Programme specification

1. Overview/ factual information

Programme/award title(s)	BSc (Hons) Biomedical & Pharmaceutical Sciences
Teaching Institution	University Centre Leeds (Leeds City College)
Awarding Institution	The Open University (OU)
Date of first OU validation	July 2016
Date of latest OU (re)validation	June 2021
Next revalidation	June 2026
Credit points for the award	120 credits for BSc (Hons)
UCAS Code	CF16
HECoS Code	(100392) applied science
LDCS Code (FE Colleges)	
Programme start date and cycle of starts if appropriate.	September 2021
Underpinning QAA subject benchmark(s)	Biomedical Sciences 2019, Biosciences 2019, Chemistry 2019
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	UK Quality Code for Higher Education (2018) Good Laboratory Practice (Directive 2004/10/EC and Directive 2004/9/EC); COSHH, CLP and REACH safety and labelling guidelines for storage of chemicals. Institute of Biomedical Sciences Degree Apprenticeship Laboratory Scientist Standard
Professional/statutory recognition	None
For apprenticeships fully or partially integrated Assessment.	Partially integrated
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	FT and PT
Duration of the programme for each mode of study	FT 1 year; PT 2 years

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

2.1 Educational aims and objectives

The overall aims of the programme are to produce graduates who:

- have a clear, in-depth knowledge of aspects of biological and chemical sciences that are relevant to biomedical and pharmaceutical industry sectors
- have developed an understanding of the mechanisms of human pathologies and relate these to established and emerging diagnoses and treatments for these
- are able to work confidently and independently, to reflect and learn from experience
- have developed competencies in practical laboratory techniques common in biomedical and pharmaceutical industries
- can relate practical laboratory experience to theory, knowledge and standards of good practice
- are "good employees" having both technical competencies and professional aptitudes with a clear understanding of the industry and workplace

Dual accreditation (if applicable)	N/A
Date of production/revision of this specification	May 2021

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

The BSc (Hons) programme provides an internal progression opportunity for students on our Foundation Degree in Biomedical and Pharmaceutical Sciences. We would also accept external applicants who have level 5 qualifications such as Foundation Degrees, HNDs, or Diplomas of Higher Education in relevant subjects

The programme may also form the final year of the Degree Apprenticeship Laboratory Scientist Standard. The Degree Apprenticeship Laboratory Standard comprises of the Foundation Degree in Biomedical and Pharmaceutical Sciences at levels 4 and 5 followed by this programme. Apprentices must complete (pass) the Foundation Degree to progress onto the final year of study. Upon completion of the Degree Apprenticeship Laboratory Standard, apprentices can seek employment or progress onto an

appropriate L7 Masters programme such as the MSc in Biosciences, dependent upon their employer, apprentices could also progress onto the L7 Research Science Apprenticeship.

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.
The academic content of the degree apprenticeship is fully met by completion of the Foundation Degree in Biomedical and Pharmaceutical Sciences and the BSc (Hons) in Biomedical and Pharmaceutical Sciences. Please see mapping of the Top-up curriculum in Annexe 3 - Curriculum mapping against the apprenticeship standard. Completion of the Degree Apprenticeship Laboratory Scientist can follow either the full-time or the part-time route. The work-based learning aspect of the apprenticeship will be met by a college assessor. As per the apprenticeship guidelines, the assessor will visit apprentices within the workplace observing and signing off a variety of tasks required to meet the competences stated within the apprenticeship standard. Liaison between the college assessor, teaching team and work-based mentor ensures that each apprentice is supported.

