 31-34	4-week summer school (for apprentices not working in employers' labs) • Refresher induction – lab safety and recap of laboratory techniques and equipment • Intensive laboratory work for a formal scientific report • Face-to-face individual tutorials and progress monitoring
Weeks 35-38	Write-up period and preparation of final presentation (to be done online) Writing a journal-style article and final presentation. Submission of drafts. Tutorials discussing feedback. Final submission and presentation by week 36

January start: Year 1 – 60 credits of taught modules, delivered online with practical work and assessment through a summer school. Initial research and planning for the Dissertation module is conducted this year, and continues in Year 2. The Bioinformatics module is also introduced in this year and completed in Year 2

Weeks 1-6	Advanced Concepts in Cellular Biology (all theoretical content delivered online – one assessment online, one assessment in summer school)
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Weeks 7-13	Diagnostic Techniques (all theoretical content delivered online – one assessment online, one assessment in summer school)
Weeks 14-15	No delivery in this period – preparation for summer school
Week 16	6-day intensive summer school • Day 1 – laboratory induction – Introduction to staff, lab safety and laboratory techniques & equipment, revision of assessment method. Short formative assessment (practical task) • Day 2 – Demonstration of techniques, formative assessment (practical task) • Day 3 – Demonstration of techniques, formative assessment (practical task) • Day 4 – Demonstration of techniques, formative assessment (practical task), final preparations for summative assessment • Day 5 – Demonstration of techniques, summative assessment (practical task) for Advanced Concepts in Cellular Biology • Day 6 – Demonstration of techniques, summative assessment (practical task) for Diagnostic Techniques Submission of drafts.
Week 17	Remote Completion of Assessment. Writing lab reports. Tutorials discussing feedback.
Week 18-30	Bioinformatics and Data Analysis Part 1 (all content and assessment online over a total of 30 weeks in both years)
Week 18-24	Preparation for Research (all content and assessment online)
Week 25-32	Dissertation (8 weeks in total)

January start: Year 2 – 120 credits of taught modules are completed in this, although some of the Bioinformatics and Dissertation modules has been completed in the previous year.

Weeks 1-22	Bioinformatics and Data Analysis Part 2 (all content and assessment online over a total of 30 weeks in both years)
Weeks 1-13	Dissertation (13 weeks in total)
Weeks 14 & 15	No delivery in this period
Week 16-19	4-week summer school (for apprentices not working in employers' labs) Refresher induction – lab safety and recap of laboratory techniques and equipment Intensive laboratory work for a formal scientific report Face-to-face individual tutorials and progress monitoring
Week 20-21	Write up period and preparation of final presentation (to be done online). Writing a journal-style article. Submission of drafts. Tutorials discussing feedback.
Week 22-23	Online presentation for final assessment. Submission of a journal-style article
Week 24-30	Molecular Biology and Genomics (all content and assessment online)
Week 31-38	Toxicology (all content and assessment online)

Example Calendar – exact dates may change

	September start Year 1		
14-Sept-26	Molecular Biology and Genomics (all content and assessment online) (Including one day during reading week for independent study)		
21-Sept-26			
28-Sept-26			
5-Oct-26			
12-Oct-26			
19-Oct-26			
26-Oct-26			
2-Nov-26			
9-Nov-26	Toxicology (all content and assessment online)		
16-Nov-26			
23-Nov-26			
30-Nov-26			
7-Dec-26			
14-Dec-26			
21-Dec-26			Christmas Break
28-Dec-26			
4-Jan-27	Toxicology continued		
11-Jan-27			
		January Start Year 1	
18-Jan-27	Advanced Concepts in Cellular Biology (all theoretical content delivered online – one assessment online, one assessment in summer school) (Including one day during reading week for independent study)		
25-Jan-27			
1-Feb-27			
8-Feb-27			
15-Feb-27			
22-Feb-27			
1-Mar-27			
8-Mar-27	Diagnostic Techniques (all theoretical content delivered online – one assessment online, one assessment in summer school)		
15-Mar-27			
22-Mar-27			
29-Mar-27	Easter Break		
5-Apr-27			
12-Apr-27	Diagnostic Techniques (all theoretical content delivered online – one assessment online, one assessment in summer school)		
19-Apr-27			
26-Apr-27			
3-May-27			
10-May-27	No delivery in this period – preparation for summer school		
17-May-27			
24-May-27			
31-May-27	6-day intensive summer school		
7-Jun-27	Remote Completion of Assessment. Tutorials discussing feedback		
	September start Year 2	January continuing Year 1	

