**Programme Specification Undergraduate**

Applicable to all non-clinical undergraduate programmes*

Please click [here](#) for guidance on completing this specification template.

*Excluding Integrated Master’s degrees.

### Part A: Programme Summary Information

<table>
<thead>
<tr>
<th>1. Title of programme:</th>
<th>Master in Biological Sciences</th>
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<td>Tropical Disease Biology</td>
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<td>Zoology</td>
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<td>Zoology with Industrial/Professional Placement</td>
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2. **Programme Code:** C900

3. **Entry Award:**
   - ☐ BA (Hons)
   - ☒ BSc (Hons) 360
     - At least 120 at level 5 or above and 120 at level 6 or above
   - ☒ Other (please specify below): 480
     - At least 120 at level 7 (M)

   Integrated Master’s award.

4. **Exit Awards:**
   - ☒ Diploma in Higher Education (Dip HE) 240
     - At least 120 credits at level 5
   - ☒ Certificate in Higher Education (Cert HE) 120
     - At least 120 credits at level 4

5. **Date of first intake:** September 2015

6. **Frequency of intake:** Annually

7. **Duration and mode of study:** Full Time 4 years

8. **Applicable framework:** Model for Non-Clinical First Degree Programmes

   **Framework exemption required:**
   - ☒ No (please go to section 9)
     - ☐ Yes (please provide a brief summary below)

9. **Applicable Ordinance:** Ordinance 20 General Ordinance for Undergraduate Degrees

   **New/revised Ordinance required:**
   - ☒ No (please go to section 10)
     - ☐ Yes (please provide a brief summary below)

   **Date new/revised Ordinance approved by Council:**
10. Faculty: Health and Life Sciences

11. Level 2 School/Institute: Institute of Learning and Teaching

12. Level 1 unit: School of Life Sciences

13. Campus: Main campus

14. Other contributors from UoL: Department of Chemistry

15. Teaching other than at UoL: Liverpool School of Tropical Medicine

16. Director of Studies: Dr. Luciane Vieira de Mello Rigden

17. Board of Studies: School of Life Sciences

18. Board of Examiners: School of Life Sciences

19. External Examiner(s):
   Name                   Institution                  Position
   Module Review Boards of the following pathways have the following external examiners:
   Professor Roger Anderson, University of Sheffield (MBiolSci)
   Dr Kieran McDermott, University of Cork (Anatomy and Human Biology)
   Professor Michael McPherson, University of Leeds (Biochemistry)
   Dr Catherine Walton, University of Manchester (Biological Sciences)
   Dr Phil Langton, University of Bristol (Biological and Medical Sciences)
   Dr Valerie Cox, University of Coventry (Bioveterinary Science)
   Prof. A. Knight, University of Newcastle (Genetics and Molecular Biology and Biotechnology)
   Dr Evelyn Doyle, University College Dublin (Microbiology)
   Professor Kevin Fone, University of Nottingham (Pharmacology)
   Professor Graham McGeown, Queens University of Belfast (Physiology)
   Dr Lisa Ranford-Cartwright (Tropical Disease Biology)
   Professor Graham Stone, University of Edinburgh (Zoology)

   Additionally, Master level modules have the following external examiners:
   Professor S. Hubbard, University of Manchester
   Dr. M. Ginger, Lancaster University
   Dr Nick Royle
20. **Professional, Statutory or Regulatory body:** MBiolSci (all pathways) accredited by Society for Biology (from 2015). Reviewed every 5 years.

21. **QAA Subject benchmark Statements(s):** Biosciences ([http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Subject-benchmark-statement-Biosciences.aspx](http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Subject-benchmark-statement-Biosciences.aspx))


23. **Fees:** Standard Health and Life Sciences

24. **Additional costs to the student:** Students contribute to the costs of elective (optional) overseas internships and placements

25. **AQSC approval:**

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**Part B: Programme Aims & Objectives**

26. **Aims of the Programme**

The aim of this programme is to provide students, who have completed 3-years of a BSc programme, with enhanced training in research skills and methodologies that will help them pursue careers as research scientists, in academia, industry, research agencies or other biology-related careers. The research project is a major portion of this final year (accounting for 50% of the assessments). Apart from the project work itself, students also receive training in writing grant applications, critical reviews of the scientific literature and how to write manuscripts in a style that is acceptable for publication in professional journals. Students in their final year of study also have the opportunity to undertake elective internships, either locally or overseas at our partner institutions, and may also spend time working in Industry. This final year thus provides very flexible opportunities for students to work on-campus, within industry or internationally on placements.

