Graduate Program In Veterinary Science:
Guidelines For Students And Faculty

A Compilation of Philosophical Statements, Lists of Requirements and Suggested Timetables for Current and Prospective Students

Produced by the Graduate Faculty of the Department of Veterinary Science
January, 1993
(Revised June, 2002; September, 2010; October, 2012; September, 2015)
DEPARTMENTAL AND PROGRAM GOALS
The overall goal of the research program in Veterinary Science has been to improve our understanding of the biology of Equidae. Emphasis has been placed on investigation of the causes and mechanisms which affect the production and performance of horses, regardless of breed. One goal of the program is to provide opportunities for graduate students to develop the skills necessary to become competent scientists who are creative and critical thinkers with the contemporary skills and knowledge to perform independent research and to effectively communicate their results. The Department offers the Master of Science and the Doctor of Philosophy degrees in Veterinary Science with specialization in pathology, virology, microbiology, parasitology, immunology, genetics, reproductive physiology, pharmacology, and musculoskeletal sciences. Each of these subspecialties have a general emphasis on the horse.

Students enrolled in the Master of Science program will gain comprehensive knowledge in the field of specialization through advanced course work and an introduction to research methods. The candidate is expected to demonstrate sufficient comprehension and mastery of the principles of scientific investigation to frame a question related to the field of interest and to design and execute an investigation which will provide a valid answer, presented in the form of a thesis. This program is generally completed in 2 years.

The Doctor of Philosophy program is research oriented, enabling the student to become a self-educating and creative scholar. This degree implies that the individual has demonstrated the capacity to frame an interrelated series of questions and to design and execute an appropriate series of investigations. Research projects are expected to either answer all of the questions or illuminate the area of inquiry in such a way that the resulting dissertation and publications will constitute a definitive contribution to science. This program is generally completed in 4-5 years.

Admission
Application is made to the University of Kentucky Graduate School using the Hobson’s ApplyYourself online application system. Application information can be found at http://www.research.uky.edu/gs/ProspectiveStudents/Admission.html. All applicants meeting the minimum requirements of The Graduate School will be considered for acceptance. Each applicant is considered individually and acceptance into the program depends a great deal on the background and interest of the applicant and our ability to provide a quality program in the area of interest.

Applicants need a strong academic background with undergraduate course preparation in biology, chemistry and mathematics. Students accepted into the program should have an appropriate degree from an accredited institution, a minimum grade point average (GPA) of 3.0 on a 4.0 scale and a combined score (verbal plus quantitative) on the Graduate Record Examination (GRE) of not less than 300 (new exam format) or 1100 (old format). Applicants with lesser qualifications will be accepted only on the recommendation of a graduate faculty member who is willing to support financially and serve as the research advisor for the student and with the approval of our graduate faculty body.

Many of the requirements for students in our program are identical to the Graduate School requirements as stated in The Graduate School BULLETIN. Students are expected to obtain a copy of the Bulletin, review its contents and assume their responsibilities once accepted into the program. The Graduate School BULLETIN is available online at http://www.research.uky.edu/gs/bulletin/bullinfo.shtml.

In the following document we will refer to The Graduate School requirements in bold type, but will not restate them in their entirety for the sake of brevity and clarity.

Financial Assistance
A limited number of funded fellowships and research assistantships available through the Department and/or the University are awarded on the basis of academic merit. These typically provide a stipend, tuition scholarship, and health insurance. Some students are supported through extramural grant funds awarded to individual faculty members. All students are encouraged to apply to extramural sources for fellowship monies to support their studies. Those students with superior academic qualifications and high GRE scores will be nominated for institutional fellowships.

Course and Grade Requirements
Students enrolled in the MS program must meet the Graduate School Requirements of at least 24 units of coursework, 12 of which must be at the 600 or 700 level and 9 of these 12 in Veterinary Science Department courses. Both MS and PhD students must take two courses in graduate level biochemistry/molecular/cell biology (CHE550 & 552 OR any two of IBS 601-606) and one semester of statistics (STA 570 or STA 580) or demonstrate equivalent coursework completed elsewhere. As well, TOX/VS 600, Ethics in Scientific Research, is strongly recommended. Although students in the PhD program have no additional course requirements other than those required for residency credit (see the Graduate Bulletin), the coursework for each student will be developed in concert with the major advisor and the advisory committee. Students in the MS program must enroll and give a presentation in at least 1 semester of Departmental Seminar (VS 770) and students in the PhD program must enroll and give presentations in at least 2 semesters of VS 770.

Students enrolled in MS and PhD programs must meet the standards of The Graduate School concerning grades to remain in good standing and to retain their stipends. After completing 12 credit hours, a student will be placed on scholastic probation if they have a cumulative GPA of less than 3.0. Students will have one
3. Work with the major professor to formulate your research plan for the dissertation (a suggested format is appended).

4. Continue coursework and initiate research activities. Formulate your research plan for the dissertation (a suggested format is appended).

5. Schedule periodic meetings with the advisory committee to ensure continuity in the program. These meetings must be held at least once (preferably twice) a year at the request of the student. As stipulated by the Graduate School, a record of the proceedings of each meeting must be filed by the major professor with the Director of Graduate Studies and will become part of the permanent file of the student. You are encouraged to consult with members of the committee and the university-at-large for advice outside of the official meeting times.

6. When you have completed the majority of your scheduled courses and feel prepared, petition your committee to schedule the Qualifying Examination. Requirements are listed in the BULLETIN. Regardless of the format used for administering the examination, the purpose of the PhD Qualifying examination “is to verify that students have sufficient understanding of and competence in their fields to become candidates for the degree.” If the advisory committee uses a grant proposal format for the qualifying examination, the following guidelines will apply:

a) You will select and present topics which interest you to the committee.

b) The committee chooses one of the above or presents an alternate topic for you to develop into an NIH or USDA style proposal. Examples of proposals will be available for your review through the Director of Graduate Studies.

c) The examination is based on: 1) the quality of the written proposal; 2) the oral presentation and defense of the proposal; and 3) demonstration of a comprehensive knowledge, ability and understanding of the scholarly subject matter in your area of concentration.

