BSc/MSci Bioveterinary Sciences Programme Specification
Applies to Cohort Commencing 2014

1. Awarding institution	The Royal Veterinary College
2. Teaching institution	The Royal Veterinary College (University of London)
3. Programme accredited by	N/A
4. Final award	Bachelor of Science / Master in Science
5. Programme Title	Bioveterinary Sciences
6. Date of First Intake	2002 (2014 for transfer from BSc Bioveterinary Sciences to MSci year 4)
7. Frequency of Intake	Annually in September
8. Duration and Mode(s) of Study	Three years full-time
9. Timing of Examination Board meetings	Annually in July
10. Date of Last Periodic Review	2014
11. Date of Next Periodic Review	2019/20
12. Entry Requirements	*Academic requirements (http://www.rvc.ac.uk/Undergraduate/BScBiovetSci/EntranceReq.cfm)* • Three B grades or above at Advanced-Level/A2 or equivalent. One must be Chemistry or Biology/Human Biology, plus one other Science (Chemistry, Biology/Human Biology, Physics, Maths), plus one other subject (not General Studies). Other courses that will be accepted include: • Access to HE Diploma. • BTEC National Diploma in Animal Management. • Cambridge Pre-U. • International Baccalaureate. • Scottish Qualifications. • Welsh Baccalaureate. • Irish Leaving Certificate. • UCL University Preparatory certificate for Science & Engineering (UPCSE) for International Students. <u>And</u> GCSEs at grade B in English, Mathematics (if not studied at A-Level) and Double Science (or in two individual science subjects, if taken separately) <u>Progression to Year 4</u> To be considered for progression to Year 4, applicants must have achieved an aggregate

	Year 2 mark of at least 60% or an aggregate Year 2 mark of at least 55% with 62% in the project report, and at least 55% in Year 3 of the BSc Bioveterinary Sciences.
13. UCAS code	D300 for BSc, D302 for MSci
14. JACS Code	D300 for BSc, TBC for MSci
15. Relevant QAA subject benchmark group(s)	Biosciences

16. Reference points

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

Quality Assurance Agency, The framework for higher education qualifications in England, Wales and Northern Ireland

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

17. Educational aims of programme

BSc Bioveterinary Sciences

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

MSci Bioveterinary Sciences

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

The specific aims of the MSci Year are to enable students to:
- gain research experience within the biological 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

18. Programme outcomes - the programme offers opportunities for students to achieve and demonstrate the following learning outcomes.

At the time of graduation students should, to a standard appropriate for a new bachelor of science graduate, be able to:

A. Demonstrate knowledge and understanding of:
1. Specialised terminology which underpins an individual discipline or subject area.
2. Cognate sciences.
3. The political, social and economic context of the applications of science.

B. Display the following cognitive (thinking) skills:
The ability to:
1. Access information and skills as required by a task
2. Make methodical observations on the normal and abnormal functioning of biological systems
3. Discriminate between important and relatively unimportant information and observations
4. Reflect on information and observations, and solve problems
5. Discuss uncertainty in relation to scientific "facts", and balance different schools of thought.

C. Display the following practical skills including the ability to:
1. Design and execute experiments, and to analyse and interpret the resultant data.
2. Present conclusions in a variety of formats.

D. The following are considered to be Key skills:
1. Communication.
2. Teamwork.
3. Personal management and career development.
4. Effective learning.
5. Problem-solving.
6. Information technology.
7. Numeracy.
8. Acting with integrity, being honest, fair and compassionate in all your work.
9. Maintaining high ethical principles in relation to business dealings, the use of information and experimentation in man and animals.

At the time of graduation students should, to a standard appropriate for a new master in science graduate, be able to:

A. Demonstrate knowledge and understanding of:
1. Specialised terminology which underpins an individual discipline or subject area.
2. Cognate sciences.
3. The political, social and economic context of the applications of science.

