

IOWA STATE UNIVERSITY

Department of Veterinary Clinical Sciences

Graduate Student Manual

January 2023



The Veterinary Clinical Sciences graduate program focuses on two major areas: residency training in preparation for board certification, and research training at the Master's level. The department offers the Master of Science degree with a major in Veterinary Medicine, Veterinary Surgery, or Theriogenology.

Program Course Offerings

MS in Veterinary Clinical Sciences (thesis and non-thesis programs available)

**** 30 credits required for either program format.**

**** Thesis programs should contain a minimum of 16 research credits applied to the POS**

Course content will vary as POS programs are unique to each student. Core courses in immunology, disease pathogenesis, and/or statistics are relevant didactic course considerations.

A list of courses relevant to the VCS major:

General		
VCS 590	Special Topics	1-3 credits
VCS 599	Creative Component (non-thesis program)	variable credits
VCS 604	Seminar	1 credit/semester (required)
VCS 676	Advanced Medicine	2 credits
VCS 699	Research	variable credits
Micro 551	Microbial diversity and phylogeny	1 credit
Micro 556	Microbial ecology and environmental monitoring	1 credit
Micro 554	Virology	1 credit
VMPM 525	Intestinal microbiology	3 credits
BMS 575	Cell Biology	3 credits
Stat 571	Introduction to Experimental Design	3 credits
Stat 546	Nonparametric Methods in Statistics	3 credits
Stat 575	Introduction to Multivariate Data Analysis	3 credits

Immunology		
VMPM 520	Principles of Immunology	3 credits
VMPM 575	Immunology	3 credits

Epidemiology		
VDPAM 528	Principles of Epidemiology and Population Health Medicine	3 credits
VDPAM 527	Applied Statistical Methods in Population Studies	3 credits
VDPAM 529	Epidemiological Methods in Population Research	3 credits

Graduate Credits Required

Master of Science with Thesis

At least 30 credits of acceptable graduate work must be completed. At least 22 graduate credits must be earned at ISU. Any transfer of credits from another institution must be recommended in the Program of Study by the POS Committee. Graduate credit is approved for transfer only if a grade of "B" or better has been earned. Master of Science programs in VCS with Thesis are strongly recommended.

Master of Science without Thesis

A Master of Science without Thesis is offered by VCS, with approval of the POS committee and the VCS DOGE. This requires satisfactory completion of 30 credit hours of acceptable work including a creative component of at least 5 credits. Examples of appropriate creative components include extensive literature reviews, clinical and laboratory research projects, and instructional modules for teaching or training purposes.

Admission Requirements

Requirements for full admission in VCS graduate (MS) programs:

- Prospective students must complete the online application form accessible [here](#).
- The transcript record must show a strong background in the biological sciences; preferably but not limited to biology, cell biology, biochemistry, genetics, immunology, microbiology, pathology, and physiology.
- Three letters of recommendation are required and should be provided by previous collegiate instructors or supervisors familiar with the applicant.
- A statement of proposed graduate work describing research interests and future plans must be written by the student as part of the application.
- The Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is not English. The student must meet the requirements of both ISU's Graduate College and VCS. A minimum TOEFL score 79 (Internet) or 550 (paper) is required for consideration by the Department. The IELTS (International English Language Testing System) test can be substituted for the TOEFL, and the ISU Graduate College requires a minimum score of 6.5.

TOEFL Paper (PBT)	550
TOEFL Internet (iBT)	79
IELTS	6.5
Duolingo	105 (approved through Spring 2025)

- Applicants where English is not their native language are required to participate in a video conference to discuss selection of VCS faculty mentors.
- PhD programs in VCS are currently unavailable; however, VCS faculty may serve as co-major professors in other CVM departments that support PhD programs.

All applications for admission should be directed to:

US and international applications:

<https://apps.admissions.iastate.edu/apply/online/>

Requirements for Non-English Speaking Students

Graduate students whose native language is not English and who do not have a bachelor's degree from ISU or a US institution, or do not meet the TOEFL or IELTS exemption score range, must take the English Placement Test prior to beginning of their first semester. This test is required by the Graduate College and is administered by the Department of English. It must be taken in addition to the TOEFL (Test of English as a Foreign Language), which is taken as part of the admissions process. A student who does not pass this examination is assigned to one or more courses in the English 99 and 101 series. This course work must be completed during the first year of study, and registration holds are placed if the student does not register for these courses during the first year of study. (There is a developmental course fee for the English 99 course.)