13-Sept-27	Preparation for Research (all content and assessment online) (Including one day during reading week for independent study)		
20-Sept-27			
27-Sep-27			
4-Oct-27			
11-Oct-27			
18-Oct-27			
25-Oct-27			
1-Nov-27			
8-Nov-27	Dissertation (online support with the possibility of lab work conducted in the workplace) – initial planning and literature search – thorough and detailed planning of all methods and protocols that are to be used – all required equipment and chemicals identified and agreed with the supervisor		
15-Nov-27			
22-Nov-27			
29-Nov-27			
6-Dec-27			
13-Dec-27			
20-Dec-27	Christmas Break		
27-Dec-27			
3-Jan-27	Dissertation continues		
10-Jan-28			
	September continuing Year 2	January Start Year 2	
17-Jan-28	Dissertation continues (Including one day during reading week for independent study)		
24-Jan-28			
31-Jan-28			
7-Feb-28			
14-Feb-28			
21-Feb-28			
28-Feb-28			
6-Mar-28			
13-Mar-28			
20-Mar-28			
27-Mar-28	Easter Break		
03-Apr-28			
10-Apr-28	Dissertation		
17-Apr-28			
24-Apr-28			
1-May-28			
8-May-28			No delivery in this period
15-May-28			
22-May-28			
29-May-28	4-week summer school (for apprentices not working in employers' labs)		
5-Jun-28			
12-Jun-28			
19-Jun-28			

	Refresher induction – lab safety and recap of laboratory techniques and equipment	
	Intensive laboratory work for a formal scientific report	
	Face-to-face individual tutorials and progress monitoring	
26-Jun-28	Write-up period and preparation of final presentation (to be done online)	
3-July-28		
	Writing a journal-style article. Submission of drafts. Tutorials discussing feedback.	
10-July-28	Online presentation for final assessment. Submission of a journal-style article	
17-July-28		
	End of ‘September start’ programme	
11-Sept-28		Molecular Biology and Genomics (all content and assessment online) (Including one day during reading week for independent study)
18-Sept-28		
25-Sep-28		
2-Oct-28		
9-Oct-28		
16-Oct-28		
23-Oct-28		Toxicology (all content and assessment online)
30-Oct-28		
6-Nov-28		
13-Nov-28		
20-Nov-28		Toxicology continued
27-Nov-28		
4-Dec-28		
11-Dec-28		
18-Dec-28	Christmas Break	
25-Dec-28		
1-Jan-29		
8-Jan-29		

Intended learning outcomes at Level 7 are listed below:

<u>Learning Outcomes – LEVEL 7</u>	
3A. Knowledge and understanding For apprenticeship delivery: detail the KSBs to show that link/alignment with degree apprenticeships (and which support that curriculum map featured at the end of the document)	
Learning outcomes:	Learning and teaching strategy/ assessment methods
A1 – Critically analyse and evaluate key areas of biological, biomedical, pharmaceutical and data sciences A2 – Critically evaluate recent advances in the production and analysis of chemical or biological data in relevant industrial contexts A3 – Evaluate practical techniques to inform the planning or execution of research activities, including ethics, hazards, environmental effects, sustainability, or budget.	• Lectures • Seminars and student-led discussions based on individual research tasks • Problem classes and workshops • Self-directed learning Assessment methods • Workshops with vocationally relevant essay style (or longer answers) question • Seminar discussions with a formal structure • Poster and oral presentations with audience questions • Production of a formal scientific paper • Presentation of results, including audience questions

3B. Cognitive skills

For apprenticeship delivery: detail the KSBs to show that link/alignment with degree apprenticeships (and which support that curriculum map featured at the end of the document)

Learning outcomes:	Learning and teaching strategy/ assessment methods
B1 – Identify and critically analyse literature sources in order to evaluate scientific practices and relate them to their own research. B2 – Synthesise information from a variety of sources, including in areas at the forefront of knowledge or outside of own specialist knowledge, to form conclusions B3 – Apply advanced knowledge to the solution of complex problems, including those in which there is no one unique solution	• Lectures • Seminars • Problem classes and workshops • Independent online learning Assessment methods • Seminar discussions with formal structure • Poster and oral presentations with audience questions • Data analysis tasks • Case studies • Production of formal scientific paper • Presentation of results including plenary