B. Display the following cognitive (thinking) skills:
The ability to:
1. Access information and skills as required by a task
2. Make methodical observations on the normal and abnormal functioning of biological systems
3. Discriminate between important and relatively unimportant information and observations
4. Reflect on information and observations, and solve problems
5. Discuss uncertainty in relation to scientific "facts", and balance different schools of thought.

C. Display the following practical skills including the ability to:
1. Design and execute experiments, and to analyse and interpret the resultant data.
2. Present conclusions in a variety of formats.

D. The following are considered to be Key skills:
1. Communication.
2. Teamwork.
3. Personal management and career development.
4. Effective learning.
5. Problem-solving.
6. Information technology.
7. Numeracy.
8. Acting with integrity, being honest, fair and compassionate in all your work.
9. Maintaining high ethical principles in relation to business dealings, the use of information and experimentation in man and animals.

E. Demonstrate the following advanced skills:
1. 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
2. Clearly and properly record their research
3. Demonstrate excellent professional conduct
4. Identify specific areas for personal and skill development

Teaching/learning methods

Students develop their knowledge and understanding through attendance at lectures, seminars, workshops, tutorials and through a variety of directed and self-directed learning activities, including practical exercises. They will learn cognitive skills through problem solving, case studies, reflection and role modelling. Practical skills will be learned through demonstration, observation, prosecution, feedback, role modelling and experimentation. Finally, Key Skills will be taught through group work and exercises, structured learning, practical work, reflection, presentations (oral and written) and problem-solving exercises.

During Year 4, the MSci Research year, an extended project is carried out under the supervision of a Supervisor. Training will be given to the student as appropriate by the supervisor and other work colleagues, with regular meetings with the supervisor.

Assessment

A. Knowledge and understanding:
Students will be assessed through a combination of formative, in-course and summative examinations, using a range of question formats.

B. Cognitive (thinking) skills:
Cognitive skills will be assessed through appropriately structured written examinations, together with project reports and discussion of poster presentations.

C. Practical skills:
Practical skills will be assessed using structured tasks and laboratory-based projects.

D. Key Skills:
Through key skills assessment criteria, alongside systems and discipline-based assessment criteria, these skills will be assessed in a variety of ways throughout the course.

E. Research Skills:
Research skills are assessed in all years through written and oral presentation of a literature-based project and three experimental projects, with supervisor assessments for experimental projects. Formative assessment of the project during Year 4 (MSci Research Year) will be via participation in lab meetings journal clubs, supervisory meetings and tutorials; self-assessment of skills. Summative assessment will be assessment of a Project Report and associated poster, an oral examination and a Supervisor's assessment. Assessment of the Research Skills module is via a Research Proposal, with presentation at two journal clubs being required.

19. Programme structures and requirements, levels, modules, credits and awards

The Bioveterinary Sciences degree is a linear, non-modular programme in its first two years. In the Third Year, each student follows a programme of modules and course units from those offered by the RVC and/or other institutions.

Year One is valued at 120 credits at Level 4; Year Two, 120 credits at Level 5; and Year Three, 120 credits at Level 6.

Year 1	Year 2
The core course will comprise: • Essential Biomedical Sciences- The Moving Animal, The Living Cell, Inheritance; Reproduction & Development, Basic Concept in Immunology • Systems & Investigative Biology, Problem Definition and Investigation	The core course will comprise: • The Enemy Within • The Enemy Without • Pharmacology: Principles and Practice • Imaging of Disease • Bioveterinary-related Research Project
Year 3	**Year 4**
Hypothesis driven research project involving data analysis and interpretation on a bioveterinary-related topic Optional RVC taught modules	Research Skills module (15 credits) Hypothesis driven research project involving data analysis and interpretation (105 credits)

The generic theme will continue throughout the first two years and will comprise:
- finding and using information
- what makes a professional scientist?
- epistemology
- scientific method
- statistics
- data recording
- basic epidemiology
- experimental design
- risk

• analytical tools • ethics • communication skills • leadership • team building and function • business and financial management • patent law	
20. Work Placement Requirements	N/A