

VDPAM Graduate Handbook

Major in Veterinary Preventive Medicine

Major in Population Sciences in Animal Health

**IOWA STATE
UNIVERSITY**

College of Veterinary Medicine

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HANDBOOK – VDPAM GRADUATE PROGRAMS

1	INTRODUCTION	4
1.1	FIRST WEEK STUDY CHECKLIST	4
2	GUIDANCE FOR PROSPECTIVE AND NEW STUDENTS	6
2.1	ADMISSION	6
2.2	APPLICATION MATERIALS	6
2.3	GRADUATE ENGLISH REQUIREMENTS FOR NON-NATIVE SPEAKERS	7
2.4	REGISTRATION	7
2.5	LATE REGISTRATION	8
2.6	ADD/DROP SLIPS	8
2.7	ADDITIONAL INFORMATION	8
3	OVERVIEW OF GRADUATE PROGRAMS AND REQUIREMENTS	9
3.1	MAJOR IN VETERINARY PREVENTIVE MEDICINE	9
3.2	MAJOR IN POPULATION SCIENCES IN ANIMAL HEALTH	9
3.3	CONCURRENT DEGREE PROGRAM	9
3.3.1	COURSES FOR CONCURRENT STUDENTS	10
3.3.2	SUPPORT DURING A CONCURRENT PROGRAM	10
3.4	CREDIT LOAD GUIDELINES – FOR ALL MAJORS	11
3.4.1	MAXIMUM CREDIT LOAD	11
3.4.2	MINIMUM CREDIT LOAD	11
3.5	TYPES OF COURSES AND CREDITS	12
3.5.1	GRADUATE COURSES	12
3.5.2	UNDERGRADUATE COURSES ON PROGRAM OF STUDY	12
3.5.3	AUDITED COURSES	12
3.5.4	RESEARCH CREDITS	12
3.5.5	CREATIVE COMPONENT CREDITS	12
3.5.6	DUAL-LISTED UNDERGRADUATE, PROFESSIONAL, AND GRADUATE COURSES	13
3.6	ACADEMIC STANDING	13
4	SPECIFIC PROGRAM REQUIREMENTS	14
4.1	MASTER OF SCIENCE DEGREE REQUIREMENTS	14
4.1.1	NONTHESIS MASTER OF SCIENCE DEGREE	14
4.1.2	THESIS MASTER OF SCIENCE DEGREE	15
4.1.3	MASTER OF SCIENCE DEGREE WITH CONCURRENT ENROLLMENT IN THE DVM PROGRAM	16
4.2	MINOR IN VETERINARY PREVENTIVE MEDICINE	17
4.3	PH.D. DEGREE REQUIREMENTS	17
5	PROCEDURES FOR MAJOR PROFESSOR AND PLAN OF STUDY & COMMITTEE (POSC)	19
5.1	GRADUATE FACULTY NOMINATION	19

5.2	MAJOR PROFESSOR	19
5.3	PROGRAM OF STUDY	19
5.3.1	PROGRAM OF STUDY COMMITTEE – VPM PROGRAM	20
5.3.2	PROGRAM OF STUDY COMMITTEE – POPSC PROGRAM	20
6	EXAMINATIONS.	21
6.1	QUALIFYING EXAMINATIONS	21
6.2	PRELIMINARY EXAMINATION	21
6.2.1	THE WRITTEN PRELIMINARY EXAMINATION.	21
6.2.2	THE ORAL PRELIMINARY EXAMINATION.	21
6.3	FINAL EXAMINATION	21
6.4	DOCTORAL FINAL EXAMINATION.	21
6.5	THESIS MS FINAL EXAMINATION.	22
6.6	NON-THESIS MS FINAL EXAMINATION	22
7	CREATIVE COMPONENT, MASTER THESIS, AND DOCTORAL DISSERTATION	22
7.1	DOCTORAL DISSERTATION	22
8	MASTER'S THESIS	23
8.1	CREATIVE COMPONENT IN A NON-THESIS MASTER'S:	24
8.2	WRITING AND EDITING RESPONSIBILITY	25
9	ADDITIONAL INFORMATION	25
9.1	TUITION AND FEES FOR STUDENTS WITH ASSISTANTSHIPS	25
9.2	ASSISTANTSHIP TIME LIMIT	26
9.3	REQUIRED RESEARCH RESPONSIBILITIES	26
9.4	BENEFITS	27
9.5	MISCELLANEOUS INFORMATION	27
9.6	LINKS TO STUDY SUPPORT SERVICES AND RESOURCES:	29

1 INTRODUCTION

This document is the departmental handbook for the [Veterinary Diagnostic and Production Animal Medicine \(VDPAM\)](#) graduate programs, Veterinary Preventive Medicine and Population Sciences in Animal Health. The Iowa State University [Graduate College Handbook](#) sets the standards for items reflected in this handbook.