2.4 List of all exit awards
BSc (Hons) Biomedical & Pharmaceutical Sciences – 120 credits (80 in compulsory modules plus any two optional modules) BSc Biomedical & Pharmaceutical Sciences – 60 credits (any three 20-credit modules. This does not include the 40-credit *Undergraduate Research Project*) Degree Apprenticeship Laboratory Scientist – 120 credits (80 in compulsory modules plus any two optional modules) to achieve honours degree plus End Point Assessment

Programme Structure - LEVEL 6			
Compulsory modules	**Credit points**	**Is module compensatable?**	**Semester runs in**
Undergraduate Research Project	40	N	1 & 2
Research Skills	20	Y	1
Recombinant Technology & Next Generation Analysis	20	Y	2
Optional modules	**Credit points**	**Is module compensatable?**	**Semester runs in**
Microbial Pathology	20	Y	2
Genetic Mechanisms of Disease	20	Y	1
Pharmaceutical Analysis & Toxicology	20	Y	2
Drug Synthesis	20	Y	1

Full time route

Over two days per week for one year.

The *Undergraduate Research Project* module is run throughout the year, allowing students' time to develop and fully interrogate a scientific brief. This is supported by the first semester delivery of *Research Skills*, which will aid achievement and excellence in the research project. The laboratory-based options modules *Microbial Pathology*, *Drug Synthesis*, *Genetic Mechanisms of Disease* and *Pharmaceutical Analysis & Toxicology* provide a range of industrially relevant topics as well as enabling students to develop key practical skills. An understanding of modern molecular biology is covered in *Recombinant Technology & Next Generation Analysis*.

Semester One	**Semester Two**
Undergraduate Research Project (40 credits)	
Research Skills (20 credits)	Recombinant Technology & Next Generation Analysis (20 credits)
Either Genetic Mechanisms of Disease **or** Drug Synthesis (20 credits)	Either Microbial Pathology **or** Pharmaceutical Analysis & Toxicology (20 credits)

Part-time Route

The part-time programme is offered over one day per week for two years. It is seen as an opportunity for students for who full-time is too great a commitment but additionally targeting students on apprenticeship programmes or employees on day release schemes. Part-time students would in-fill with full-time groups running concurrently. A typical timetable for a student progressing through a part-time route is given below, although this may differ slightly depending on the needs of the student.

Year one

Semester One	**Semester Two**
Either Genetic Mechanisms of Disease **or** Drug Synthesis (20 credits)	Recombinant Technology & Next Generation Analysis (20 credits)
	Either Microbial Pathology **or** Pharmaceutical Analysis & Toxicology (20 credits)

Year two

Semester One	**Semester Two**

Research Skills (20 credits)	
Undergraduate Research Project (40 credits)	

Degree Apprenticeship Laboratory Scientist

The BSc (Hons) Biomedical & Pharmaceutical Sciences programme is mapped against the Degree Apprenticeship Laboratory Scientist Standard. Apprentices will be able to complete the Standard on either a full-time or a part-time basis as indicated above. Apprentices following the full-time route will be expected to carry out the Undergraduate Research Project module in the workplace. Apprentices will be able to access the laboratories and University Centre facilities as normal. If, however, the carrying out of the Undergraduate Research Project is not possible in the workplace for any reason, apprentices will be able to access the set Undergraduate Research Project sessions on the full-time route.

Intended learning outcomes at Level 6 are listed below:

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A1 Demonstrate detailed knowledge and understanding of key areas of science. A2 Demonstrate in-depth knowledge of a range of laboratory techniques; select an appropriate technique for a given purpose and justify the choice A3 Critically appraise recent scientific developments and their impact upon the scientific or wider community	Key Learning and Teaching Strategy Methods The programme will place strong emphasis on providing a solid practical experience which will enhance and embed theoretical knowledge allowing learners to develop valuable skills in addition to confident understanding. These laboratory and lecture experiences will be supported by workshops and problem-based classes with provision of on-line guided learning and self-assessment. Subject-specific VLE areas hosted on the Moodle platform also offer extension and support materials which can be accessed at any time by students with an internet connection. Students will use reflective activities for learning and development of advanced practical skills, such as experimental design and planning (some of which will be entered into through the Undergraduate Research Project module). Group and individual presentations will be used to strengthen student learning and to provide a basis for industry-style assessment, developing employability skills. Lectures and seminars will include specialised speakers with research experience and invited industry specialists. Key Assessment Strategy/Methods

