

GRADUATE PROGRAM HANDBOOK

Veterinary Clinical Sciences
School of Veterinary Medicine
Louisiana State University

A Supplement to the Louisiana State University General Catalog Undergraduate/Graduate
Intended for Use by VCS Graduate Students and Faculty

Approved by VCS Graduate Faculty:
September 12, 2019
Amended on February 21, 2020

Department of Veterinary Clinical Sciences
Graduate Program Guidelines - A Supplement to the LSU General Catalog
Graduate

Contents

1.	GENERAL INFORMATION	3
1.1.	Graduate programs available	3
1.2.	Philosophy and objectives	3
1.3.	Qualifications, minimum requirements and application procedures	4
2.	THE GRADUATE PROGRAM	4
2.1.	Application	4
2.1.1.	Application package	4
2.2.	Registration	5
2.2.1.	Non-matriculating students	5
2.3.	Major professor	5
2.3.1.	Selection of major professor	5
2.3.2.	Role of major professor	5
2.4.	Graduate Committee	6
2.4.1.	Structure of Student's Graduate Committee	6
2.4.2.	Role of Student's Graduate Committee	7
2.5.	Departmental Graduate Faculty	7
2.6.	Departmental Graduate Advisor	7
2.7.	Structure of Graduate Committees	7
2.8.	Academic Program	8
2.8.1.	Program of study	8
2.8.2.	Transfer of credits	8
2.9.	Research program	8
2.10.	Department Resources	9
3.0	THE GRADUATE FACULTY	10
3.1.	Graduate Faculty Listing	10
4.0	MASTER OF SCIENCE DEGREE PROGRAM	11
5.0	PhD DEGREE PROGRAM	12
6.0	GRADUATE COURSE LISTING	14
7.0	Thesis and Dissertation	16
8.0	General Examination and Final Thesis/Dissertation Defense	17
9.0	Publications	17
10.0	Academic Standards	17

1. GENERAL INFORMATION

1.1. Graduate programs available

The School of Veterinary Medicine offers the Master of Science degree (MS) and Doctor of Philosophy (Ph.D.) degrees in Biomedical and Veterinary Medical Sciences. Under this umbrella, the Department of Veterinary Clinical Sciences offers the Master of Science (MS) and Doctor of Philosophy (Ph.D.) degrees.

1.2. Philosophy and objectives

Advanced training in veterinary clinical sciences at the MS or PhD level is designed to enhance competitiveness and scholarship. The objective of this program is to provide students with the tools to conduct original research in clinical sciences of small, large, and exotic animals. The faculty of this department are specialized in a wide range of clinical disciplines including surgery, internal medicine, pharmacology, oncology, radiology, dermatology, ophthalmology, theriogenology, anesthesia, and in basic and applied research in comparative orthopedics. Collaborative research with Pathobiological Sciences and Comparative Biological Sciences departments in the School of Veterinary Medicine, Pennington Biomedical Research Center, and LSU AgCenter provides latitude in the design of study programs. Overall, our training programs are designed to prepare students for a teaching or research career at an academic institution, in industry or in government.

There are two advanced training programs in veterinary clinical sciences:

1) Advanced training toward the MS or PhD degree combined with a clinical residency training program (for example, anesthesia and pain management, avian/exotic animal medicine and surgery, equine medicine, equine surgery, small animal surgery, or theriogenology). A DVM degree or equivalent is required for this program. Specific goals of this advanced training in clinical sciences include:

- To provide post DVM students coursework and advanced training in clinical specialty areas of veterinary medicine to augment the clinical training for certification by one of the veterinary specialty boards
- To provide post DVM students seeking certification by one of the veterinary specialty boards experience in clinical research
- To provide post DVM students advanced training in clinical instruction and to allow students to perform some didactic instruction in preparation for a faculty position in a veterinary school
- To provide post DVM students seeking specialty board certification advanced training in applied research in veterinary medicine so that graduates have skills necessary to conduct independent research

2) The second program provides advanced training toward a MS or PhD degree without clinical training.

- To provide post-baccalaureate, DVM, or DVM + residency students graduate

level research training in preparation for a specialized career in academia, referral practices or industry.

A primary objective of a graduate program is to train the student to perform effective, independent research. The essence of research is problem solving and, therefore, the student must learn to precisely define the problem, design meaningful experiments to test a proposed hypothesis, conduct experiments and collect data in a careful and precise manner, analyze and evaluate collected data, and finally, draw logical conclusions from the research data.