At least two weeks prior to the qualifying exam date, submit the online request to schedule the qualifying exam (http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm).
7. After successful completion of the qualifying exam, you attain "candidate" status and continue your research. Post-qualifying students need to enroll in 2 credit hours of VS 767 each semester until the dissertation defense is completed. Maintain close contact with the advisory committee which will monitor your progress. Committee meetings should be scheduled at least once a year.

8. When you and the major professor/committee agree that a point of conclusion has been reached in your research (i.e. the dissertation has been written) AND you have completed two semesters of post-qualifying residency, you are eligible to schedule the final examination. See the BULLETIN for details and timetables which must be met. Submit the online Notification of Intent to Schedule the Final Examination at least 8 weeks prior to the anticipated defense date. The online Request for Final Examination must be submitted 2 weeks prior to the defense date (http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm). All members of the advisory committee (except the outside examiner) must have an opportunity to suggest revisions prior to scheduling the Final Examination.

9. Within 30 days after the beginning of the semester you intend to graduate, submit the online application for degree through myUK (http://myuk.uky.edu/).

10. After the final exam has been passed, the final copy of the dissertation must be submitted to The Graduate School within 60 days. Instructions for preparation and submission of the Electronic Dissertation are at http://www.research.uky.edu/gs/CurrentStudents/theses_prep.html.

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**SUGGESTED COURSES**

**Graduate Program In Veterinary Science**

**Curriculum** - Each course described below may be taken as specifically directed by the student's Advisory Committee. Although students are not limited to these courses, total course requirement will be set forth by the student’s Advisory Committee taking into account the background and special interests of the individual student. **Courses in bold satisfy the core requirements (two courses in biochemistry/molecular/cell biology; one statistics course).**

- **ANIMAL SCIENCE (ASC)**
  - 601 Mammalian Endocrinology 3
  - 660 Physiology of Reproduction 3

- **BIOLOGY (BIO)**
  - 494G Immunobiology 3
  - 510 Recombinant DNA Techniques Laboratory 4
  - 529 Developmental Biology 3
  - 542 Histology 5
  - 550 Comparative Physiology 5
  - 615 Molecular Biology 3
  - 685 Advanced Immunology (MI 685) 3
  - 595 Immunology Laboratory (MI 595) 2
  - 782 Virology (xlist VS782) 3
  - 601 Special Topics in Molecular and Cellular Genetics 1

- **BIOCHEMISTRY (BCH)**
  - 607 General Biochemistry (same as IBS 601) 3
  - 608 General Biochemistry (same as IBS 602) 3
  - 610 Biochemistry of Lipids and Membranes 3
  - 611 Biochem. Cell Biol. of Nucleic Acids 3
  - 612 Structure function of proteins enzymes 3

- **CHEMISTRY (CHE)**
  - 550/552 Biochemistry (2 Semesters) 3 + 3
  - 520 Radiochemistry 3
  - 521 Radiochemistry lab 1-2

- **ENTOMOLOGY (ENT)**
  - 567 Applications of Genetics 4

- **GRADUATE SCHOOL**
  - 610 College Teaching 1
  - 620 Teaching in the 21st Century 1-2
  - 630 Instructional Technology 1
  - 640 Grant Writing 3
  - 650 Preparing Future Faculty 2

- **INTEGRATED BIOMEDICAL STUDIES (IBS)**
  - 601 Biomolecules and Metabolism 3
  - 602 Molecular Biology and Genetics 3
  - 603 Cell Biology and Cell Signalling 3
  - 606 Physiological Communications 3
### PHYSIOLOGY (PGY)
- 502 Principles of Physiology  5
- 617 Physiological Genomics  2
- 630 Advanced Topics in Physiology  1-3
  - Experimental Design
  - Biology of Aging
  - Cell-Cell Communication

### RADIATION MEDICINE (RM)
- 545 Radiation Hazards and Protection  3
- 740 Mammalian Radiation Biology  2

### STATISTICS (STA)
- 570 Basic Statistical Analysis  4
- 580 Biostatistics I  3
- 671 Regression and Correlation  2
- 672 Design and Analysis I  2
- 679 Design and Analysis II  3

### VETERINARY SCIENCE (VS)
(All listed courses except those in the 300 series)
- 500 Advanced Equine Reproduction  3
- 597 Special Topics in Veterinary Science  1-9
- 600 Ethics in Research (X-listed as TOX 600)  1-2
- 748 Masters Dissertation Research*  0
- 767 Dissertation Residency Credit  2
- 768 Residence Credit for the Master’s Degree  1-6
- 770 Veterinary Science Seminar  1
- 777 Current Literature in Equine Reproduction  1
- 781 Correlative Pathology  1-3
- 782 Virology (X-listed as BIO 782)  3
- 785 Advanced Veterinary Parasitology  3
- 786 Advanced Veterinary Pathology  3
- 791 Tech. in Veterinary Microbiology  1-9
- 792 Tech. in General Veterinary Pathology  1-9

*Registration for VS 748 for zero-credit-hours is done by the Director of Graduate Studies, following the student’s completion of all regular course requirements.

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**For further information:**
Visit the University of Kentucky Department of Veterinary Science website at [http://vetsci.ca.uky.edu](http://vetsci.ca.uky.edu)

Contact the Director of Graduate Studies, Daniel K. Howe, PhD, dkhowe2@uky.edu