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
	Each module has both formative and summative assessment including early assessment to support transition. All modules have assessment which divides the learning outcomes between two tasks so that achievement is balanced over two forms of assessment. All outcomes are assessed in a summative manner but supported with formative work in preparation such as practice questions or online quizzes. Assessment guidelines have been followed in terms of the amount and extent of assessment with detailed attention to the workload that each piece places on the student. A variety of assessment methods are used including viva, written and laboratory practical work to provide a good experience in preparation for employment. The team ensures this through good working relationships in addition to a commitment to prepare students for entry into the science industry. Feedback is delivered in a variety of ways including, written, online and verbal within appropriate time scales (immediate during laboratory work, moderated and within three weeks for summative work for example. Design of assessment wherever possible offers an experience similar to a possible work-based scenarios in industry.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1 Critically analyse and interpret information from literature sources or laboratory measurements B2 Test hypotheses (given or self-proposed) and formulate valid conclusions through logical argument. B3 Apply knowledge and appropriate methods to solve complex problems with reference to ethical guidelines where appropriate.	As above

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1 Plan and execute laboratory work safely and ethically with minimal supervision C2 Collect and record accurate data and choose appropriate methods to store, process and display data	As above

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1 Communicate complex information in a clear and appropriate style D2 Work independently to meet defined goals within specified timescales D3 Analyse literature sources to identify and evaluate relevant information	As above

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Degree Apprenticeship Laboratory Scientist

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive featurs such as:**
  - where in the structure above a professional/placement year fits 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

The programme places an emphasis on the balance between core scientific theory and skills along with a range of industry foci with a strong basis in laboratory practical skills and competencies.
Student are taught in small groups by a dedicated team of lecturers. Staff are approachable and accessible to all students. Our 'open door' culture means that students feel comfortable seeking help or advice – either by visiting our offices or through electronic communication.
We aim to produce graduates who have the tools to succeed within employment with appropriate transferable skills specified by our industrial contacts. Again, this is highlighted by the outstanding range of opportunities to develop practical scientific experience valued by the sector.
We have been working with a number of employers in the region including global blue-chip companies to ensure that the theoretical and practical content of the course is well aligned to the requirements of industry. We believe that we are creating highly employable graduates with skills and knowledge that makes them very competitive in an increasingly tough jobs market.
Students have access to an excellent range of facilities and excellent technical support. We aim to give undergraduates supervised, hands-on experience of working with a wide variety of laboratory equipment.
Laboratories are well equipped with multi-media facilities to deliver quality outcomes to a meet the needs of a diverse range of students.
Almost all teaching is done in a laboratory, with a student typically having 12 hours per week of time in laboratories where teaching activities may involve short lectures and explanations followed up by either practical demonstrations of practical activities for students to complete to reinforce learning and relate it to laboratory practice.
Research experience of staff on the team is both international and wide ranging where the majority of the team has worked at the cutting edge of knowledge in leading laboratories in both the UK and elsewhere.
We have strong links with regional employers who are invited in to enhance the student experience and to continue the exposure to professional rather than academic science environments.

The qualification offers an excellent opportunity to work across disciplines. This provides an innovative and contemporary way of creatively approaching the development of scientific skills and this is particularly well-evidenced within the Undergraduate Research Project module.
We maintain connections within industry and are able to attract speakers of international repute to address our students.

5. Support for students and their learning.
(For apprenticeships this should include details of how student learning is supported in the work place)

Support begins with a detailed induction programme. A robust communications system functions to give students access to lecturers and management; this includes e-mail, the VLE and group messaging via Google Hangouts. All necessary information about the programme is provided by means of the student handbook, module handbooks and the VLE. Each student is allocated a tutor for regular tutorials and personal development planning. This is implemented in the first term and continued throughout the year of study. There is an extensive range of learning resources in the Library, supported by specialist staff.
Two academic support workers (currently postgraduate students who recently graduated from the BSc(Hons) programme themselves, both with first-class degrees) are available to help students in small groups or individually.
Students on the BSc(Hons) programme have a regular timetabled 'Workshop' slot in which they can ask a lecturer for help with any of the material that has been covered in recent lectures.
The University Centre provides an extensive range of services for students, including additional support for those with special needs. The Higher Education Additional Learning Support team (HEALS) comprises two specialists in supporting students with learning difficulties such as dyslexia, a qualified counsellor and a welfare support officer.
Two of the members of the Biomedical & Pharmaceutical Sciences lecturing staff are trained Mental Health First Aiders