It is vital for students to develop skills in communication to teach students and clientele and to convey scholarly findings to the veterinary, scientific, and lay community. This skill will be developed in the clinic while working with students, faculty, clients, and referring veterinarians, in clinic rounds discussions as a discussant and as a discussion leader, in a journal club discussion format, and in the department seminar series.

1.3. Qualifications, minimum requirements and application procedures

Acceptance of graduate students is the decision of the graduate faculty of the Department of Veterinary Clinical Sciences (VCS) and applicants are reviewed on a case-by-case basis. Academic qualifications of the applicant and the availability of funds, assignable facilities, and faculty are considered. Advanced study in Veterinary Clinical Sciences requires a working knowledge of chemistry, mathematics, anatomy, physiology, biology, and physics. Specific prerequisites may be required for department courses at the discretion of the course coordinator. If not in a current clinical residency program, one of the graduate faculty members of the department must have accepted you as a student in his/her laboratory. Potential applicants are encouraged to review the graduate faculty profiles and contact those whose interests match yours.

To qualify academically, an applicant must have

1. A Bachelor's or D.V.M. degree (or equivalent)
2. GPA of at least 3.00 based on a 4.00 grading system or equivalent
3. Combined verbal and quantitative GRE score of at least 300. GRE scores must be from within 5 years of application for admission.
4. A satisfactory score on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). TOEFL score of at least 550 (written) or 79 (IBT) or an IELTS score of 6.5 if English is not a first language and demonstration of satisfactory verbal communication skills.

2. THE GRADUATE PROGRAM

2.1. Application

Prospective graduate students should contact the Department of Veterinary Clinical Sciences prior to applying the Louisiana State University graduate school through their on-line process.

2.1.1. Application package

Applications and supporting materials for all graduate study must be submitted through the online application site for the LSU Graduate School. Official transcripts, official test scores, and other materials that come from third-party sources must be mailed to:

Graduate Admissions, 114 West David Boyd Hall, Baton Rouge, LA 70803. Applications are accepted at any time but are evaluated only after all supporting documents and credentials (official transcripts, official GRE scores, Graduate School application for admission, application fee) have been received. Application should be initiated at least six months prior to anticipated entry.

2.2. Registration

Graduate students must schedule classes themselves online via the MyLSU Registration Services feature. There is a registration deadline after which a late charge is assessed. The registration deadline is available on the graduate school calendar under the enrolled students tab on the Graduate School Calendars website. The student is responsible for this late fee, not the Department. Participants in an advanced clinical training program (residencies) may qualify for tuition fee exemption. As the effective dates of start of clinical programs fall during the first two weeks of July each year, it is imperative that Graduate Students meet with the VCS Graduate Advisor, their research mentor, and service chief to determine courses to be offered for the fall semester and to register for them within the first two weeks of the start of the advanced clinical training program.

The Department of Veterinary Clinical Sciences course offerings are listed each semester and distributed within the Department to each graduate student.

2.2.1. Non-matriculating students

Participants in an advanced clinical training program that are not required to do a MS degree may enroll as non-degree students and be classified, upon permission and request of the Department of Veterinary Clinical Sciences, as non-matriculating. However, please be advised that only twelve hours taken as a non-matriculating student may be applied toward a degree should you wish to later enter a degree program and only 6 hours at the 7000 level or above will transfer.

2.3. Major Professor

2.3.1. Selection of major professor

Each student will have a major professor who directs the student's Graduate Committee. The major professor may be assigned to or chosen by the graduate student, depending on the area of research. The major professor must be a member (associate or full) of the Department of Veterinary Clinical Sciences Graduate Faculty. A faculty member who holds adjunct status with the Department of Veterinary Clinical Sciences and who has associate or full membership of the Graduate Faculty can act as a co-major professor.

2.3.2. Role of major professor

The major professor is responsible for guiding the graduate student through the graduate program on a daily basis.

The major professor evaluates the graduate student's research, chairs the student's graduate examinations and acts as a liaison between the Student's Graduate Committee, the Departmental Graduate Faculty Committee and the LSU Graduate School. The major professor, in conjunction with the graduate student and the Student's Graduate Committee, are

responsible for constructing the course work program for the student and identifying possible deficiencies. This program of study should be constructed and approved by the Student's Graduate Committee and checked by the Graduate Advisor by the end of the first year. The major professor will report (written) the student's progress to the Departmental Graduate Advisor and the Departmental Graduate Faculty Committee at the end of each year (see 2.5, 2.6, 2.7).

