Royal Veterinary College
University of London

PROGRAMME SPECIFICATIONS

Master in Science in Applied Biological Research (MSci ABR)

Master in Science in Applied Biological Research with Placement Year (MSci ABR PY)

Royal Veterinary College
University of London

1. Applies to cohort commencing in:	2022
2. Degree Granting Body	University of London
3. Awarding institution	The Royal Veterinary College
4. Teaching institution	The Royal Veterinary College
5. Programme accredited by	Royal Society of Biology (Advanced Accreditation)
6. Name and title	Master in Science in Applied Biological Research (MSci ABR)
7. Intermediate and Subsidiary Award(s)	Cert HE, Dip HE
8. Course Management Team	Course Director: Dr Charlotte Lawson; Year 1 Leader: Dr Donald Palmer; Year 2 Leader: Dr Abir Mukherjee; Year 3 Leader: Dr Isabel Orriss Year 4 Leader: Dr Claire Russell
9. FHEQ Level of Final Award	Level 7 See http://www.qaa.ac.uk/en/Publications/Documents/qualifications-frameworks.pdf
10. Date of First Intake	2002 for BSc, 2014 for transfer from BSc Biological Sciences to MSci year 4 2015 for MSci Applied Biological Research
11. Frequency of Intake	Annually in September
12. Duration and Mode(s) of Study	Full time: four years A mix of teaching approaches including onsite and digital, synchronous and asynchronous, class and self-paced, expert-led, group and individual. .
?13. Registration Period *(must be in line with the General Regulations for Study and Award)*	Full Time: Minimum 3 Academic years; Maximum 6 Academic years Part Time: Minimum 4 Academic years; Maximum 7 Academic years
14. Timing of Examination Board meetings	Annually in July (Year 1 -3), Annually in September (Year 4)
15. Date of Last Periodic Review	2020
16. Date of Next Periodic Review	2023
17. Language of study and assessment	English
18. Entry Requirements	https://www.rvc.ac.uk/study/undergraduate/msci-applied-biological-research#tab-entry-requirements Progression to Year 4 To be considered for progression to Year 4, applicants must have achieved an aggregate Year 2 mark of at least 50%

	Written offer of a Placement from a placement provider. The proposed placement project must address the Learning Outcomes. The placement provider must satisfactorily complete an 'RVC Collaborative Partners' form. The student must attend a Placement Health and Safety Induction at the RVC. Travel Risk Assessments must be performed if the placement is abroad. A Placement Supervisor must be named, and their details provided.
19. UCAS code	C103
20. HECoS Code	100345
21. Relevant QAA subject benchmark	Biosciences

22. Other External Reference Points

Report of the Committee of Enquiry into Veterinary Research (the Selborne Report)

Quality Assurance Agency, The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies, 2014

Higher education credit framework for England: guidance on academic credit arrangements in higher education in England, Quality Assurance Agency, 2008

Regulations of the University of London Future Fit, CBI 2009

Degree Accreditation Criteria, Society of Biology

SEEC Level Descriptors for Higher Education, SEEC, 2010

23. Aims of programme

The BSc Biological Sciences aims:

- To offer a high quality course, in which students are challenged by, and stimulated to challenge, accepted wisdom in all fields of biological and biomedical science.
- To prepare graduates for careers in academic and industrial research, biotechnology and the pharmaceutical industry in general, and in other health and medicine-related industries.
- To offer a high quality preparation for students aspiring to graduate entry to Medicine, Dentistry or Veterinary Medicine.

The specific aims of the MSci Applied Biological Research Year are to enable students to:

- Gain research experience within biological and biomedical sciences that is relevant to their degree.
- Gain a deep and systematic understanding of current questions, problems and methods employed within the selected specialised research topic.
- Implement principles of project and experimental design and carefully execute, record and clearly disseminate research.
- Use self-reflection to improve levels of knowledge, professionalism, personal skills and research skills.
- Develop a sound appreciation of the research environment in which the student is working and their role within it.