Apprentices following the Degree Apprenticeship Laboratory Scientist programme will be supported by the college's work-based assessor and employer mentor in addition to the teaching team. As per the Apprenticeship guidelines, the Assessor will visit each apprentice every 6-8 weeks, carrying out observations, reviews and ensuring that all competencies within the apprenticeship are met. The role also includes a pastoral aspect where the Assessor will liaise with both the apprentices' employer learning mentor as well as the teaching team to ensure each apprentice is supported throughout the programme.

6. Criteria for admission
(For apprenticeships this should include details of how the criteria will be used with employers who will be recruiting apprentices.)

Achievement of a relevant level 5 qualification, e.g. our own Foundation Degree in Biomedical and Pharmaceutical Sciences or other FDs including biology and chemistry content, HND or other external equivalent in a relevant scientific subject and a positive reference. International qualifications will be assessed against these criteria. Speakers of other languages will need to possess an IELTS band score of 6.0 (with no-less than 5.5 in any one element) or a recognised English Level 2 qualification.
We welcome applications from candidates who may not precisely match the academic criteria but can demonstrate experience in their chosen field as well as academic achievement at level 5. Candidates in this category will be interviewed to assess their suitability for the course and asked to provide a portfolio of evidence to support their application. The course structure actively supports claims for Recognition of Prior Certified Learning (RPCL) or Recognition of Prior Experiential Learning (RPEL).

The admissions criteria for the Degree Apprenticeship follows the admissions criteria for the Foundation Degree Biomedical and Pharmaceutical Sciences programme. Whilst on the programme apprentices must complete (pass) the Foundation Degree to progress onto the BSc (Hons) Biomedical and Pharmaceutical Sciences.
Some employers may wish to add additional criteria to gain employment as an apprentice with their organisation, however, the admission criteria for the academic qualification remains as above.

7. Language of study
English

8. Information about non-OU standard assessment regulations (including PSRB requirements)
n/a

9. For apprenticeships in England End Point Assessment (EPA). *(Summary of the approved assessment plan and how the academic award fits within this and the EPA)*
The full assessment plan for the Degree Apprenticeship Laboratory Scientist Standard can be found at: https://www.instituteforapprenticeships.org/media/1510/laboratoryscientist_-assessment-plan_-st0626-clean-version.pdf The BSc (Hons) Biomedical & Pharmaceutical Sciences programme has been mapped to the Laboratory Scientist Degree Apprenticeship standard. The academic award fits into the approved assessment plan within the “Gateway” of the apprenticeship standard. As per the apprenticeship standard assessment plan, achievement of the BSc (Hons) degree is a gateway requirement for starting the EPA along with English and Maths at level 2 (if appropriate), achieved either before or during the apprenticeship, the completion of a workplace synoptic project and a vocational

competence evaluation log. The employer must confirm that the apprentice has completed the gateway requirements and is ready for the EPA.
The EPA must be completed within a 6-month period. It must be conducted by an end-point assessment organisation (EPAO) on the Register of Apprentice Assessment Organisations, which is approved to deliver EPA for this apprenticeship standard. It comprises assessment of:

- Workplace synoptic project primary journal article & presentation with questioning
- Vocational competence discussion (VCD).