3C. Practical and professional skills

For apprenticeship delivery: detail the KSBs to show that link/alignment with degree apprenticeships (and which support that curriculum map featured at the end of the document)

Learning outcomes:	Learning and teaching strategy/ assessment methods
C1 – Design and manage original research plans using up-to-date standard techniques and methodologies C2 – Collaborate with peers in order to formulate and justify proposed changes C3 – Synthesise information from several sources in order to produce accessible, clear and concise summaries. C4 – Critically appraise laboratory procedures against standards of good ethical, safety, environmental or sustainable practice	• Self-directed learning • Laboratory activities • Demonstrations • Simulations and interactive electronic activities, including simulations of laboratory practical activities Assessment methods • Poster and oral presentations with audience questions • Laboratory practical activities • Reports in formal scientific style • Data analysis tasks

3D. Key/transferable skills

For apprenticeship delivery: detail the KSBs to show that link/alignment with degree apprenticeships (and which support that curriculum map featured at the end of the document)

Learning outcomes:	Learning and teaching strategy/ assessment methods
D1 – Create and manage original plans for independent projects, working individually or in cooperation with others D2 – Employ appropriate IT tools to store, analyse and communicate data and research findings D3 – Evaluate research findings, considering aspects such as the context and potential impact of the findings.	• Self-directed independent learning • Demonstration and self-development of specialist IT skills • Laboratory activities • Demonstrations • Simulations and interactive electronic activities Assessment methods • Poster and oral presentations with audience questions • Reports in formal scientific style • Data analysis tasks • Case studies • Production of a formal scientific paper • Formal presentation of results, including plenary

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive features such as:**
 - where in the structure above a professional/placement year fit in and how it may affect progression
 - any restrictions regarding the availability of elective modules
 - where in the programme structure students must make a choice of pathway/route
- **Additional considerations for apprenticeships:**
 - how the delivery of the academic award fits in with the wider apprenticeship
 - the integration of the 'on the job' and 'off the job' training
 - how the academic award fits within the assessment of the apprenticeship

We believe we have developed an offering that delivers a broad range of theoretical knowledge, whilst also being heavily practical based. It has been developed with input from many local companies and will develop the knowledge and skills of students in areas of biology that are valued by employers. A broad and practical-skills-focussed course like this is not available from any local competitors.

The programme places an emphasis on the balance between core scientific theory and skills, setting both into industry-relevant contexts, informed by discussion with several employers. It aims to produce students with the tools to succeed in employment with appropriate transferable skills, as specified by our industrial contacts. These are regularly updated and feed into delivery.

There is an outstanding range of opportunities to develop practical scientific experience valued by sectors such as environmental, bioscience or biotechnology industries. For example, the module Diagnostic Techniques provides opportunities for students to learn the theoretical background to, and practise the use of, laboratory

instruments that are routinely used in clinical, environmental or forensic applications.

There is also some focus on the business of scientific industries. For example, in the Preparation for Research module students are required to write research proposals with a consideration for aspects such as budgeting, project management and resource management.

Unlike traditional courses at other institutions, almost all of our teaching takes place in laboratories, with very little delivery in classrooms. We strongly believe that the use of practical activity-led teaching in most of the modules sets this course and its students apart from the majority (where most teaching will be in lecture theatres and classrooms, supplemented by laboratory-based teaching in separate sessions).

We believe the proposed course offers a unique level of support from staff who all have expertise in their field plus academic and industrial research experience but have roles in the University Centre that are very student-first and teaching-focussed. Students will benefit from an environment in which there will be high levels of contact time with staff. They will have a high degree of autonomy in designing their own research projects (within constraints of budget and availability of suitable supervisors). Assessments in the research-based modules will allow students to experience a comprehensive range of the key activities involved in research, including literature surveys, writing grant proposals, obtaining ethical authorisation to conduct research, and communicating research findings through authoring journal articles and preparing conference presentations. All these activities will involve developing a range of transferable skills (criticality, budgeting, time management, negotiating skills, written and verbal communication using specialist vocabulary) that will be equally valuable to students whether their future is academic or industrial.

We consulted carefully with a range of employers to ensure that both the theoretical content and the practical experience that is delivered fits their requirements, ensuring that our postgraduates have the best chance of being well-equipped to compete for jobs in the science sector.