**No. Aim:**

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<tr>
<td>1</td>
<td>Provide training in advanced research methods and their applications in the biological sciences, that will equip students with the skills to pursue careers in academia or industry, or to prepare them for PhD training or other biology-related careers;</td>
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<td>2</td>
<td>Expose students to an international research environment, addressing biological problems of global importance;</td>
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<td>3</td>
<td>Train students to understand and critically evaluate major issues and challenges in biology, including ethical issues and professional codes of practice;</td>
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<td>4</td>
<td>Enable students to critique current research and to evaluate methodologies and, where appropriate, to propose and test hypotheses;</td>
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<td>5</td>
<td>Train students to deal with complex biological issues, both systematically and creatively;</td>
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<tr>
<td>6</td>
<td>Provide students with the skills to adapt and respond positively to changing</td>
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</table>
c) circumstances;

7. Develop in students, the capacity for individual and teamwork;

8. Produce lifelong learners with intellectual and practical skills to creatively solve problems.

27. Learning Outcomes

No. Learning outcomes – Bachelor’s Honour’s degree

Subject Based Learning Outcomes

The programme comprises 4 years of study and is designed such that students follow the first years of a cognate Honours degree before entering their 4th (Masters) year for advanced training in research skills. Students will thus exit the programme after 4 years with an MBiolSci (Biochemistry) or MBiolSci (Zoology), for example. In the 4th year, students will receive specialised training in the methodologies, approaches and techniques to enable them to plan, deliver and critically evaluate an extended research project. The first 3 years of the programme provide opportunities for students to develop and demonstrate knowledge, understanding, qualities, skills and attributes in the following areas of biology:

a. Knowledge and Understanding

A. All Pathways:

Students will be able to:

A1. Acquire, interpret and critically analyse biological information through the study of texts, original reports and datasets;

A2. Describe how understanding of biological systems can advance knowledge and solve problems in a wide range of disciplines;

A3. Describe and critically evaluate the relationship between molecular and cellular processes and evolutionary biology at all levels of organisation.

After completion of Level 7 (M), students will have in-depth knowledge and understanding of their discipline that will be informed by current scholarship and research. This will include a critical awareness of current issues and developments in their subject area.

On completion of the following programmes, students will have subject specific knowledge and understanding of:

B. Anatomy and Human Biology

B1. The key features of the anatomy of the human body;

B2. The structure/function relationships of the anatomical and organ systems of the body and their embryological and subsequent development;

B3. The microanatomy of tissues and relate this to their function and development;

B4. The molecular basis of cellular functions;

B5. The differences between the anatomy and biology of humans and other species;
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<td>B6</td>
<td>The functional and evolutionary anatomy of hominids;</td>
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<tr>
<td>B7</td>
<td>The preparation of specimens to demonstrate anatomical structures.</td>
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**C. Biochemistry**

- **C1** The subcellular architecture of cells and tissues, including membranes and organelle structure and function;
- **C2** The structure and function of the major cellular macromolecules and the methods required for their analysis;
- **C3** The major metabolic pathways and how they are integrated;
- **C4** How extracellular signals regulate intracellular enzyme activity, and alter metabolism and gene expression;
- **C5** How biochemical and molecular technologies can advance knowledge and solve biotechnological, biomedical and socio-economic problems.

**D. Biological and Medical Sciences**

- **D1** The subcellular architecture of cells and tissues, including membranes and organelle structure and function;
- **D2** The structure and function of the major cellular macromolecules and the methods required for their analysis;
- **D3** The major metabolic pathways and how they are integrated and regulated in both health and disease;
- **D4** The genetic and microbial basis of human disease;
- **D5** How extracellular and intracellular signals regulate physiological mechanisms at the cellular and molecular level;
- **D6** How biomedical technologies can advance knowledge and solve biotechnological, biomedical and socio-economic problems.

**E. Biological Sciences**

- **E1** The molecular and cellular processes that control the function and development of living organisms and their communities;
- **E2** Interdisciplinary and multidisciplinary approaches to understanding biological systems and processes;
- **E3** Terminology, nomenclature and classification of living organisms;
- **E4** Biological issues relating to the quality and sustainability of life;
- **E5** Biodiversity, biogeography, conservation and the management of species.

**F. Bioveterinary Science**
F1  The biology of major groups of vertebrates;
F2  The structure and function in mammalian species of veterinary interest;
F3  Maintenance and management of domestic animals in the animal industries;
F4  Underpinning concepts in molecular biology, genetics, pharmacology and immunology.

G. Genetics

G1  Genome organisation and structure with an appreciation of the principal mechanisms involved in genome maintenance, repair, recombination, transfer and expression;
G2  The genetic basis of evolution and speciation and a critical awareness of the factors that affect these processes in different types of populations;
G3  Current approaches and techniques employed to investigate genetic phenomena;
G4  The role and potential of genetic approaches in the characterisation of a wide range of biological phenomena;
G5  The current role and potential of genetics in furthering medicine, biotechnology and agriculture, with a critical awareness of the ethical issues involved.

H. Microbiology

H1  The taxonomy, structure and, where appropriate, life-cycle of representative groups of bacteria, viruses and eukaryotic microorganisms;
H2  The physiology of microorganisms in terms of the properties of both individual cells and populations, including their adaptation to diverse environmental conditions;
H3  The genome structure, mechanisms of gene expression, regulation and effect on metabolism;
H4  The interaction of microorganisms with higher organisms with particular regard to disease;
H5  The impact of microorganisms on environmental processes;
H6  The exploitation of microorganisms in biotechnological processes.