24. Overall Programme Level Learning Outcomes - the programme offers opportunities for students to achieve and demonstrate the following learning outcomes. Learning outcomes should be specified for all intermediate awards as well as for the terminal award.

On successful completion of the masters in science course, students will:	Modules in which each learning outcome will be developed and assessed:
• Have a detailed understanding of cell biology, physiology, and genetics.	Year 1 modules

• Have a detailed understanding of the basis of infectious & non-communicable diseases and an appreciation of pharmacology and the broader applications for disease control.	Year 2 modules
• Display practical skills, including the ability to design and execute experiments, analyse and interpret the resultant data, and present conclusions in a variety of formats.	Year 2 Research Project
• Have developed the ability to access appropriate information, make methodical observations on the normal and abnormal functioning of biological systems, discriminate between important and relatively unimportant information and observations, reflect on information and observations, solve problems, discuss uncertainty in relation to scientific "facts", and balance different schools of thought.	Year 3 Research Project
• Develop independent and lifelong learning skills to promote their own personal and professional development.	Tutorials & Skills Workshops (across all modules)
• Develop important employability skills including: communication, teamwork, personal management and career planning, effective learning, problem-solving, digital literacy, numeracy.	Across all modules, with particular emphasis in projects and tutorials
• Act with integrity, be honest, fair and compassionate in all their work. • Maintain high ethical principles in relation to professional dealings, the use of information and experimentation in humans and animals.	Investigative Projects (all years)
• Have an appreciation of health and safety appropriate to laboratory and field work, including completion and understanding of risk assessment and COSHH documents,	Investigative Projects (all years)
• Clearly communicate their project aims, background, results, relevance and own proposals for future research, demonstrating critical analysis and a deep and systematic knowledge and understanding of the literature.	Research Skills module & Year 4 project
• Clearly and properly record their research.	Research Skills module & Year 4 project
• Identify specific areas for personal and skill development.	Research Skills module & Placement Year
• Demonstrate an understanding of professional conduct within the workplace.	Placement Year

• Appreciate the placement provider's strategic aims, finances and profitable activities.	Placement Year
• Understand the importance of intellectual property and confidentiality in business and research.	Placement Year
• An appreciation of the culture of the placement provider and of the relevance of the project to the organisation.	Placement Year
25. Teaching/learning methods	**Approximate total number of hours** These figures may differ during the COVID-19 pandemic
Lectures	8-10 hours per week
Practical / Directed Learning sessions	8-10 hours per week
Tutorials & self-directed Learning	5 hours per week
Placement Year (Year 4)	35 hours per week
26. Assessment methods	**Percentage of total assessment load**
Coursework	25%
Written Exams	31%
Projects	44%
27. Feedback	
In each module in each year, there are a number of formative feedback opportunities. These include written formative feedback on individual coursework, online quizzes with answers, group question and answer sessions, feedback to the year group about exam and ICA performance, feedback to individual students about exam and ICA performance (in one-to-one tutorials). Students are encouraged to seek feedback from lecturers and tutors as needed during all small group learning and practical classes. Frequent opportunities for formative feedback (oral and written) during investigative projects.	

28. Programme structures and requirements, levels, modules, credits and awards
NB: The College will not deliver any module or part of a programme if circumstances have changed to threaten its quality or viability. Such offerings could change after a student has started the course. However, the College will always offer alternatives that will be of equal cost in both fees and add-on expenses to the student and of equal academic value.