Performance in the EPA will determine the apprenticeship grade – fail, pass or distinction. The apprentice must pass all EPA methods to successfully complete the apprenticeship. The academic award fits into the approved assessment plan within the "Gateway" of the apprenticeship standard. Apprentices will receive an overall grade for the academic programme completed and for their apprenticeship standard.
A workplace synoptic project is a substantial piece of work that will allow the apprentice to plan, develop and implement an individual scientific work-based project. Typical project examples include implementation of a new analytical technique; experimental design to contribute to an R&D project; design of a new synthetic step within a formulation pathway.
All project topics must be approved by the employer and the project plan must be signed off by the employer as complete and submitted to the EPAO at Gateway.
The Undergraduate Research Project module requires the undertaking of a substantial piece of work requiring planning and development to reach a justified conclusion. Apprentices may undertake this in the workplace with support from their college tutors or if this cannot be offered by their employer then a suitable project related to the workplace will be offered to the employer and executed in the college. A significant element of planning is required for the Undergraduate Research Project and this plan would form suitable evidence for review by the EPAO to ensure that the Gateway requirements can be met.
The Undergraduate Research Project module requires that students (as well as apprentices) show critical analysis of appropriate literature as well as their own data with development of investigative and work orientated skills.
Completion of the Undergraduate Research Project module will provide evidence to support the award of the Standard and the journey to end point.

From their inception the degree programmes have aimed to do more than provide an experience and a qualification but instead to use the strengths of the team, the environment and our small groups to bring industry experience and relevance to an academic setting.

We use industry relevant assessments and provide a strong emphasis on scientific communication supported by the trainer assessor role on workplace visits and in setting mock assessments.

Delivery uses industry relevant examples and supports awareness of industry experience and position.

For example, teaching on *Recombinant Technology and Next Generation Analysis* uses examples of novel agents (nucleic acids as drugs) and their stories of success or

otherwise in the clinical marketplace. Students are able to choose an exemplar in reverse genetics of a therapeutic intervention or agri-development using this technology.

Use of current original research presented in teaching as well as review articles develops language and understanding. Presentations allow confident ability to answer questions and the understanding of what depth of knowledge is required of a topic to address it in this way.

There is extensive laboratory practical work with clear underpinning theory and the requirement to figure out how to develop and translate a method to an application which the student can perform and develop for their project as part of the *Undergraduate Research Project*. This could occur in the workplace and bespoke support and resources will be given for those students. (Knowledge of team applied from level 3 experience).

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

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

- Peer review
- Annual Planning
- Peer Observation
- Student module reviews
- Students voice sampled through 'happy sheets' (informal questionnaires)
- Tutor module reviews
- Enrolment and induction reviews
- Course Committee meetings
- Pathway Committee meetings
- Student Pathway meeting
- Cross college quality and enhancement committee meeting
- Employer feedback

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

The previous offering consisted of two programmes with a number of common modules. This has been rationalised into a single programme with 4 option modules, (from which students will choose to study 2).

The *Dissertation* module has been renamed *Undergraduate Research Project*. This module has a slightly greater emphasis on the evaluation, not just the generation, of experimental data and its use in forming valid conclusions. There is also more focus on record-keeping and the presentation of data as well as project management skills. Thus, the module has been improved in terms of developing skills that are currently in demand from employers.

Taking inspiration from the advice given to us by OU academics about the Dissertation module during our MSc validation, the assessment in the *Undergraduate Research Project* has been modernised. Instead of a lengthy thesis, the module is assessed using a short research proposal followed by a conference-style paper. We hope that students will take the opportunity to present these papers at the University Centre's annual research conference, although this is not part of the assessment.
The *Research Methods* module has been renamed *Research Skills* and has a greater emphasis on developing literature searching skills as well as encouraging a more critical approach to current literature, with an expectation that students will not find and slavishly follow published protocol, but rather critically compare a range of published procedures as part of developing their own methods.
Compliance with safety and ethical standards is embedded into both modules as this is an important aspect of enhancing employability of our graduates.
The *Recombinant Technology* module has been updated to include recent advances, particularly next generation sequencing technology and as such has been renamed to *Recombinant Technology and Next Generation Analysis*.
Four option modules allow a degree of specialisation within the programme. The new module *Microbial Pathology* offers students the opportunity to study up-to-date topics around infectious diseases (of course Covid-19 will be featured, but also 'hot' topics such as bacterial antibiotic resistance), whereas *Pharmaceutical Analysis & Toxicology* takes some of the content previously offered in *Quality Control and Further Analytical Methods*, contextualises it in the analysis of pharmaceutical preparations and adds some introductory elements of toxicology. This would appeal to any students who wish to gain knowledge and practical experience of some analytical chemistry and has relevance in areas such as quality control (of feedstock or product) or regulation and monitoring of medicinal products.
Genetic Mechanisms of Disease is another new module, bringing recent topics in the fields of medical genetics and 'omics to the programme. *Drug Synthesis* will appeal to students who are more interested in the pharmaceutical industry and want to know more about the strategies used to design routes to making new compounds.