The range of modules will offer an excellent opportunity to work across disciplines, providing an innovative and contemporary way of developing scientific skills. This is particularly well-evidenced in the Toxicology and Environmental Change, Preparation for Research and Dissertation core modules, through which students will gain experience of techniques specific to both bioscience and chemical laboratories.

The balance of applied and broad theoretical content also sets this programme apart from many others, providing opportunities for students to progress into a range of industries. This would not be possible for postgraduates of equivalent courses from local competitors where there is not the opportunity to study such a breadth of topics. This has also been cited by employers as a reason for their choosing to offer apprenticeships through the department.

The industry-relevant skills that the programme supports include using industry-relevant instruments produced to use volumes of samples up to 15 microlitres to avoid unnecessary waste of sample and environmental pollution, such as the Nanodrop spectrophotometer (UV-Vis and fluorescence), Celldrop, which allows the researcher to quantify the cellular viability using only 10 microlitres of cell suspension. This instrument allows the analysis of mammalian and yeast cells using its unique functions to read the samples in both UV and Vis range, using either Trypan blue or Propidium iodide and acridine orange as dyes, in minute quantities. This allows the protection of the environment against the carcinogenic effects of these markers. Another industry-specific skill is the use of the advanced imaging technique (confocal fluorescent microscopy) to analyse cells in culture. This is extremely valuable especially for apprentices and students who work or will work in laboratories that test various chemical compounds using in vitro methods. One other skill is the use of various types of PCR techniques (qualitative and quantitative) which is highly appreciated in healthcare laboratories. The Diagnostic Techniques module is a novelty in the MSc Biology-based programmes, as mentioned by our External Examiner, as it follows the implementation and use of some research techniques in healthcare and industry-based laboratories, to diagnose qualitatively

and quantitatively the presence of ions, drugs, proteins, DNA or fragments of DNA in the biological samples that are provided by patients. The techniques used in the module are atomic emission spectrophotometry, ion-selective electrodes, quantitative PCR, cellular viability and advanced imaging. While these are industry-specific skills, the MSc Biosciences programme provides postgraduates with the opportunity to learn and/or improve a series of skills such as critical analysis and evaluation, use of programming to analyse data, research proposal writing, case study writing, use of large databases, project management. These skills can be easily transferred in other careers than science-based ones.

Our MSc Biosciences graduates progressed into jobs such as programme manager, study director, and regional study coordinator.

5. Support for students and their learning

At University Centre Leeds we have a specialised Student Support team where students can access support for learning, wellbeing, welfare, and financial support, designed to suit the needs of individual students and support their studies. This support includes access to diagnostic assessments and an Additional Learning Support Officer who can provide disability advice and Study Skills for students with a disability, neurodiversity, diagnosed mental health condition, or long-term health condition. The team will support eligible students to apply for Disabled Students' allowance (DSA); a government grant to provide individualised support such as specialist computer equipment, assistive software, mentoring support, study skills support, and/or or help with travel costs. Working with the student, the team will agree tailored support for learning including accessible learning practices, adjustments, and additional considerations. Our Counsellors provide tailored support to students including confidential short term counselling support, workshops, mentoring, referral and signposting, self-care tools, and resources to promote resilience and positive mental health. Our Student Funding and Welfare Adviser provides students with support to help understand how student finance works, find out what financial support is available, apply for student finance, how to manage budgets and

money matters, and other financial guidance and advice to ensure students feel prepared financially whilst studying. They also offer advice on bursaries and financial support available. The Student Accommodation Adviser can support students to find suitable housing options that are right for them to study, socialise and mix with other like-minded students. They will offer guidance on accommodation available and ensure that all students feel supported, included, and equipped to succeed. There is also specific support available for students who have cared experienced, estranged, carers, or seeking sanctuary.

Students will be assessed either very early or even before the beginning of the course to identify any additional support needs. The apprentices will also be assessed in the first weeks of the course. Our academic coach has a 15–20-minute meeting with each apprentice on the programme, during which the need for support is identified, if it exists. The meetings with the apprentices working with us remotely are held via Teams. If there is any support requirement, this will be confirmed by our HE Learning Support officer, who will also advice on the advanced learning support that will be put in place. We had instances when the apprentices disclosed the need to be supported. In these cases, we advised them to contact the HE Learning Support officer, who was also contacted by the Programme manager.