	Module Title	FHEQ Level	Credits	Compulsory or optional
Year 1, Term 1	Biology of the Cell	4	15	Compulsory
Year 1, Term 1	Inheritance, Genes and Evolution	4	15	Compulsory
Year 1, Term 1	Developmental Biology	4	15	Compulsory
Year 1, Term 2	The Moving Animal	4	15	Compulsory
Year 1, Term 2	Integrated Physiology 1	4	15	Compulsory
Year 1, Term 2	Integrated Physiology 2	4	15	Compulsory
Year 1, Term 3	Problem Definition and Investigation	4	15	Compulsory
Year 1, Term 3	Project	4	15	Compulsory
Year 2, Term 1	Basis of Disease	5	15	Compulsory
Year 2, Term 1	Ageing and Degeneration	5	15	Compulsory
Year 2, Term 1	Principles of Infectious Diseases	5	15	Compulsory
Year 2, Term 2	Control of Infectious Diseases	5	15	Compulsory
Year 2, Term 2	Principles of Pharmacology	5	15	Compulsory
Year 2, Term 2	Applied Pharmacology	5	15	Optional
Year 2, Term 2	Imaging of Disease	5	15	Optional
Year 2, Term 2	Introduction to Animal Behaviour, Welfare and Ethics	5	15	Optional
Year 2, Term 2	Introduction to One Health	5	15	Optional
Year 2, Term 3	Biological Sciences Research Project	5	30	Compulsory
Year 3	Biological Sciences Project	6	60	Compulsory
Year 3, Term 2	Advanced Concepts in Biobusiness	6	15	Optional
Year 3, pre-Term 1	Practical Investigative Biology	6	15	Optional
Year 3, Term 1	Comparative Animal Locomotion	6	30	Optional
Year 3, Term 1	Advanced Concepts in Reproduction	6	15	Optional
Year 3, Term 1	Development & Disease	6	15	Optional
Year 3, Term 1	Animal Behaviour & Cognition	6	15	Optional

Year 3, Term 1	Applied Molecular Microbiology	6	15	Optional
Year 3, Term 1	Parasitology of Human & Veterinary Tropical Diseases	6	15	Optional
Year 3, Term 1	Omic Approaches to Biology	6	15	Optional
Year 3, Term 1	Endocrine & Metabolic Syndromes	6	15	Optional
Year 3, Term 1	Advanced Skeletal Pathobiology	6	15	Optional
Year 3, Term 1	Science of Animal Welfare	6	15	Optional
Year 3, Term 2	Infection & Immunity	6	30	Optional
Year 3, Term 2	Comparative Models of Disease	6	15	Optional
Year 3, Term 2	Applied Animal Welfare	6	15	Optional
Year 3, Term 2	Comparative Anatomy	6	15	Optional
Year 3, Term 2	Animals & Human Society	6	15	Optional
Year 3, Term 2	Epidemiology: the Bigger Picture	6	15	Optional
Year 3, Term 1	Principles of Pathology	6	30	Optional
Year 3, Term 2	Applications of Pathology	6	30	Optional
Year 3	Variety of modules available at KCL	6	15 or 30	Optional
Year 4, Term 1	Research Skills	7	15	Compulsory
Year 4	Applied Biological Research Project	7	105	Compulsory

29. Work Placement Requirements or Opportunities	Compulsory Placement year at Level 7. MSci Applied Biological Research with Placement Year is also available including placement years at Level 6 and 7
30. Student Support	http://www.rvc.ac.uk/study/support-for-students

31. Assessment
Assessment and Award Regulations
https://www.rvc.ac.uk/about/the-rvc/academic-quality-regulations-procedures

Version Number	Amended by	Date
1	Academic Quality Manager	06.02.2020
2	Academic Quality Manager	17.06.2020
3	Academic Quality Manager	30.06.2020
4	Course Director	02.02.2021
5	Course Director & Sciences Course Support Manager	25.04.2022