I. Molecular Biology and Biotechnology

I1  The structure and function of the major cellular macromolecules and the methods required for their analysis;
I2  The structural and functional organisation of genomes, their replication and repair and the regulation of gene expression;
I3. The subcellular architecture of cells and tissues, including membranes and organelle structure and function;

I4. The molecular mechanisms by which extracellular signals regulate intracellular activities;

I5. How molecular biology techniques can advance knowledge and solve biotechnological, biomedical and socio-economic problems.

**J. Pharmacology**

J1. Essential concepts in biological sciences, including gene function, protein action, cellular organisation and organism diversity;

J2. Physical and organic chemistry principles, including analysis of methods and reactions particularly relevant to the synthesis and properties of drug-like organic compounds;

J3. Human physiology from the cellular to whole-organism level;

J4. All the "Core concepts" described in the *British Pharmacological Society* (BPS) *Core Curriculum*;

J5. The majority of the "Drug areas" listed in the *BPS Core Curriculum*;

J6. The ways in which the core concepts relate to the actions and uses of drugs in different drug areas;

J7. "Special Topic Areas" at level 6, as described in the *BPS Core Curriculum*

**K. Human Physiology**

K1. The subcellular architecture of cells and tissues, including membrane and organelle structure and function in relation to physiological mechanisms;

K2. How extracellular and intracellular signals regulate physiological mechanisms at the cellular and molecular level and their effect on homeostasis in the whole organism;

K3. Current approaches and techniques employed to investigate a range of physiological mechanisms in the whole organism and at the cellular and molecular level;

K4. The influence of diseases and environment on organ and body function and the basis of physiological changes involved;

K5. How pathological, genetic and environmental factors influence individual physiological mechanisms;

**L. Tropical Disease Biology**

L1. The major groups of animals, with emphasis on their parasites and vectors;

L2. The immunology, physiology, biochemistry and molecular biology of a range of animals, including important agents of disease;
| L3 | The biology and control of parasites and their vectors; |
| L4 | The role of research in the development of control strategies; |
| L5 | Biodiversity, biogeography, and the global burden of disease; |
| L6 | How an understanding of parasites and their vectors can advance knowledge and solve problems in a wide range of disciplines. |

**M. Zoology**

| M1 | The major groups of animals, their taxonomy and evolution; |
| M2 | Interactions of structure and physiological function at cellular and organism levels; |
| M3 | The ecology of populations, metapopulations and communities; |
| M4 | The contribution of behavioural patterns and the evolution of cognition to survival and success; |
| M5 | The structure, biogeography and diversity of ecosystems; |
| M6 | Current approaches to conservation and the management of species; |

| N1 | Be able to apply the methods and techniques learned to review, extend and apply knowledge and understanding to initiate and carry out projects; |
| N2 | Be able to evaluate evidence, arguments and assumptions to reach sound judgements to achieve a solution, or range of solutions, to a problem. |
| N3 | Be able to plan and execute all the core practical and professional skills relevant to first post-employment in the discipline, independently; |
| N4 | Be fully aware of relevant ethical implications of proposed courses of actions or situations and take the necessary steps to work within the limits of these. |
| N5 | Be able to demonstrate qualities and transferrable skills needed for employment. In particular, they will be able to demonstrate: |

1. Initiative;
2. Personal responsibility;
3. Decision-making in complex & unpredictable circumstances;
4. Problem solving skills that can be applied in many types of employment;
5. Lifelong learning skills to address their own learning needs within their discipline and new areas of learning; |
6 Communicate effectively and confidently to both specialist & non-specialist audiences.

O. Level 7 (M): After completion of level 7 (M), students will have developed enhanced Intellectually, Professionally and Practical-Skills to:

O1 Plan and execute a piece of scientific research, in a responsible, safe, professional and ethical manner;

O2 Analyse and critically evaluate data, information and observations, apply statistical analysis, and draw valid conclusions;

O3 Formulate a hypothesis and design a coherent and feasible experimental plan to test that hypothesis, using scientific methods, statistical approaches and resources;

O4 Evaluate own performance and working standards, and place their work in the context of the wider scientific community;

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<th>Learning Outcomes</th>
<th>No.</th>
<th>Learning outcomes – Bachelor’s Non-Honour’s degree</th>
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<td>See relevant BSc Programme Specification</td>
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<th>Learning outcomes – Diploma in Higher Education award</th>
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<tr>
<th>27a. Mapping of learning outcomes:</th>
<th>Learning outcome No.</th>
<th>Module(s) in which this will be delivered</th>
<th>Mode of assessing achievement of learning outcome</th>
<th>PSRB/Subject benchmark statement (if applicable)</th>
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<tr>
<td>Please See <strong>Appendix 1</strong> for mapping of the delivery and assessment of Subject based Learning Outcomes</td>
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2016-17 v.1
### 28. Skills and Other Attributes