A detailed induction programme has been designed specifically for master's students to introduce them to the key features of the course, the methods of working such as use of the VLE and safe working practice in the laboratories and the academic requirements of assessment at level 7. The structure and regulations of the course will be explained at this point in addition to a skills scan and advice on academic skills and library support. Students will be introduced to the learning support officer and made aware of the support available and how to access it.

Induction will also include activities to give students hands-on experience of using the University Centre IT systems, laboratory equipment and facilities whilst also being engaging and providing opportunity for students to interact socially and become comfortable with the environment.

This induction programme will take place over a single day and will be offered to both full-time and part-time students.

Each student (whether full-time or part-time) will be allocated a tutor for regular tutorials and personal development planning. The personal tutor will also provide pastoral care, plus the department has a coach who will provide ancillary support where needed. Additional learning support is provided by a dedicated University Centre learning support officer.

These arrangements will be implemented in the first term and continued throughout all years of study.

Part-time students will have access to support materials through the VLE and will be able to contact staff for support remotely using the VLE and other communication tools through email and One File. Regular tutorials, and the ability to contact a tutor electronically, will also provide support and a means for signposting other forms of support should they be needed.

Apprentices will receive additional support in the workplace through their mentors and work-based assessors. Each apprentice is attached to a designated Assessor Trainer who records achievement and provides preparation for End Point throughout the course including use of mini-mock assessments for each Competence.

Academic support beyond the delivery of modules will be provided by staff, aided by study skills support tutors. This will be tailored to the needs of each student – challenging the highest achieving to go even further whilst providing support for those struggling in any areas. Staff holidays are managed, wherever possible, to ensure at least one person is available during vacations.

The library and librarian will provide a range of services to help students in finding information and producing high quality work that complies with set academic standards. Sessions will be delivered on simple

academic online searching as well as more comprehensive literature search strategies, understanding and avoiding plagiarism and correct referencing style.

Apprentices, who would be attending the University Centre only on one day per week, or those who are studying the course remotely, will have access to an increasing range of textbooks available remotely as e-books. Learning materials, including journal articles and extracts from textbooks, will be available online through our VLE. The academic librarian will be available remotely through email and other electronic systems to provide support and guidance in a timely manner.

Support for preparation for the end-point assessment will be built into the apprenticeship timetable.

6. Criteria for admission

	Typical offer	Minimum Offer
Undergraduate Degree	2(ii) or above BSc(Hons) in Biological or Biomedical Sciences or related discipline	Level 6 qualification in a relevant subject or suitable experience in a relevant job role
GCSE English:	Requested but not required if IELTS 5.5 or above is held	
IELTS:	5.5 or above	
International qualifications:	Equivalent to Level 6 in the relevant subject	
Mature applicants:	We welcome applications from mature* applicants who may not have met the academic criteria, but who can demonstrate potential academic ability and a wealth of experience in their chosen field. Candidates in this category and otherwise are likely to be interviewed to assess their suitability for the course and may be asked to provide a portfolio of evidence to support their application. <i>*21 years and over at the start of the course</i>	

RPL claims:	The course structure actively supports claims for Recognition of Prior Certified Learning (RPCL) or Recognition of Prior Experiential Learning (RPEL)
The criteria used by employers to recruit for this standard are found on the Research Scientist Skills England website: https://skillsengland.education.gov.uk/apprenticeships/st0759-v1-0	

7. Language of study

English

8. Information about non-OU standard assessment regulations (including Professional Statutory Recognised Body requirements)

N/A

9. For apprenticeships in England, summary of how the End Point Assessment (EPA) links to the academic award

The programme can be used to support achievement of the Level 7 Research Scientist Standard, delivered in a day release model over a period of 2 years, where apprentices will complete 3 or 4 modules per year of study to achieve the MSc and allow completion of project work in preparation for end-point assessment (EPA). The apprentices will receive training that will allow them to develop their practical skills beyond the tasks required by their workplace; they will also improve their communication skills by the tasks requiring presentation of information in another manner than the laboratory reports. Also, apprentices will learn how to use available and appropriate databases to collect information, and how to use scientific information to write project proposals or research proposals. EPA for this Standard requires a project report, presentation and questioning (based on a work-based project), and professional discussion underpinned by a portfolio of evidence. In line with our department's experience of offering other Science Standards, additional support will be scheduled within tutorial time, within the teaching timetable and with an assessor at the end of each academic year. The evidence will be collated on the OneFile platform.