A graduate student whose native language is not English may be automatically exempted if one of the following is met:

1. Student has received a bachelor's, master's, or doctoral degree from a U.S. college or university.
2. Student has received a bachelor's, master's, or doctoral degree from an English-speaking university outside of the U.S. As of 2016, countries outside of the U.S. that ISU considers "English-speaking" are Canada, Great Britain, New Zealand, or Australia.
3. Student has a TOEFL score of 600 or above (paper-based TOEFL) or 100 or above (internet-based TOEFL)
4. Student has a score of 7.5 or above on the IELTS
5. Student has a score of 72 or above on the PTE (Pearson Test of English)

Concurrent Degree Students

Students in the professional school (College of Veterinary Medicine [CVM] Doctor of Veterinary Medicine [DVM]) program may also enroll in the MS program in VCS. Only students who have demonstrated exceptional academic achievement and are highly motivated will be considered. Students requesting admission as a concurrent student must complete the concurrent degree application in addition to their acceptance in the CVM DVM program. Students must have completed at least 90 semester hours of pre-veterinary or professional course work. Students will be subject to the normal rules and procedures in effect for both the College of Veterinary Medicine and ISU's Graduate College. Students in the concurrent DVM-Graduate Degree Program will need to have their Program of Study approved by the Associate Deans of both colleges and the DOGE or Chair of VCS. Students must maintain a minimum of a 3.0 grade point average in both programs to remain enrolled. Students will be expected to perform research in summer terms between the DVM coursework.

Students enrolled in the Graduate College must satisfy all academic requirements established by the Graduate College. Some courses may satisfy academic requirements for both the DVM and Graduate programs. CVM DVM courses may only be used to fulfill Graduate College requirements if those courses are listed in the ISU Course Catalog (<http://catalog.iastate.edu/azcourses/>) as being available for graduate credit. Graduate courses may only be used as a substitute for a designated CVM DVM professional course if they are reviewed by the CVM Curriculum Committee to confirm that the depth and rigor of the Graduate course satisfies requirements of the professional curriculum.

If a student does not hold a B.S. or B.A. degrees, a graduate degree would not be granted until all requirements for the DVM degree are completed. By not restricting credits earned, a student may pursue graduate studies during summer and holiday sessions and may elect to postpone the fourth year of professional curriculum for one year to facilitate pursuit of graduate courses and research. This latter option may be declared during the second or third year of the professional curriculum, and no later than the first day of the spring semester of the third year of the professional curriculum. Approval by the student's POS committee and the Dean of the College of Veterinary Medicine is also required.

Guidance for Students

Registration

MS students must register themselves for courses each semester. Registration is completed online through Access Plus

<http://catalog.iastate.edu/registration/#registrationprocesstext>

The registration window for the following semester opens the week after midterm of the current semester, and the registration deadline is posted in the University Calendar (usually before the end of the previous term). Students should register for graduate courses during the first month that registration is open. Questions regarding the registration process can be answered at the previous URL, the departmental office, or your major advisor.

International students with an F-1 or J-1 nonimmigrant visa are required to maintain full time student status.

During Fall and Spring semesters:

- All students are required to be enrolled for a minimum of 9 credit hours.
- If it is in the student's best interest to be enrolled for less than 9 credits, a 'short course load' form is to be completed. This form is available in the Office of International Students and Scholars (OISS). <https://isso.dso.iastate.edu>

During Summer semester:

- If the first semester that an international student is enrolled at ISU is Summer, the student is required to be enrolled for 4.5 credits. If it is in the student's best interest to take less than 4.5 credits, a 'short course load' form is to be completed. This form is available in the OISS.
- If the student has been enrolled during the previous semester, the student is not required to be enrolled during the summer semester.

Interdepartmental Programs

Interdepartmental programs offer a diverse coursework curriculum and research opportunities with a faculty mentor they choose from among many participating departments. The diversity of faculty in these programs ensures a broad, well-balanced education from the best instructors while offering flexibility in choice of research specialization.

The Course requirements for the Interdepartmental Majors can be found at their respective web sites:

[Genetics](#)

[Immunobiology](#)

[Microbiology](#)

[Molecular, Cellular and Developmental Biology \(MCDB\)](#)

Program of Study Committee

The POS Committee guides the graduate program of the graduate student. Students are encouraged to establish a POS Committee as soon as a major professor is selected. POS Committees should be in place by the end of the first semester of graduate study. Generally, 4-5 committee members are chosen.

The following requirements have been established by the Graduate College or the Department of VCS for program of study committee makeup:

M.S.

- The POS Committee must have 3 members and generally contains 4-5 members of the Graduate Faculty.
- One committee member must be from outside the Department. Collaborators do not qualify as outside members.