2.4. Graduate Committee

2.4.1. Structure of Student's Graduate Committee – MS Program

According to LSU guidelines, the MS Student's Graduate Committee must consist of a minimum of three faculty members, including the major professor who acts as chair of the committee. The major professor, who must be from VCS, is designated as chair or co-chair of this committee. If either an adjunct or a non-tenure-track faculty member is the major professor, a full-time tenured or tenure-track graduate faculty member must co-chair the committee. Other committee members may be from the major department or from other pertinent departments. The MS graduate committee must include at least one full member of the graduate faculty, and at least one-half of the committee's graduate faculty members must be full-time tenured or tenure-track faculty members at LSU. Any additions to or changes in the makeup of this committee must be approved in advance by the Dean of the Graduate School. The Dean of the Graduate School may serve as a member of any committee or may appoint additional members.

2.4.2. Structure of Student's Graduate Committee – PhD Program

The PhD Student's Graduate Committee must consist of a minimum of three faculty members, including the major professor who acts as chair of the committee. All members of the graduate committee must be on the graduate faculty. According to LSU guidelines, the full advisory committee must comprise at least three members of the graduate faculty, including the major professor, who acts as chair or co-chair and who must be from the major department. If either an adjunct or a non-tenure track faculty member is the major professor, a full-time tenured or tenure-track graduate faculty member must co-chair the committee. At least one-half of the graduate faculty on doctoral committees must be full-time tenured or tenure-track faculty at LSU. A minimum of two of those faculty members must be from the VCS department and at least one of whom must be a full member of the LSU graduate faculty. The remaining members may be from the VCS department or may be from outside the department if pertinent to the student's area of concentration, with the proviso that at least one of the remaining members must be a full member of the graduate faculty.

The graduate committee must be approved by the Departmental Graduate Faculty and the Dean of the Graduate School. The Student's Graduate Committee should be composed of those faculty members best qualified to direct and evaluate the student's program of study and research. Responsibility for selection of the committee lies with the student in consultation with their graduate advisor. See the Graduate School section of the LSU Catalogue for graduate school committee requirements.

2.4.3. Role of Student's Graduate Committee

The Graduate Committee is responsible for initially reviewing the course work program for the

student and accepting this program (with revisions) before review by the Departmental Graduate Faculty Committee. The Graduate Committee is also responsible for deciding the format of the thesis. The graduate committee is responsible for final acceptance of the master's thesis or PhD Dissertation.

2.5. Departmental Graduate Faculty

The chair of the Departmental Graduate Faculty serves as the Departmental Graduate Advisor, and it is an ad-hoc member of the School of Veterinary Medicine Graduate Academic Studies Council. Duties of the Departmental Graduate Faculty include reviewing graduate programs, serve as a resource for faculty developing new graduate courses, and reviewing graduate applications.

2.5.1 Graduate Admissions and Advisory Committee

Duties of the Graduate Admissions and Advisory Committee include: maintain standards for graduate student admissions in VCS Department; evaluates and approves/disproves graduate applications to the VCS Department; considers and approves/disproves petitions for graduate student program changes. (e. g. 7 year time limit); vote on Outstanding thesis/dissertation awards.

Committee members are members of VCS graduate faculty and members of a section with a graduate program. Members are elected by the graduate faculty for a 3-year term and are eligible for a second term. Previous members may serve again in the committee after a 3-year hiatus. A chairperson will be elected each year by vote of the committee membership. Committee members may be elected for consecutive appointments as the chair. Committee members with at least one year experience on the committee are eligible.

Efforts should be made to have a representative from each section that has a graduate program unless burdensome to sections with few faculty. The Departmental Graduate Advisor shall serve as an ad hoc member of the Graduate Admissions and Advisory Committee.

2.6. Departmental Graduate Advisor

The chair of the Departmental Graduate Faculty also acts as the Departmental Graduate Advisor. The chair maintains liaison between the graduate student and the Departmental Graduate Faculty, using the Departmental Graduate Admissions/Advisory Committee to assist in reviewing individual graduate programs, graduate student progress or providing advice to the Graduate Committee and major professors.

2.7. Structure of Graduate Committees

2.7.1 Masters Committee

The major professor, who must be from the major department, is designated as chair or co-chair of this committee. If either an adjunct or a non-tenure-track faculty member is the major professor, a full-time tenured or tenure-track graduate faculty member must co-chair the committee. Other committee members may be from the major department

or from other pertinent departments. If there is an external minor, one committee member must represent the minor department. Committees must include at least one full member of the graduate faculty, and at least one-half of the committee's graduate faculty members must be full-time tenured or tenure-track faculty members at LSU.

The preparation of a thesis is an important element in the program leading to the master's degree. The master's thesis should demonstrate capacity for research, originality of thought, and facility in organizing materials. Final acceptance of the master's thesis rests with a Student's Graduate Committee.