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8. Course Management Team	Course Director: Dr Charlotte Lawson; Year 1 Leader: Dr Donald Palmer; Year 2 Leader: Dr Abir Mukherjee; Year 3 Leader: Dr Claire Russell Year 4 Leader: Dr Isabel Orriss Year 5 Leader: Dr Claire Russell
9. FHEQ Level of Final Award	Level 7 See https://www.qaa.ac.uk/quality-code/qualifications-frameworks
10. Date of First Intake	2022
11. Frequency of Intake	Annually in September
12. Duration and Mode(s) of Study	Full time: MSci with Placement Year– five years Face to face. A mix of teaching approaches including onsite and digital, synchronous and asynchronous, class and self-paced, expert-led, group and individual.
13. Registration Period *(must be in line with the General Regulations for Study and Award)*	Full Time: Minimum 3 Academic years; Maximum 6 Academic years Part Time: Minimum 4 Academic years; Maximum 7 Academic years
14. Timing of Examination Board meetings	Annually in July (Year 1, 2, 4), Annually in July the following year (Year 3), Annually in September (Year 5)
15. Date of Last Periodic Review	n/a
16. Date of Next Periodic Review	2023
17. Language of study and assessment	English
18. Entry Requirements	https://www.rvc.ac.uk/study/undergraduate/msci-applied-biological-research#tab-entry-requirements Progression to the Placement Year or the Advanced Placement Year. Written offer of a Placement for years 3 and 5 from a placement provider. The proposed placement project must address the Learning Outcomes. The placement provider must satisfactorily complete an 'RVC Collaborative

	Partners' form. The student must attend a Placement Health and Safety Induction at the RVC. Travel Risk Assessments must be performed if the placement is abroad. A Placement Supervisor must be named, and their details provided. Progression to Year 5 To be considered for progression to Year 5, applicants must have achieved an aggregate Year 2 mark of at least 50%
19. UCAS code	C105
20. HECoS Code	100345
21. Relevant QAA subject benchmark	Biosciences

22. Other External Reference Points

Report of the Committee of Enquiry into Veterinary Research (the Selborne Report)

ABPI, 2019, Bridging the skills gap in the biopharmaceutical industry: Maintaining the UK's leading position in life sciences.

Quality Assurance Agency, The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies, 2014

Higher education credit framework for England: guidance on academic credit arrangements in higher education in England, Quality Assurance Agency, 2008

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23. Aims of programme

BSc Biological Sciences

- To offer a high quality course, in which students are challenged by, and stimulated to challenge, accepted wisdom in all fields of biological and biomedical science.
- To prepare graduates for careers in academic and industrial research, biotechnology and the pharmaceutical industry in general, and in other health and medicine-related industries.
- To offer a high quality preparation for students aspiring to graduate entry to Medicine, Dentistry or Veterinary Medicine.

Placement Year

- To prepare students for the workplace through development of employability skills and understanding of the sector and organisation in which they are placed
- To increase student employability by providing work and research experience with a placement provider
- To provide students with a framework for lifelong learning
- To provide opportunity to develop research skills, including synthesis of information, critical analysis and an appreciation of factors that contribute to uncertainties

MSci Applied Biological Research

The specific aims of the MSci Applied Biological Research Year are to enable students to:

- Gain research experience within biological and biomedical sciences that is relevant to their degree.
- Gain a deep and systematic understanding of current questions, problems and methods employed within the selected specialised research topic.
- Implement principles of project and experimental design and carefully execute, record and clearly disseminate research.

- Use self-reflection to improve levels of knowledge, professionalism, personal skills and research skills.
- Develop a sound appreciation of the research environment in which the student is working and their role within it.

24. Overall Programme Level Learning Outcomes - the programme offers opportunities for students to achieve and demonstrate the following learning outcomes. Learning outcomes should be specified for all intermediate awards as well as for the terminal award.