Program of Study

The student and the POS Committee develop a Program of Study which is a listing of courses required for the individual's degree. Each graduate student should submit a final Program of Study form (POSC) within the first semester of entering the graduate program. The major professor and POS committee will guide initial course selection during the first semester until the POS is finalized. **For master's students, the POSC must be approved by the Graduate College by the last day of the semester prior to the term of the final oral examination.** POSC forms are available online through AccessPlus under the Student tab, Graduate Student Status. Each student's POS should be designed to correct deficiencies in academic preparation, allow study of subject matter that most interests the student, and avoid repetition in areas where the student is well-prepared. The POS Committee assures departmental requirements are met before signing the POS form.

Graduate faculty members are encouraged to establish the POS course work for the student at the first meeting of the POS Committee. It is recommended that the student and major professor discuss appropriate course work prior to the first formal committee meeting. This should be done using the [POSC worksheet](#) which can then be discussed by the full committee at the first meeting. The electronic POSC form should not be submitted until after the first committee meeting. Written research proposals formulated early in the student's graduate work are beneficial for timely completion of the degree. It is understood that the research proposal may change over time with guidance and approval from the POS committee. The research proposal should serve as the template for research graduate credits earned and generally consist of a single project.

The POSC is routed electronically for approval by committee members and the DOGE before being submitted to the Graduate College. All changes in an approved POSC must be made by revising the POSC form and obtaining the signatures of all committee members and the DOGE electronically.

Program of Study Committee and Program of Study Timetable

**** This assumes 3 semesters/year = Fall, Spring, Summer**

Before the end of 1st semester: Form POS Committee
Before the end of 2nd semester: Finalize Program of Study including research proposal
Before the end of the 2nd semester: Submit POSC form

VCS Graduate Student Annual Report

Continued enrollment in the Graduate College requires that students make satisfactory progress toward their degree. To measure this progress, every VCS graduate student must submit a Graduate Student Annual Report. The report is a confidential document that will be deposited in the file of the student.

The signed report will be submitted to the DOGE no later than September 15 of each year.

Master's Thesis

A Master's thesis is a scholarly composition that demonstrates the ability of the author to do independent and creative work. It explores in some depth a problem or issue related to the major field of study. Although considerable variations in format and style are acceptable, precise expression, logical construction and meticulous attention to detail are essential. A thesis is required in all areas in which a master's degree is awarded, except for the non-thesis degree.

Thesis requirements

The Graduate College Thesis checklist is available at https://www.grad-college.iastate.edu/graduation/masters_thesis.php

It is the responsibility of the student and major professor to ensure that the thesis or dissertation is ready for critical evaluation. Copies of the thesis or dissertation must be submitted to the members of the POS Committee at least two weeks before the final oral examination.

The Application for Graduation should contain the exact thesis or dissertation title and should be submitted by the end of the first week of the semester of graduation. During the term in which the diploma is submitted, a fee of \$145 for processing the thesis or dissertation is billed by the university accounting system.

Finishing up

Final Examination

1. Students should schedule the final examination well in advance, please refer to timeline on last page.
2. Copies of the thesis must be distributed to the POS Committee at least two weeks in advance of the final examination. Students are strongly advised to ask committee members if they wish to review draft copies of the thesis and provide comments prior to scheduling the final examination and distribution to the whole committee. The thesis should be of very high quality and the final examination should not be an exercise in thesis editing. Members of the POS Committee may request that the final examination be delayed until deficiencies are corrected.
3. Students should expect a broad range of questions in the final examination.
4. After completion of the final examination the major professor must immediately submit the Report of Final Oral Exam form to the Graduate College
5. After the final examination is passed the student must submit the Graduate Approval form in the term planned to graduate.

Seminar and Publication Requirements

All students are required to deliver a special seminar summarizing their graduate research during the final semester of their graduation. The seminar does not necessarily have to be held in conjunction with the final defense, but frequently is. Additionally, a student should have prepared at least one manuscript for publication (submission ready) prior to the final dissertation.

Application for Graduation Information

Students must complete and submit an Application for Graduation according to the instructions listed on the form. The form should be submitted by the date listed on the graduate college website. <https://www.grad-college.iastate.edu/student/forms/graduation-application/>

Students who determine they cannot complete the requirements or meet deadlines for the semester they have indicated, should notify the departmental office and the Graduate College as soon as possible. Failure to graduate as indicated requires a new application so that intent to graduate is formally re-established. A one-time, non-refundable thesis fee of \$145 is charged when the application of graduation is filed.

Academic Standards

Probation policy

If a graduate student does not maintain a cumulative 3.0 grade point average on all course work taken, exclusive of research credits, he or she is placed on academic probation by the Graduate Dean. Grades earned by graduate students in undergraduate courses are included in the calculation of the grade point average. Academic probation judgments are made based on grades in course work only; research grades are excluded.