2.7.2 PhD Committee

This advisory committee consists of at least three members of the graduate faculty. The full advisory committee must comprise at least three members of the graduate faculty, including the major professor, who acts as chair or co-chair and who must be from the major department. If either an adjunct or a non-tenure track faculty member is the major professor, a full-time tenured or tenure-track graduate faculty member must co-chair the committee. At least one-half of the graduate faculty on doctoral committees must be full-time tenured or tenure-track faculty at LSU. A minimum of two of those faculty members must be from the student's major department and at least one of whom must be a full member of the LSU graduate faculty. The dean of The Graduate School appoints a member or members of the graduate faculty to serve on doctoral general and final examination committees. These individuals represent the dean and the entire graduate faculty. They are full voting members of the committee with all the rights and responsibilities of the other committee members. In the case of final examinations, it is the responsibility of the committee chair to ensure that the dean's representatives receive copies of dissertations as soon as possible, but no later than two weeks before the date of the examination.

2.8. Academic Program

Study plans for students pursuing the MS or PhD degree are flexible and designed to provide the student with a broad background. Specialization at the MS or PhD level can be achieved through a study plan that is developed with the advice of a major professor and the Student's Graduate Committee. Study plans must include advanced courses in Veterinary Clinical Sciences. Study plans can also include advanced courses in statistics, experimental design, microscopic and macroscopic anatomy, pathology and physiology and any other area deemed relevant to the graduate student by their graduate committee. Students pursuing the MS or PhD degree are expected to attend and participate in departmental seminars whenever these are offered.

2.8.1. Program of study

A proposed program of study signed by the advisor and the graduate student should be submitted to the Departmental Graduate Advisor by the end of the first year of enrollment to confirm compliance with the graduate school requirements. The graduate school does not require formal notification of the program of study. The program of study proposal should include the student's program objectives, course schedule, teaching responsibilities, if any, and their clinical responsibilities, if any.

2.8.2. Transfer of credits

See General Catalog

2.9. Research program

Early submission of the research proposal by the graduate student to the Student's Graduate Committee and Graduate Advisor is required to ensure that questions regarding the suitability of the program, procedures to be used or time required for completion are not raised late in the student's program. The research proposal should be approved by the Student's Graduate Committee before any investment of time or work has begun. All graduate students are encouraged to submit grant proposals to the department competitive organized research program (VCS CORP), generally available once every year.

2.9.1. Animal use

All projects, whether clinical or experimental, whether using live or dead vertebrates must be submitted to the Louisiana State University Institutional Animal Care and Use Committee (IACUC) by a faculty member for approval before they begin. This process can take 1 to 2 months. The appropriate form should be submitted (available on the LSU SVM Research and Academic Studies website). The graduate student CAN NOT be listed as the principal investigator on the IACUC form. This should be the major professor, the graduate student being listed as the co-investigator or co-principal investigator.

Graduate students must attain certification by the IACUC. Information for training is available by contacting the Institutional Animal Care and Use Committee at iacuc@lsu.edu. Research performed on clinical animals must be approved by the Clinical Protocol Committee and the IACUC.

2.9.2. Research funding

Extramural funding for conducting research is encouraged and is the responsibility of the graduate student with the advice of the Student's Graduate Committee. Ultimately, it is the responsibility of the major professor, with the cooperation of the graduate student, to obtain funding for the research. Many extramural sources are available depending on the area of interest and species involved.

Limited intramural funding may be available through the department or individual sections. These are unreliable sources, and when available, are usually on a non-renewable, yearly basis. All graduate students are encouraged to submit grant proposals to the department competitive organized research program (VCS CORP), generally available once every year.

If funding is not secured when entering the program, the graduate student and major professor are advised to seek funds from extramural sources within the first year.

2.9.2.1. Internal funding grant submission protocol

This protocol is covered in VMED 7004 Introduction to Research which should be

taken the first semester of the student's curriculum.

2.9.2.2.External funding grant submission protocol

This protocol is covered in VMED 7004 Introduction to Research which should be taken the first semester of the student's curriculum.

2.10. Department Resources

Department facilities, faculty training and collaboration with other departments in the School of Veterinary Medicine and other LSU departments allow study plans with topics in many facets of clinical sciences. There is a working relationship with the Pennington Biomedical Research Center and the Louisiana Agricultural Experiment Station.

2.10.1. Office support

Computer support is available for graduate student use. Photocopying, typing and other manual tasks can be performed by Departmental office staff and work study students, depending on availability of staff and time constraints.