**No.** | Skills and attributes:  
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**A** | **Key Employability skills**  
(Modules in which these skills are delivered and assessed are given in parentheses)  
Upon successful completion of the programme, students will be able to:  
1 | Structure and communicate ideas effectively both orally and in writing using a range of formats (LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731/631, LIFE700);  
2 | Manage time, work to deadlines and prioritise workloads to achieve targets (LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731/631, LIFE700);  
3 | Actively participate in groups, demonstrating leadership skills where appropriate, but be capable of independent work (All practical modules, LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731/631, LIFE700);  
4 | Access and evaluate information and use IT effectively (LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731/631, LIFE700);  
5 | Assess the relevance and importance of ideas of others (LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731/631, LIFE700);  
6 | Develop lifelong learning skills that are flexible and adaptable (LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731, LIFE700, LIFE707/607);  
7 | Evaluate own performance and working standards and those of others (LIFE109, LIFE223, L6 Skills Modules*, LIFE363 (L6 project), LIFE731/631, LIFE700);  
8 | After completion of level 7 (M), students will be able to use their initiative and take responsibility to solve problems in creative and innovative ways, and respond to challenging situations. They will continue to learn independently, develop professionally and communicate effectively in a variety of different media (LIFE707, LIFE731/631, LIFE700).  

* Level 6 Skills Modules:  
LIFE301 Advanced Skills in Biochemistry  
LIFE317 Advanced Skills in Genetics  
LIFE321 Advanced Skills in Microbiology  
LIFE326 Advanced Skills in Zoology  
LIFE334 Advanced Skills in Bioveterinary Sciences  
LIFE337 Advanced Skills in Molecular Biology and Biotechnology  
LIFE338 Contemporary Issues in Anatomy  
LIFE345 Advanced Skills in Biological Sciences  
LIFE352 Advanced Skills in Tropical Disease Biology  
LIFE365 Advanced Skills in Biological and Medical Sciences  
LIFE310 Data Handling for Physiologists/LIFE309 Principles of Molecular Physiology Research  
LIFE312 Chemotherapy and Cellular Pharmacology/LIFE313 Cardiovascular and Respiratory Pharmacology

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#### 28a. Mapping of skills and other attributes:
The **mapping and assessment** of individual Subject-Based Learning outcomes, Cognitive, Practical and Key Skills for levels 4-6 is shown in **Appendix 1**, while those for level 7 (M) are shown in **Appendix 2**.

### Part C: Entrance Requirements

#### 29 Career opportunities:

Graduates with an MBiolSci will be well-qualified to enter a wide range of employment. The higher-level research skills developed in the final year will be of particular benefit to students seeking a career in industry or scientific research. In particular, students with an MBiolSci will be highly competitive for further research training at PhD level. Students will also be well-equipped for postgraduate entry in Medicine or Veterinary Sciences, as appropriate to their pathway. Other available careers include those for graduates in general, such as management, accountancy and human resources, where the problem-solving, analytical and presentational skills obtained will be of considerable benefit. A postgraduate qualification (PGCE) for entry into the teaching profession is also an option, to meet the current demand for science teachers. Commercial sectors that actively recruit our graduates include the pharmaceutical, food, biotechnology, water and agriculture industries or sectors involved in animal welfare, conservation and wildlife management. In the public sector, biology graduates are in demand in research institutes, government departments, the Health Service, forensic science and the Environment Agency. There is an increasing demand for biologists to contribute to the public understanding of science as journalists, and information/liaison officers in view of the ethical and environmental issues raised by the development of new biology-based technology.

#### 30 Academic Requirements:

The typical offer for entrance to this degree programme is 320 UCAS tariff points, equivalent to ABB at A Level. All applicants (except those on the Pharmacology pathways) will be required to offer Biology A level, while those students taking routes though the programme via Biochemistry, Biological and Medical Sciences, Molecular Biology and Biotechnology, and Pharmacology pathways will also be required to offer Chemistry at A level. The balance of the tariff points may come from either an additional subject at A level, or a combination which might include A2 and AS level subjects, vocational A levels and Key Skills. Mature applicants are particularly welcome and will normally be expected to show evidence of
recent academic study, such as an Access course. Other academic qualifications (such as HND, Scottish Highers) will be considered on a case by case basis. International students should have a TOEFL score of 600 or above in paper-based tests, or 250 or above in computer based tests. Alternatively, an IELTS score of 6 or above is acceptable provided that 5.5 or above was obtained in all assessments.

Pre-sessional English language courses are available for students whose English qualifications are below these scores (http://www.liv.ac.uk/elu/eap/index.htm). Alternatively, students may enter on a 3 year Bachelor’s programme (in a subject area corresponding to one of the pathways) and transfer onto the Integrated Masters programme at the end of year 3, provided that they meet the progression criteria described in section 37. The University operates an Accredited Prior Learning scheme, and students are advised to visit http://dbweb.liv.ac.uk/cll/cepd_docs/Policy10.2003.pdf in the first instance.