On successful completion of years 1-4, students will:	Modules in which each learning outcome will be developed and assessed:
• Have a detailed understanding of cell biology, physiology, and genetics.	Year 1 modules
• Have a detailed understanding of the basis of infectious & non-communicable diseases and an appreciation of pharmacology and the broader applications for disease control.	Year 2 modules
• Display practical skills, including the ability to design and execute experiments, analyse and interpret the resultant data, and present conclusions in a variety of formats.	Year 2 Research Project
• Have developed the ability to access appropriate information, make methodical observations on the normal and abnormal functioning of biological systems, discriminate between important and relatively unimportant information and observations, reflect on information and observations, solve problems, discuss uncertainty in relation to scientific “facts”, and balance different schools of thought.	Year 1, 2, 3, 4 and 5 Research Projects
• Develop independent and lifelong learning skills to promote their own personal and professional development.	Tutorials & Skills Workshops (across all modules)
• Develop important employability skills including: communication, teamwork, personal management and career planning, effective learning, problem-solving, digital literacy, numeracy.	Across all modules, with particular emphasis in projects and tutorials
• Act with integrity, be honest, fair and compassionate in all their work. • Maintain high ethical principles in relation to professional dealings, the use of information and experimentation in humans and animals.	Investigative Projects (all years)
• Have an appreciation of health and safety appropriate to laboratory and field work, including completion and understanding of risk assessment and COSHH documents,	Year 2, 3, 4 and 5 Research Projects
On completion of the placement year 3, students will additionally be able to:	

Employ models of reflection to explore and critically evaluate how these influence own learning, personal and professional planning; providing recommendations and action plan to improve	Placement Year 3: Professionalism module
Demonstrate experience within the biological sciences that is relevant to their degree	Year 1, 2, 3, 4 and 5 Research Project Placement Year 3: Both Professionalism and Project modules
Demonstrate an appreciation of the sector in which the student is working, a broad knowledge of the field, and their role within it	Placement Year 3: Both Professionalism and Project modules
Devise, interrogate and sustain arguments using scholarly sources and the accurate deployment of established techniques of analysis and enquiry within one topic.	Year 1, 2, 3, 4 and 5 Research Project Placement Year 3: Both Professionalism and Project modules
Demonstrate an appreciation of uncertainties and limits of knowledge	Year 1, 2, 3, 4 and 5 Research Project Placement Year 3: Both Professionalism and Project modules
On completion of the masters year, students will additionally be able to:	
• Demonstrate extensive research experience within biological sciences that is relevant to their degree.	Year 3, 4, 5 projects
• Demonstrate a deep and systematic understanding of current questions, problems and methods employed within the selected specialised research topic	Research Skills module & Year 5 project
• Implement principles of project and experimental design and carefully execute, record and clearly disseminate research.	Year 5 Research Skills module & Year 2, 3, 4, 5 projects

• Use self-reflection to improve levels of knowledge, professionalism, personal skills and research skills.	Tutorials & Skills Workshops (across all modules), also projects, but particularly Year 3 Professionalism module and Year 5 Research Skills module
• Develop a sound appreciation of the research environment in which the student is working and their role within it.	Year 3: Both Professionalism and Project modules Year 5 Research Skills module and Project
25. Teaching/learning methods	**Approximate total number of hours** These figures may differ during the COVID-19 pandemic
Lectures	8-10 hours per week
Practical / Directed Learning sessions	8-10 hours per week
Tutorials & self-directed Learning	5 hours per week
Placement Years (Year 3 and 5)	35 hours per week
26. Assessment methods	**Percentage of total assessment load**
Coursework	MSci: 20%
Written Exams	MSci: 30%
Projects	MSci: 50%
27. Feedback	
In each module in each year, there are a number of formative feedback opportunities. These include written formative feedback on individual coursework, online quizzes with answers, group question and answer sessions, feedback to the year group about exam and ICA performance, feedback to individual students about exam and ICA performance (in one-to-one tutorials). Students are encouraged to seek feedback from lecturers and tutors as needed during all small group learning and practical classes. Frequent opportunities for formative feedback (oral and written) during investigative projects.	