2.10.2. Assistantships

A limited number of assistantships may be available for graduate students who are not also enrolled in an advanced clinical training program. These will be awarded on a competitive basis. Usually, graduate students holding the DVM or equivalent degree will be engaged in an advanced clinical training program and will be funded through these programs. State supported stipends are awarded only to post-DVM students not in an advanced clinical training program. Other stipends are available from the Alumni Foundation, the Board of Regents and from grants and contracts.

3. THE GRADUATE FACULTY

3.1. Graduate Faculty Listing

Frank M. Andrews (M) • Equine gastroenterology, intestinal physiology
Karanvir Aulakh (6A) • Companion animal surgery
Heidi Banse (6A) • Equine internal medicine (Physiology and Endocrinology)
Renee T. Carter (3P) • Ophthalmology
Ann Chapman (3P) • Equine infectious diseases; equine asthma
Jeannette Cremer (6A) • Anesthesiology
Rebecca Csomos (6A) • Small Animal Surgery
Chiara de Caro Carella Hampton (6A) • Veterinary anesthesiology and analgesia
Shannon Deghanpir (3P) • Clinical Pathology
Frederic P. Gaschen (M) • Companion animal gastroenterology, endoscopy
Lorrie Gaschen (M) • Diagnostic imaging
Alberto Gines (6A) • Small animal surgery
L. Abigail Granger (M) • Diagnostic imaging
Amy M. Grooters (M) • Small animal internal medicine, Pythium
Andrea Johnston (6A) • Hepatobiliary disease, Molecular cell death signaling pathways
Britta Leise (6A) • Equine laminitis, inflammation and epithelial cell function
Andrew Lewin (6A) • Ophthalmology

Mandi J. Lopez (M) • Comparative orthopedics
Charles McCauley (3P) • Equine surgery
Colin Mitchell (3P) • Equine surgery
Mark Mitchell (M) • Avian, zoo, and exotic animal medicine
Javier Nevarez (M) • Avian, zoo, and exotic animal medicine
Dale L. Paccamonti (M) • Equine reproduction, Assisted reproduction
Carlos R. Pinto (M) • Reproductive endocrinology; Comparative assisted reproduction
Cherie M. Pucheu-Haston (M) • Dermatology and immunology
Patricia Queiroz-Williams (3P) • Veterinary anesthesiology and analgesia
Natalie Rademacher (M) • Diagnostic imaging
Laura M. Riggs Hall (M) • Equine laminitis and inflammation
Ryan Smith (6A) • Emergency and critical care
Clare Scully (3P) • Analgesia; Assisted reproductive techniques in small ruminants
Jenny Sones (6A) • Pregnancy physiology
Joseph Taboada (M) • Small animal internal medicine, gastroenterology
Thomas N. Tully Jr (M) • Avian, zoo, and exotic animal medicine
Matthew G. Welborn (3F) • Food animal medicine and surgery
Sita Withers (6A) • Comparative cancer immunology

4. MASTER OF SCIENCE DEGREE PROGRAM

Biomedical and Veterinary Medical Sciences- Veterinary Clinical Sciences, M.S.

(SVMCS)

The School of Veterinary Medicine offers the M.S. in veterinary medical sciences with emphasis in clinical sciences. The graduate program of study and research are directed and evaluated by the student's graduate committee. This committee is composed of at least three members of the graduate faculty.

REQUIREMENTS: Graduate students must be familiar with the LSU Graduate School course requirements than can be found in the [Graduate School section of the online LSU General Catalog](#).

Master's graduate students must complete a minimum of 30 hours of graduate work, 24 hours of which must be in coursework and 6 hours in thesis research (VMED 8000). At least one-half (12 hours) of the minimum required credit in the student's coursework (24 hours) must be in 7000-level courses. Research and dissertation credits (VMED 8000) do not count toward the 7000-level requirement.

Course requirements:

- at least 12 hours of graduate course work must be at the 7000-level or greater (credits of VMED 8000 do not count toward this total).
- At least 6 hours of research/thesis credit (VMED 8000) must be completed and counted toward degree

- 2 credit hours of VMED 7004 Introduction to Research
- Statistics Course 7000 level (minimum of 3 credits) from the following EXST 7003, EXST 7004, EXST 7005, PBS 7002 PBS 7312
- at least two credit hours of VCS 7001 (max. of 4) (Seminar)
- at least two credit hours of VCS 7210 (max. of 4) (Journal Review)
- a maximum of 6 credit hours VCS 7003 (Special Topics)
- at least three credit hours from the following VCS 7201-VCS 7215, CBS 7104, CBS 7109, CBS 7628, PBS 7417, ANSC 7051, ANSC 7052 or any other 7000 graduate course deemed relevant to the graduate student's program

4000 level courses that support general knowledge needed for research and to prepare for the above 7000 level courses are allowed if recommended by the student's Graduate Advisory Committee (for example Biology 4123 Immunology, Biology 4132 Eukaryotic Molecular Genetics, OCS 4038 Scientific Writing and Collaboration, Biologic Engineering 4335 Tissue Engineering)

The preparation of a thesis is an important element in the program leading to the master's degree. The master's thesis should demonstrate capacity for research, originality of thought, and facility in organizing materials. Final acceptance of the master's thesis rests with a student's graduate committee.