While on academic probation, a student cannot be admitted to candidacy for a degree. The Graduate College places a hold on future registration to ensure that registration does not take place without a review by the Department. Before the student registers for the next term, it is necessary for the Department to review his or her record and recommend whether the Graduate College should continue to permit registration.

Before graduation is approved, the student must complete all courses listed on the Program of Study with a minimum of "C" and have a 3.0 average, unless an exception is recommended by the student's committee and approved by the Graduate Dean.

In order to remain eligible to receive financial aid from student aid programs, a student must meet both qualitative and quantitative academic standards. Qualitative standards refer to minimum expectations of academic performance in course work; quantitative standards refer to limits on the number of semesters in which enrollment is permitted in combination with a minimum number of credit hours to be earned per year. The Student Financial Aid Office can provide more details.

Dismissal Policy

Students may be dismissed from the VCS graduate program (removed from the degree program) and not permitted to register as a VCS graduate student. Dismissal may occur for the any of the following reasons:

1. Lack of a major professor.

Because graduate degrees in VCS are centered about a mentored research project, it is impossible to complete the degree without a research mentor (major professor). To maintain good standing and earn a degree in VCS, a student must have a VCS faculty member serving as major professor.

Rarely, a faculty member who has previously agreed to serve as a major professor becomes unable or unwilling to serve. A faculty member who wishes to terminate service as major professor for a VCS student may do so by notifying the student, the DOGE and the VCS Chair in writing. A student who has lost his/her major professor has up to three months (after the date the Chair was

notified) to identify another VCS faculty member willing to serve. It is the responsibility of the first faculty member to support the student during this time in order to provide continuity of support. The VCS DOGE or Chair will help the student search for a new major professor if the student makes this request.

2. Failure to progress satisfactorily in their degree program and/or maintain their academic standing.

A student's POS committee, or if the student has no POS committee, the student's major professor, temporary advisor or a member of the VCS Graduate Committee have the right to recommend dismissal of any student who is failing to progress satisfactorily in his/her degree program, or who has failed to maintain their academic standing, as defined by the Iowa State University Graduate College Handbook. In addition, recommendations for dismissal can be made based upon a lack of research progress or a lack of aptitude. Recommendations for dismissal are made by sending a memo to the VCS Chair and a copy to the DOGE.

3. Academic dishonesty

The proper conduct of science requires the highest standards of personal integrity. Because of this, the University and VCS consider dishonesty in the classroom or in the conduct of research to be a serious offense. Students accused of academic dishonesty will be dealt with according to the procedures outlined in the University Catalog and the Faculty Handbook.

Dismissal Procedure

Procedures for dismissal are as described in the Iowa State University Graduate College Handbook. It is the responsibility of the VCS DOGE to discuss the situation with the student, as well as their POS Committee, Major Professor, Temporary Advisor in an attempt to find a satisfactory resolution. This discussion constitutes the informal conference as described in the Graduate College Handbook. If a satisfactory resolution cannot be reached, either party may bring the issue to the attention of the Associate Dean of the Graduate College for a decision. The student may appeal the decision of the Associate Dean, as described in the Graduate College Handbook.

Additional Information

All the University regulations and requirements for graduation can be found in the Graduate College Handbook and the Graduate College Thesis Manual. They are available on the web through the ISU Graduate College Homepage (<http://www.grad-college.iastate.edu>).

ISU Graduate College Forms are available on the web at <https://www.grad-college.iastate.edu/student/forms/>

ISU Graduate Course Catalog: <https://catalog.iastate.edu/graduatecollege/>

ISU Schedule of Classes: <https://classes.iastate.edu/>

ISU Bookstore: <https://www.isubookstore.com/>

This document is the departmental handbook for Veterinary Clinical Sciences graduate programs. The Iowa State University [Graduate College Handbook](#) sets the standards for items reflected in this handbook.

List of Forms and Due Dates (January 2023)

Name of form	Due by
Annual report	September 15 each year to the Department
POSC	End of 1 st semester
Application for graduation	1 st week of the semester that graduation is planned. (Must be re-submitted if you do not graduate as scheduled).
Request for final oral exam	No later than 3 weeks before the scheduled exam. You must be registered for at least 1 credit the semester of the exam
Report of the final oral exam	Filed immediately after exam by the major professor with committee signatures
Graduate student approval form	After the final exam is passed in the term you plan to graduate
Concurrent enrollment for graduate / DVM degrees	With application for graduate study
Transfer of courses for concurrent graduate	On-going at the end of each term