28. Programme structures and requirements, levels, modules, credits and awards
NB: The College will not deliver any module or part of a programme if circumstances have changed to threaten its quality or viability. Such offerings could change after a student has started the course. However, the College will always offer alternatives that will be of equal cost in both fees and add-on expenses to the student and of equal academic value.

	Module Title	FHEQ Level	Credits	Compulsory or optional
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Year 1, Term 1	Inheritance, Genes and Evolution	4	15	Compulsory
Year 1, Term 1	Developmental Biology	4	15	Compulsory
Year 1, Term 2	The Moving Animal	4	15	Compulsory
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Year 1, Term 2	Integrated Physiology 2	4	15	Compulsory
Year 1, Term 3	Problem Definition and Investigation	4	15	Compulsory
Year 1, Term 3	Project	4	15	Compulsory
Year 2, Term 1	Basis of Disease	5	15	Compulsory
Year 2, Term 1	Ageing and Degeneration	5	15	Compulsory
Year 2, Term 1	Principles of Infectious Diseases	5	15	Compulsory
Year 2, Term 2	Control of Infectious Diseases	5	15	Compulsory
Year 2, Term 2	Principles of Pharmacology	5	15	Compulsory
Year 2, Term 2	Applied Pharmacology	5	15	Optional
Year 2, Term 2	Imaging of Disease	5	15	Optional
Year 2, Term 2	Introduction to Animal Behaviour, Welfare and Ethics	5	15	Optional
Year 2, Term 2	Introduction to One Health	5	15	Optional
Year 2, Term 3	Biological Sciences Research Project	5	30	Compulsory
Year 3, sandwich placement year	Biological Sciences-related Placement Project	6	75	Compulsory
Year 3, sandwich placement year	Professionalism	6	45	Compulsory
Year 4	Biological Sciences Project	6	60	Compulsory
Year 4, Term 2	Advanced Concepts in Biobusiness	6	15	Optional
Year 4, pre-Term 1	Practical Investigative Biology	6	15	Optional
Year 4, Term 1	Comparative Animal Locomotion	6	30	Optional
Year 4, Term 1	Advanced Concepts in Reproduction	6	15	Optional

Year 4, Term 1	Development & Disease	6	15	Optional
Year 4, Term 1	Animal Behaviour & Cognition	6	15	Optional
Year 4, Term 1	Applied Molecular Microbiology	6	15	Optional
Year 4, Term 1	Parasitology of Human & Veterinary Tropical Diseases	6	15	Optional
Year 4, Term 1	Omic Approaches to Biology	6	15	Optional
Year 4, Term 1	Endocrine & Metabolic Syndromes	6	15	Optional
Year 4, Term 1	Advanced Skeletal Pathobiology	6	15	Optional
Year 4, Term 1	Science of Animal Welfare	6	15	Optional
Year 4, Term 2	Infection & Immunity	6	30	Optional
Year 4, Term 2	Comparative Models of Disease	6	15	Optional
Year 4, Term 2	Applied Animal Welfare	6	15	Optional
Year 4, Term 2	Comparative Anatomy	6	15	Optional
Year 4, Term 2	Animals & Human Society	6	15	Optional
Year 4, Term 2	Epidemiology: the Bigger Picture	6	15	Optional
Year 4	Variety of modules available at KCL	6	15 or 30	Optional
Year 5, Term 1	Research Skills	7	15	Compulsory
Year 5	Applied Biological Research Project	7	105	Compulsory
29. Work Placement Requirements or Opportunities		Compulsory Placement years at Levels 6 and 7		
30. Student Support		http://www.rvc.ac.uk/study/support-for-students		
31. Assessment Assessment and Award Regulations https://www.rvc.ac.uk/about/the-rvc/academic-quality-regulations-procedures				

Version Number	Amended by	Date
1	Academic Quality Manager	06.02.2020
2	Academic Quality Manager	17.06.2020
3	Academic Quality Manager	30.06.2020
4	Course Director	02.02.21