The thesis must be successfully defended in a final defense and examination. A request for the final examination must be submitted to the Graduate School by the student's department chair at least three weeks prior to the proposed examination date and by the current semester deadline, if the student is a candidate for a degree (see the [academic calendar](#) for all pertinent dates). The examining committee, must have copies of the thesis at least two weeks prior to the final examination. Typically, the final examination is an oral examination following the thesis defense. The thesis defense takes the form of a seminar, open to attendance by any interested parties. Following the seminar, the graduate student and the examination committee will convene and discuss the thesis, asking questions of the graduate student.

5. PHD DEGREE PROGRAM

Biomedical and Veterinary Medical Sciences- Veterinary Clinical Sciences, Ph.D. (PVMCS)

The School of Veterinary Medicine offers the Ph.D. in Biomedical and Veterinary Medical Sciences in the Department of Veterinary Clinical Sciences with emphasis in clinical sciences. The graduate program of study and research will be directed and evaluated by the student's

graduate committee. This committee will be composed of at least 3 members of the graduate faculty. Doctoral graduate students must complete a minimum of 60 credit hours, a comprehensive examination, final examination, and a dissertation.

REQUIREMENTS: Graduate students must be familiar with the LSU Graduate School course requirements than can be found in [the Graduate School section of the online LSU General Catalog](#).

PhD graduate students must complete a minimum of 60 hours of graduate work. A minimum of 48 hours must be in course work, of which at least 24 hours must be at 7000 level. The minimum of 12 hours of research and dissertation credits (VMED 8900, VMED 9000) do not count toward the 7000-level requirement.

The coursework, in conjunction with research training, will provide the student with the skills needed for continuing research independent of the major professor. The VCS coursework requirements are as follows:

- at least 24 hours of 7000 level or higher courses (VMED 8900, VMED 9000 do not count toward this total).
- at least two statistic courses 7000 level (minimum of 6 credits) from the following EXST 7003, EXST 7004, EXST 7005, PBS 7002 PBS 7312
- at least six credit hours from the following VCS 7201-VCS 7215, CBS 7104, PBS 7417, CBS 7109, CBS 7628, ANSC 7051, ANSC 7052 or any other 7000 graduate course deemed relevant to the graduate student's program
- at least three credits of VCS 7001 (max. of 4) (Seminar)
- at least three credits of VCS 7210 (max. of 4) (Journal Review)
- a maximum of 8 hours VCS 7003 (Special Topics)
- VMED 7004 (2 credits) (Intro to Research)
- a minimum of 12 hours of research (VMED 8900, VMED 9000)

4000 level courses that support general knowledge needed for research and to prepare for the above 7000 level courses are allowed if recommended by the student's Graduate Advisory Committee (for example Biology 4123 Immunology, Biology 4132 Eukaryotic Molecular Genetics, OCS 4038 Scientific Writing and Collaboration, Biologic Engineering 4335 Tissue Engineering)

Candidates for the PhD degree are required to pass a comprehensive examination. This examination occurs within 3 years of onset of program and after completion of the majority of the student's coursework. This examination may be oral, written or both, depending on the preference of the student's graduate committee. Students that successfully complete part of the comprehensive examination but not all of the examination may be allowed a single retake at

the discretion of the Graduate Advisory Committee.

The preparation of a dissertation is an important element in the program leading to the doctoral degree. The dissertation should demonstrate capacity for research, originality of thought, and facility in organizing materials. Final acceptance of the dissertation rests with a student's graduate committee.

The dissertation must be successfully defended in a final defense and examination. A request for the final examination must be submitted to the Graduate School by the student's department chair at least three weeks prior to the proposed examination date and by the current semester deadline, if the student is a candidate for a degree (see the academic calendar) for all pertinent dates). The student should visit the graduate school the semester before planned graduation for deadlines and procedures concerning requests for final examination. The examining committee, must have copies of the dissertation at least two weeks prior to the final examination.