Annexe 1: Curriculum map

Annexe 2: Assessment Map

Annexe 3: Curriculum mapping against the apprenticeship standard or framework (delete if not required.)

Annexe 4: Notes on completing the OU programme specification template

Annexe 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	D1	D2	D3
6	Undergraduate Research Project		✓		✓	✓		✓	✓	✓	✓	
	Research Skills		✓	✓		✓		✓	✓			✓
	Recombinant Technology & Next Generation Analysis	✓	✓			✓	✓		✓	✓		✓
	Genetic Mechanisms of Disease	✓		✓	✓		✓			✓		✓
	Drug Synthesis	✓		✓			✓	✓		✓		
	Microbial Pathology	✓		✓	✓		✓		✓			
	Pharmaceutical Analysis & Toxicology		✓		✓			✓	✓		✓	✓

Annexe 2 – Assessment Map

	Research proposal presentation	Conference-style paper	Case study	Lab report	Drug design or synthesis report	Exam	Data analysis report	Open book online exam	Journal-style review article
Undergraduate Research Project	30% 10 minutes Wk 16	70% 4000 words Wk 27							
Research Skills			50% 2500 words Wk 10	50% 2500 words Wk 15					
Recombinant Technology & Next Generation					70% 3500 words Wk 20	30% 2 hours Wk 30			
Genetic Mechanisms of Disease						30% 2 hours Wk 15			70% 3500 words Wk 9
Drug Synthesis					70% 3500 words Wk 9			30% 2 hours Wk 15	
Microbial Pathology							70% 3500 words Wk 25	30% 2 hours Wk 30	
Pharmaceutical Analysis & Toxicology				70% 3500 words Wk 25		30% 2 hours Wk 30			

Annexe 3 - Curriculum mapping against the apprenticeship standard

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

Study module (L6)	**Apprenticeship Standard**																										
	K 1	**K 2**	**K 3**	**K 4***	**K 5**	**K 6**	**K 7**	**K 8**	**K 9***	**K 10***	**S 11**	**S 12**	**S 13**	**S 14**	**S 15***	**S 16***	**S 17***	**S 18**	**S 19***	**S 20**	**S 21***	**B 22**	**B 23***	**B 24***	**B 25**	**B 26**	**B 27***	**B 28***
Undergraduate Research Project		✓	✓			✓	✓				✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Research Skills		✓	✓		✓			✓	✓		✓	✓	✓		✓	✓	✓					✓	✓			✓	✓	
Genetic Mechanisms of Disease	✓	✓		✓	✓	✓				✓	✓	✓	✓	✓	✓			✓					✓		✓	✓		✓
Drug Synthesis	✓		✓			✓	✓	✓	✓	✓	✓			✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
Recombinant Technology & Next Generation Analysis	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓		✓
Microbial Pathology	✓			✓	✓				✓		✓				✓				✓			✓				✓		✓
Pharmaceutical Analysis & Toxicology	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓		✓

The Knowledge, Skills and Behaviours (KSB) are mapped to the FD Biomedical and Pharmaceutical Sciences programme and the BSc (Hons) Biomedical and Pharmaceutical Sciences programme. The asterisk* indicates where a KSB is mapped to the FD Biomedical and Pharmaceutical Sciences programme.

Annexe 2: Notes on completing programme specification templates

1 **-** This programme specification should be mapped against the learning outcomes detailed in module specifications.

2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx

3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx

4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.

5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.

6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.

7 – Validated programmes delivered in **languages other then English** must have programme specifications both in English and the language of delivery.