31 Work experience:

None required

32 Other requirements:

None

Part D: Programme Structure

33 Programme Structure:

The programme comprises 4 years of study. For the first 3 years, students will follow a pathway that constitutes one of our current 3-year programmes of study. These are: Anatomy and Human Biology (B110); Biochemistry (C700); Biological Sciences (C100); Bioveterinary Science (D900); Genetics (C400); Microbiology (C500); Molecular Biology and Biotechnology (C720); Pharmacology (B210); Human Physiology (B120); Tropical Disease Biology (C111) or Zoology (C300). These pathways are described in detail in the respective Programme Specifications.

The 4th year of study (120 credits of M-Level (7) modules) will comprise 90 credits of required modules plus 30 credits of optional modules. See Figure 1. For BIOL731 (required module), all students study a central core and then select workshop sessions from a series of options. Additionally, in this module, students must attend (and report upon) at least 8 subject-specific seminars presented in either the School/Divisional seminar series, or more widely across the University (following guidance from their project supervisors). In this way, students have the flexibility (with advice from their supervisors) to tailor their learning experiences towards specialised subject areas. A 30-credit (optional) elective internship may be spent in the summer vacation preceding the 4th year of study. These internships may be either in the UK or overseas, in one of our partner institutions. Students are advised to select optional M-level modules that are balanced across the two semesters.
34. **Industrial placement/work placement/year abroad:**

This is offered as an option for students entering the final year of the programme from 2014 onwards. Placements may be in the UK, Europe or worldwide. The School will assist in finding suitable placements for students, but no placement can be guaranteed. The placement would take place in the 4th year of study and students will take LIFE700 and LIFE701, together with the on-line modules LIFEL607/LIFE621 and LIFE631. Each student will be allocated an Academic Supervisor who will visit the student at least once during the placement, and regular contact will be made between student and supervisor via e-mail and Skype. Student contact and progress reporting will also be maintained throughout the projects, via an electronic system available through TULIP. This takes the form of an electronic reporting and feedback to discuss progress and to resolve any issues that may arise.

35. **Liaison between the Level 2 Schools/Institutes involved:**

Staff within the Institutes of Learning and Teaching, Integrative Biology, Translational Medicine, Infection and Global Health, Ageing and Chronic Disease and School of Environmental Science, deliver teaching that contributes to this programme (depending on the range of optional modules that the students select), while Staff from the School of Life Sciences are responsible for managing the programme. Staff from all institutes are represented on various Learning and Teaching Committees within the School.
Part E: Learning, Teaching And Assessment Strategies

36. Learning, Teaching and Assessment Strategies:

Acquisition of Subject Based Learning Outcomes is via lectures, practicals, coursework, workshops, small-group tutorials, problem-solving exercises and a final year research project, all supported by Web-based materials, selected textbooks and specified source literature. Throughout the programme, the learner is guided and encouraged to undertake independent reading to supplement and consolidate what is formally taught/learnt. This broadens individual knowledge and understanding, and also develops self-learning skills. Formative assessments allow student to reflect on their learning. Thus, as students progress though the levels of study, they become more independent-and active-learners. In Level 7 (M) there is increasing emphasis on workshop-style teaching and self-learning/problem-based assignments.

Intellectual Skills and Key (Transferrable) Skills are developed in the teaching and learning methods described above, and also via compulsory Skills modules in Levels 4 and 5 in which students meet in small groups (5-8 students) regularly with an Academic Advisor. These modules encourage individual and group work where students tackle problems by developing ideas and hypotheses, design learning strategies to solve problems, and then analyse and interpret their findings. As these skills are taught and developed, students self-assess their progress and evaluate how their skills are developing. Web-based resources can provide additional support if required and students record the development of their skills. These skills are also developed in Levels 4 and 5 practical modules and in the final year research project. Additionally, at L6 these skills are further developed via stand alone, subject specific modules (e.g. Advanced Skills in Biochemistry, Advanced Skills in Genetics). The M level project(s) provide advanced training in high-level analytical and reasoning skills.

Practical skills are developed primarily through practical modules and project work. Students work in groups to share learning experiences but are also instructed individually so that each student acquires these skills. Specific lecture modules and workshops also deliver experimental design, and application of relevant statistics and bioinformatics (e.g. LIFE707/607, LIFE731/631, and LIFE721/621). The M level projects provide advanced research training within an internationally-recognised research environment.