Support for apprentices begins at recruitment, where apprentices complete initial tests to assess any additional needs for support. Induction contains an introduction to the structure and regulations of the course, in addition to a skills scan and advice on academic skills and library support (with research and referencing). Apprentices receive individual support through tutorials and are assigned a pastoral tutor, who will meet each apprentice once per half term, in addition to being the first port of call when a support need arises. All apprentices have access to welfare and may access specialist support through the learning support mentor. The VLE supports apprentices with further resources and extension and is available 24/7 anywhere with internet access and contains not only module-specific areas but also additional sites to support apprentices, including tutorial resources, an academic skills area and preparation for EPA. The nature of the VLE allows each apprentice to access a bespoke remote delivery system tailored to their needs and timely progress.

Apprentices attend only one day per week and are supported by strong communications between the teaching team, work-based assessor and the workplace. At least weekly communication takes place so that any issues are picked up and addressed as they begin. This includes attendance reporting as well as performance and behaviour (as enshrined within the Standard). The crucial requirement for apprentice success is the cohesive and coherent interaction of the college team with the workplace.

Apprentices are taught in specialist laboratories using a mixture of lecture, practical and workshop activities with access to specialist tutorials and additional resources, including the course textbook and VLE sites. Tutors on the programme are highly qualified and experienced subject specialists with industry experience, which allows a comfortable and targeted working relationship based on common knowledge and outlook.

End point assessment (EPA) requires the apprentices to have gained knowledge and training and to be able to produce evidence of this. EPA is performed by an external assessor appointed by the end point assessment organisation (EPAO) selected by the employer. The requirements to progress to the end point and to succeed are determined by the EPAO. EPA will be supported by close working of the teaching team with the work-based assessor and use of a range of teaching materials offered through the VLE, including opportunities to develop material for the portfolio in addition to interactive activities to develop and test knowledge in preparation for end

point. The team has extensive experience of developing these resources for lower-level Standards and has received excellent feedback on their utility and availability by this route.

The programme prepares the apprentices for the EPA by providing opportunities for apprentices to learn or sharpen the skills required to pass the EPA, such as writing a research proposal, writing a project report, analysing the data collected using the proposed line of experiments, communicating information in different ways, using advanced statistical analysis, justifying a budget, to name a few.

While the standard is not an integrated degree route, the level of knowledge required by the EPA is not easily achieved in the absence of a taught element. This element ensures the exchange of ideas and a specific professional discussion required for the acquisition of skills at this level.

10. Methods for evaluating and improving the quality and standards of teaching and learning including the student experience

In addition to the Annual Programme Monitoring process the following mechanisms are in operation:

- Peer Review
- Annual Planning
- Peer Observation
- Student module reviews
- Tutor module reviews
- Enrolment and induction reviews
- Course Committee meetings
- Pathway Committee meeting
- Student Pathway meetings

11. Changes made to the programme since last (re)validation

There have been no minor or major modifications to the programme

Annex 1 – Curriculum map

This table indicates which study units assume responsibility for delivering (shaded) and assessing (✓) particular programme learning outcomes.

Level	Study module/unit	A1	A2	A3	B1	B2	B3	C1	C2	C3	C4	D1	D2	D3
7	Molecular Biology and Genomics	✓					✓	✓						✓
	Advanced Concepts in Cellular Biology		✓			✓		✓				✓		
	Bioinformatics and Data Analysis		✓							✓			✓	
	Toxicology	✓					✓				✓	✓		
	Preparation for Research				✓						✓		✓	
	Dissertation			✓	✓	✓		✓	✓					✓
	Diagnostic Techniques			✓					✓	✓				

Annex 2 – Curriculum mapping against the apprenticeship standard

This table indicates which study units assume responsibility for delivering (shaded) and assessing (✓) particular knowledge, skills and behaviours.

Level	Study module/unit	K1	K2	K3	K4	K5	K7	S1	S2	S3	S4	S5	S6	S7	B1	B2	B6
7	Molecular Biology and Genomics	✓		✓		✓	✓	✓			✓						✓
	Advanced Concepts in Cellular Biology	✓				✓			✓							✓	
	Bioinformatics and Data Analysis					✓							✓				
	Toxicology	✓		✓								✓					✓
	Preparation for Research		✓							✓				✓	✓	✓	
	Dissertation		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓
	Diagnostic Techniques	✓				✓		✓			✓					✓	