Typically, the final examination is an oral examination following the dissertation defense. The defense takes the form of a seminar, open to attendance by any interested parties. Following the seminar, the graduate student and the examination committee will convene and discuss the dissertation, asking questions of the graduate student.

For students enrolled in a PhD program, a minimum of 9 credits hours per semester and 6 credit hours in the summer are required to constitute full-time study.

For students also completing an Advanced Clinical Study Program, a MAXIMUM of 8 credit hours can be taken per semester and a MAXIMUM of 6 credit hours in the summer.

6. GRADUATE COURSE LISTING – This is not an exhaustive list of the all LSU graduate courses you can take. Please consult with your graduate program advisor or the Departmental Graduate Advisor if you have questions about these courses. Also, the information listed below on when some of these courses are offered is tentative. If you plan on registering for any of these courses, please verify their availability by contacting the course coordinator for that particular course.

VCS courses (a minimum of 10 credit hours required)

COURSE #	CREDITS	OFFERED	TITLE
VCS 7001	1 (max. of 4 cr.)	F,S	Seminar: Veterinary Clinical Sciences
VCS 7002	1-4 (max of 6 cr)	V	Research Techniques in Vet. Clinical Sciences
VCS 7003	1-4 (max. of 6 cr)	F,S,Su	Special Topics in Clinical Veterinary Medicine
VCS 7201	2	V	Veterinary Gastroenterology
VCS 7202	1	F,S	Veterinary Surgical Techniques
VCS 7204	2	V	Advanced Veterinary Orthopedics
VCS 7205	2	V	Advanced Veterinary Clinical Neurology
VCS 7206	2	V	Advanced Veterinary Urogenital Diseases
VCS 7208	2	V	Advanced Veterinary Cardiovascular Diseases
VCS 7209	2	V	Advanced Veterinary Respiratory Diseases
VCS 7211	2	V	Advanced Veterinary Cardiorespiratory
VCS 7213	3	V	Advanced Veterinary Diagnostic Imaging Interpretation: Small Animal

VCS 7214	3	V	Advanced Veterinary Diagnostic Imaging Interpretation: Large Animal
VCS 7215	2	V	Advanced Veterinary Diagnostic Imaging: Interventional Techniques Laboratory
VCS 7210	1 (max 4)	F,S,Su	Veterinary Scientific Journal Review
VCS 7003	2	Su	Veterinary Scientific Writing
VCS 7003	2	F	Advanced Principles of Surgery

Other required courses (8 credits)

COURSE #	CREDITS	OFFERED	TITLE
VMED 7004	2	F	Special topics: Introduction to research
VMED 8000	V	F,S,Su	Thesis research
Other required courses			(PhD)
VMED 8900			Predissertation Research
VMED 9000			Dissertation Research

and one of the following

COURSE #	CREDITS	OFFERED	TITLE
PBS 7301/7302	4	F	Principles and Methods in Epidemiology AND Disease Control
PBS 7003	3	V (F)	Use of SAS in Veterinary Medical Research
PBS 7312	4	S	Epidemiologic Study Design
EXST 7003	4	F,S	Statistical inference
EXST 7004	4	F,S	Experimental Statistics
EXST 7005	4	F,S	Statistical Techniques
EXST 7031	3	S	Experimental Design
EXST xxxx	Other statistics or epidemiology course approved by the Graduate Committee		

Suggested elective courses

COURSE #	CREDITS	OFFERED	TITLE
CBS 7109	1-3	V	Advanced Macroscopic Anatomy
CBS 7614	3	V	Central Nervous System
CBS 7617	3	V	Autonomic Nervous System
CBS 7603	3	V	Clinical Toxicology
CBS 7108	3	V	Critical Analysis in Molecular Biology
PBS 7310	3	V	Zoonotic Infectious and Parasitic Disease
PBS 7417	3	V	Pathogenesis of Infectious and Parasitic Agents
PBS 7501	3	V	Advanced Cellular Pathology
PBS 7509	1-3	V	Advanced Surgical Pathology
PBS 7525	2	F	Advanced Veterinary Clinical Pathology