Assessment of Knowledge and Understanding, Practical Skills and Transferrable Skills is through a blended mix of written examinations, containing seen and unseen questions, Extended Matching Items (EMI), short answer questions (SAQ), Multiple Choice Questions (MCQ), and assessed coursework (practical and project reports, essays, completion of workbooks, talks, data handling sessions, posters, EMI, SAQ and MCQ) or other tasks undertaken under examination conditions. For all modules, a minimum of 20 % of the total assessment is via continuous assessments, which provides feedback to students on their learning progress and allows for adjustment of their learning. Students also evaluate their progress and are guided to extra information and help via online resources and formative exercises. Learning and teaching is supported by electronic resources available on the virtual learning environment, VITAL.
36a. Learning, Teaching and Assessment methods:

- Lectures;
- Large group seminars/tutorials;
- Small group seminars/tutorials;
- Laboratory work;
- Fieldwork;
- Placements (non-clinical);
- Group work;
- Project work (individual/group);
- On-line discussion, wiki etc.;
- On-line lectures, podcasts;
- Workshops;
- Skills development;
- Self-directed learning;
- Private study.

Assessment will be by examinations and continuous assessments. These will include quantitative assessments (e.g. SAQ, MCQ, EMI), essays, reports, posters, presentations and completion of workbooks.

37. Assessment information for students:

Full details of the procedures used to assess Level 7 modules can be found in the Programme and Module handbooks given to students at the 4th Year. All handbooks are available electronically on the School of Life Sciences homepage in VITAL and on VOCAL. The information given complies with the University’s Code of Practice on Assessment (https://www.liverpool.ac.uk/media/livacuk/tqsd/code-of-practice-on-assessment/code_of_practice_on_assessment,2015-16v3.pdf) and the University’s assessment criteria for the classification of Four-Year and Five-year Non–Clinical Undergraduate Degree published as Appendix J to this Code: (http://www.liv.ac.uk/media/livacuk/tqsd/code-of-practice-on-assessment/appendix_J_2010-11_cop_assess.pdf).

In summary, the progression/assessment criteria are as follows:

1. MBiolSci (all pathways)

1.1 Progression

1.1.1. To pass Level 4 and progress to Level 5 a student must:

- Pass modules totalling at least 90 credits; and
- Obtain an overall average of at least 40% in modules totalling 120 credits and a minimum mark of 35% in all modules.

1.1.2. To pass Level 5 and progress to Level 6 a student must:

- Pass modules totalling at least 90 credits; and
- Obtain an overall average of normally 60%, at the first attempt, in modules totalling 120 credits and a minimum mark of 35% in all modules.

Students who do not achieve an overall average of 60% for the MBiolSci, at the first attempt in Level 5 will be allowed to transfer to an appropriate bachelor’s degree, provided that they meet the progression requirements for the bachelor’s programme.
1.1.3. To pass Level 6 and progress to Level 7 a student must:

- Pass modules totalling at least 90 credits; and
- Obtain an overall average of, normally 60% for the MBiolSci programmes, at the first attempt in modules totalling 120 credits and for the MBiolSci a minimum mark of 35% in all modules.

Students who do not achieve an overall average of 60% for the MBiolSci, at the first attempt in Level 6, will be considered for the award of a Bachelor’s degree.

1.2. Re-assessments

1.2.1. Students in Level 4 and 5 will normally have the opportunity to be re-assessed in September.

1.2.2. Students who fail to meet the requirements for progression from Level 6 to Level 7 and who have insufficient credits for a Bachelor’s degree at the end of Level 6 shall have the opportunity to be re-assessed at the next scheduled sitting.

1.2.3. Students who meet the requirements for progression from Level 6 to Level 7 will be given the opportunity to be re-assessed in failed Level 6 modules once, during, but not beyond, Level 7, at the next sitting.

1.2.4. Students with insufficient credits for an Integrated Master’s degree at the end of Level 7 shall have the opportunity to be re-assessed in failed Level 7 modules at the next scheduled sitting. The mark obtained at the second attempt will be capped at the pass mark for the purposes of determining the final degree, except where the second attempt is allowed under mitigating circumstances.

1.3. Degree Transfers

1.3.1. Students shall normally have the opportunity to transfer from a Bachelor’s programme to an Integrated Master’s programme; and from an Integrated Master’s programme to a Bachelor’s programme, at the end of Level 4 and Level 5.

1.3.2. Students shall normally have the option to exit at the end of Levels 4, 5 and 6.

1.3.3. If a student opts to exit at the end of Level 6 once the final Board of Examiners meeting has been held, they will be considered for the award at the final Board of Examiners meeting in the following year.

1.4. Credit to be passed

1.4.1. Programmes shall contain a minimum of 120 level M credits to be taken during Level 6 and Level 7. Programmes may contain additional M level credit, up to a maximum of 30 credits that may be taken over Level 6 and 7; these must be optional and are in addition to the 120 M level credits that are required.

1.4.2. Upon completion of the programme, students shall be considered for the
award of a Master’s degree, subject to the provisions below.

1.4.3. To be eligible for the award of a classified Integrated Master’s degree, students must have passed modules totalling 450 credits or more (including compensated marks of 40% gained in Levels 4 and 5) and must have passed all mandatory modules. If students have failed modules worth more than 30 credits or not passed the requisite number of M level credits, they will not be eligible for the award of a Master’s degree, but may be eligible for the award of a Bachelor’s degree.

Note that students may withdraw from an MBiolSci in the final (4th) year and qualify for the award of a BSc. The BSc award will be calculated on the basis of credits accumulated at the end of level 6 (year 3). In this case, the regulations described in Final degree classification for BSc will be used to calculate the degree classification (see relevant BSc Programme Specification).

Note. If a student submits all of the assessments, then they have completed the year and so cannot then withdraw.

1.4.4. Project or Dissertation Credit

Programmes may contain a project or dissertation module carrying up to a maximum of 60 credits.

1.5. Awards available:

1.5.1. All available exit awards must be clearly stated.

1.5.2. If a student fails to satisfy the requirements for an Integrated Master’s degree having progressed to Level 7, they will be considered to have met the academic criteria for the award of a Bachelor’s degree. Classification of the Bachelor’s degree will be based upon the marks achieved in Levels 4, 5 and 6.

1.5.3. To be eligible for the award of a classified Bachelor’s degree, students must have passed modules totalling 330 credits or more i.e. the modules have been awarded a mark of 40% or above (including compensated marks of 40% gained in Levels 4 and 5) and must have passed all mandatory modules. The credits passed must be at the appropriate level as detailed in Appendix A to the Code of Practice on Assessment. If students have failed modules worth more than 30 credits in year three, i.e. the modules have been awarded a mark of less than 40%, they will not be eligible for the award of a Classified Bachelor’s honours degree, but may be eligible for the award of a pass (non honours) degree.

1.5.4. Students who do not meet the criteria for a classified Bachelor’s honours degree will be eligible for the award of a pass (non honours) degree if they achieve the pass mark (40% or above) in modules totalling a minimum of 300 credits (irrespective of their overall average). This therefore includes:

i. students who are not considered for a classified honours degree because they have not achieved the minimum 330 credits requirement;

ii. students who have achieved the minimum 330 credits requirement
for an honours degree but whose average mark is less than 40% and who are either not eligible for profiling or are not eligible for a classified honours degree following profiling; and

iii. students with a failed module or modules in year three who have prima facie met the criteria for the award of a classified honours degree but to whom the Board of Examiners has declined to award a classified honours degree on the basis that they have failed to achieve the overall learning outcomes of the programme or the Board is not satisfied that the student made a reasonable attempt at the failed assessments.

1.6. Professional/Statutory Body Requirements

1.6.1. The requirements for professional/statutory body accreditation must be made clear to students when they commence their programme of study.

1.6.2. Where the academic requirements differ from those of relevant professional/statutory bodies for programmes that carry professional accreditation, the more stringent rules will apply for the purposes of making the award. Where a student meets the criteria for the academic award, but fails to meet the criteria for professional accreditation, the University will inform the relevant professional/statutory body.

1.7. Weighting

1.7.1. The marks achieved in years two, three and four are weighted in the calculation of the overall average mark as follows:

Level 5: Level 6: Level 7 of 20:40:40

1.8. Profiling

1.8.1. The profiling rules for all the four-year Integrated Master’s programmes, are as follows. If, as a result of their overall average, a student misses the higher classification by no more than 1% (after rounding), their marks profile will be considered. For the purpose of determining the average mark for profiling, re-assessment marks will be capped at 40% (or 50% for M level modules), unless the re-assessment is being treated as a first examination in cases of ill-health or other mitigating circumstances determined by the Board of Examiners (or, where appropriate, the Faculty Progress Committee). They will be awarded the higher class if they have obtained:

i. at least 60 credits at Level 7 in the higher class; and either

ii. at least 180 credits over Levels 5, 6 and 7 in the higher class; or

iii. at least 120 credits over Levels 6 and 7 in the higher class.

1.9. Failure of modules

1.9.1. If a student meets the criteria set out above for the award of a classified honours degree but has failed a module or modules in their final year, the Board of Examiners, before recommending the award of a classified honours degree, must satisfy itself that the overall learning outcomes of
the programme of study have been achieved and that the student has made a reasonable attempt at the assessments that were failed. If, for example, without mitigating circumstances, a student has a mark of zero in a module due to non-attendance or failure to take the assessments, the Board of Examiners would be unlikely to recommend the award of an honours degree.

The new degree classification system will mean that all the calculations can be done and a list of classifications arrived at before final examiners’ meetings take place. Most of these results will simply be ratified by the Board of Examiners, but the Board will be required to give special consideration to the cases of students who prima facie have met the criteria for the award of a classified honours degree, but who have failed modules in their final year, and of students whose performance might have been affected by ill-health or other mitigating circumstances. The External Examiner’s role will be focused on scrutinising module marks before they are fed into the calculations, considering the cases of students with final year failed credit and those whose performance may have been affected by ill health or other mitigating circumstances and verifying the assessment process. External Examiners will no longer need to be asked to read ‘runs’ of papers to help in the assessment of borderline candidates.