Department of Veterinary Clinical Sciences Course Offerings - Rotating Schedule

		Credits	2020	2021	2022	2023	2024
VCS 7208	Adv Cardiovascular	2	S			S	
VCS 7209	Adv Respiratory	2	F			F	
VCS 7206	Adv Vet Urogenital	2		S			S
VCS 7204	Adv Vet Orthoped	2		F	F		F
VCS 7201	Adv Vet Gastroenterology	2			S		
VCS 7205	Adv Vet Neurology	2			F		
VCS 7211	Adv Vet Cardiorespiratory	2		S			S
VCS 7202	Vet Surgical Techniques	1	S/F	S/F	S/F	S/F	S/F
VCS 7213	Advanced Veterinary Imaging Small Animal						
VCS 7214	Advanced Veterinary Imaging Large Animal						
VCS 7215	Advanced Veterinary Imaging Intervention						
VCS 7210	Veterinary Sci Journ Rev	1	S/F	S/F	S/F	S/F	S/F
VCS 7001	Seminar	1	S/F	S/F	S/F	S/F	S/F
VCS 7002	Research Techniques	1-3	S/F	S/F	S/F	S/F	S/F
VCS 7003	Special Topics	1-3	S/F	S/F	S/F	S/F	S/F
VMED 7004	Intro to Research	2	F	F	F	F	F
VMED 8000	Thesis Research						
VMED 8900	Pre dissertation Research						
VMED 9000	Dissertation Research						

7.0 Thesis and Dissertation

A research thesis is required for all master's degree candidates and a dissertation is required for all doctoral degree candidates. The master's thesis should demonstrate capacity for research, originality of thought, and ability in organizing materials. It must be acceptable in subject matter and exhibit creditable literary workmanship.

Thesis and dissertation Preparation and Requirements

The master's thesis should demonstrate capacity for research, originality of thought, and ability in organizing materials. It must be acceptable in subject matter and exhibit creditable literary workmanship.

The format of the thesis is decided by the Student's Graduate committee. For information concerning thesis and dissertation preparation, consult the pamphlet "*Theses and*

Dissertation Guidelines”, available from the LSU Graduate School; Electronic Thesis and Dissertations; ETD Guidelines.

8.0 General Examination and Final Thesis/Dissertation Defense

Candidates for the PhD degree are required to pass a comprehensive examination. This examination occurs within 3 years of onset of program and after completion of the majority of the student’s course work. This examination may be oral, written or both, depending on the preference of the Student’s Graduate Committee. Graduate students must be registered for a minimum of one to three hours of credit during any semester in which they are taking the examination.

Candidates for the MS/PhD degree are required to pass a final examination. A request for the final examination must be submitted to the Graduate School by the student’s department chair at least three weeks prior to the proposed examination date and by the current semester deadline, if the student is a candidate for a degree (see the academic calendar for all pertinent dates). The examining committee, including the dean’s representative (PhD), must have copies of the thesis or dissertation at least two weeks prior to the final examination. Typically, the final examination is an oral examination following the thesis or dissertation defense. The thesis or dissertation defense takes the form of a seminar, open to attendance by any interested parties. Following the seminar, the graduate student and the examination committee will convene and discuss the thesis, asking questions of the graduate student. Changes to be made to the thesis can be requested by the examination committee at this point.

At least 3 weeks prior to the time of this examination, the student should submit to the Graduate School a request for appointment of the examining committee. Often, a candidate for the MS/PhD degree will take the final examination during the semester in which he or she plans to graduate. Examinations must be scheduled on days that the University is open for business.

The final examination committee is usually composed of those faculty members who serve as the Student’s Graduate Committee. At least one member of the examination committee must be a full member of the Graduate Faculty. The major professor serves as the chair of the examining committee. The committee is nominated by the chair of the student’s major department and appointed by the Dean of the Graduate School.

In order for the student to pass this examination, there may be no more than one dissenting vote. (Dissenting votes, along with assenting votes, must be recorded on the examination cards and the thesis approval sheets submitted to the Graduate School).

9.0 Publications

Each student will be required to submit at least one manuscript based on their research to a refereed journal.

10.0 Academic Standards

Grades requirement

Graduate students are considered in good standing if they earn a 3.00 cumulative average on all graduate course work taken within the LSU system and if they earn a grade of S in research.

A student who has a cumulative average below 3.0 in either graduate course work or total course work will be placed on probation. A student with a cumulative average as low as 2.75 may be dropped from the graduate school. A student receiving a U for research will also be placed on probation. A student receiving a second U may be dropped from the graduate school. The student must attain a cumulative average of 3.00 the following semester to continue in the program.

Duration of course of study

Full time MS degree students should complete the degree in two to three calendar years. Ideally, the graduate student doing a concurrent residency program should complete the MS degree prior to or during the last semester of the residency. This may be a requirement in some residencies. All students must complete the MS degree within five calendar years.

The program for the doctoral degree must be completed within seven years from the time a student is classified as a doctoral student. This time limit may not be exceeded except by special permission of the dean of the Graduate School. No less than one academic year may elapse between the passing of the general examination and the completion of all requirements for the doctoral degree.