External Examiners are responsible for ensuring that awards made by the University of Liverpool are of a comparable standard with those of similar subjects and awards of other Higher Education Institutions in the United Kingdom, as stated in the Code of Practice on External Examining, available at:

http://www.liv.ac.uk/tqsd/pol_strat_cop/cop_assess/appendix_HCopAssess.pdf

Further information on the assessment policies and procedures, including:

- Purpose, method and schedule of assessment
- Timescales for the submission of assessments
- The penalties for the late submission of assessments
- The rules relating to cheating, plagiarism and collusion
- Ill-health and other special factors

Can be found on the School of Life Sciences module on VITAL

Marking criteria:

38. Student representation and feedback:

A range of external and internal stakeholders, including students, monitors the programme. Student evaluation of the programme will be gained through the following routes:

- Formal written end of module evaluation forms
- Informal discussion with module leader/academic staff
- Exit questionnaire for graduates
- Representatives on the Board of Studies and Student Experience Committee
- Minutes of the student forums and School Staff-Student liaison Committees

The School of Life Sciences’ Staff Student Liaison Committees (SSLC) operate in accordance with the University Code of Practice on Student Representation (a copy of the code can be accessed at www.liv.ac.uk/tqsd/pol_strat_cop/cop-
on-student-representation.doc). They comprise student representatives (elected by the student body) from each year of the School’s undergraduate programmes, all of the Honours schools, plus representatives of the Academic Staff. There is a Masters SSLC that includes students on MBiolSci, MRes and MSc programmes, as these programmes share many level 7 modules. The terms of reference of SSLCs are wide-ranging and largely self-determined, but are likely to include issues associated with lectures, practicals, timetables and assessments, module evaluations, tutorial arrangements, non-curricular student activities (e.g. Student Societies), student facilities or proposed changes in University and School teaching and assessment arrangements. The Minutes of each meeting are considered by the School’s SEC. Level 7 modules are routinely evaluated by students using a Web-based system, and summary data is reviewed by the School’s Learning and Teaching Group.

Part F: Status Of Professional, Statutory Or Regulatory Body Accreditation

39. Status of Professional, Statutory or Regulatory Body Accreditation:
The MBiolSci programme (all pathway) is Accredited by the Royal Society of Biology (from 2015).

Part G: Diversity & Equality Of Opportunity And Widening Participation

40. Diversity & Equality of Opportunity and Widening Participation:
The University of Liverpool is committed to providing a positive learning and working environment where all members of the University community are treated with dignity and respect. We will address direct and indirect discrimination, harassment and victimisation on the grounds of age, disability, gender reassignment, marriage & civil partnership, pregnancy & maternity, race, religion and belief, sex and sexual orientation; spent criminal convictions (where there is no exemption from the legal provisions in place), socioeconomic background or any other irrelevant factor.

The University’s Diversity and Equality of Opportunity Policy provides the overarching framework for translating this commitment into actions and has supporting Disability, Gender and Race Equality Schemes and Age, Religion and Belief and Sexual Orientation Action Plans. The Dignity at Work and Study Policy further outlines the University’s commitment to eliminating bullying and harassment. These documents and further information can be found at: http://www.liv.ac.uk/hr/diversity_equality

Annex 1

Annex of Modifications Made to the Programme

Please complete the table below to record modifications made to the programme.

<table>
<thead>
<tr>
<th>Description of modification (please include details of any minor or major modifications)</th>
<th>Date approved by FAQSC</th>
<th>Date approved by AQSC (if applicable)</th>
<th>Cohort affected</th>
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TQSD/16.17
2016-17 v.1
student consultation undertaken or confirm that students’ consent was obtained where this was required

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<tbody>
<tr>
<td>1. Addition of pathways: Biological Sciences (Pharmacology), Biological Sciences (Pharmacology with Industrial/Professional Placement), Biological Sciences (Human Physiology with Industrial/Professional Placement) Biological Sciences (Human Physiology)</td>
<td>Minor</td>
<td></td>
<td>2014</td>
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<td>2. Removal of pathway: Biological Sciences (Marine Biology)</td>
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<td>3. Addition of bioinformatics module as an alternative for statistics (core module)</td>
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<td>4. Additional information regarding programme withdrawal (the information was in the original programme specification, but it was missing in the recent update)</td>
<td>Minor</td>
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<td>5. “Professional and Practical Skills” section 27 (N) was updated according to the new generic learning outcomes</td>
<td>Minor</td>
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<tr>
<td>6. Deletion of BIOL763 as optional module. All students have now done LIFE223 that covers BIOL763 content.</td>
<td>Minor</td>
<td></td>
<td>2016</td>
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<td>7. New module code for BIOL721; now called LIFE721</td>
<td>Minor</td>
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<td>8. Updating of programme accreditation status</td>
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<td>9. Adding clarity to the pathways offered by the programme</td>
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