In general, a major is offered by a group of qualified graduate faculty who are responsible for the specific plan of study (POS) including curricula, research and creative component requirements. These faculty are referred to as the plan of study and committee (POSC). Graduate major and graduate program are interchangeable terms.

"Veterinary Preventive Medicine" (VPM) and "Population Sciences in Animal Health" (POPSC) are graduate majors administered by VDPAM with participating graduate faculty. When affiliated with ISU, individuals from other research institutions, private industry, or federal agencies may also serve as graduate faculty.

1.1 FIRST WEEK STUDY CHECKLIST

- **Prior to first day of classes: make housing arrangements.**
 - The ISU and the city of Ames offer a variety of housing options for graduate students. Choices range from on-campus residence halls to off-campus apartments. For more information visit www.housing.iastate.edu, and <https://www.rentiowa.com/>
- **International students:**
 - **Check in with the [International Students & Scholars Office \(ISSO\)](#)** at 3248 Memorial Union. ISSO staff will advise students on legal requirements relating to VISA, employment at ISU, and the overall status as an international graduate student.
 - **Schedule the English Placement Test:** The English Placement Test for Non-Native Speakers of English (EPT) is required for all incoming students whose first language is not English and who do not meet the exemption criteria. The test consists of two parts: Writing and Oral Communication. Both tests are typically taken on the same day. Students who do not pass one or more sections of the test will be placed in ESL courses based on their results. To determine whether you need to take the EPT, and to register, please click on the "Registration" tab at <https://apling.engl.iastate.edu/english-placement-test>.
- **Check in with major professor:**
 - It is important that students and their major professors align the expectations and requirements for graduation, since day 1. Depending on the student's area of study there may be the need to take additional training sessions such as IACUC and EH&S. The ISU

Graduate College provides a check list to facilitate the check in with major professors:
<https://www.grad-college.iastate.edu/student/you-and-major-professor>.

▪ **Obtain student identification card (ISU card)**

- The ISU card will provide access to buildings and rooms as necessary, and are required to allow students to register for classes.
- To obtain the ISU card students need to visit 0530 Beardshear Hall at the ISU main campus.

▪ **Check in with the VDPAM Graduate Program coordinator**

- The Graduate program coordinator will ensure the students have completed all orientations, check-lists, update office phone and room numbers, registration to classes, payroll processes, and have access to buildings and equipment as needed:
Mrs. Megan Jedlicka
2412 Lloyd
Phone: 515-294-1761
E-mail: meganjed@iastate.edu

▪ **Letter of Intent/Payroll**

- For students on assistantships (i.e., research assistant, teaching assistant, postdoctoral associates), there is the need to sign the letter of intent (LOI), setting up the payroll.
- Sign up for payroll (on or before your first day of employment). Payroll forms are available at www.hrs.iastate.edu/records/signup_packet.pdf.
Contact information:
Human Resource Services (www.hrs.iastate.edu/hrs)
3810 Beardshear Hall
Phone: 515-294-4800

▪ **Graduate College's student orientation**

- Visit the Graduate College's website to enroll for new student orientation (www.grad-college.iastate.edu). They will cover important guidelines, and walk through the key processes and deadlines to meet graduation requirements.

▪ **Transportation to and within the ISU campus**

- **Consider getting a parking permit**
 - Students planning on parking in most places in the ISU campus should obtain a parking permit, or pay at designated parking meters. For more information visit www.parking.iastate.edu. Alternatively, students may park free at the ISU Center

in lots A4 or B6 (no overnight parking) and take CyRide shuttle bus to the CVM campus for free.

- **Public transportation**
 - ISU students and employees can ride at no cost the CyRide buses when showing the ISU card. CyRide is the Ames public transportation system (www.cyride.com).
- **Registering for classes**
 - After discussing with the major professor, register for classes through the ISU Accessplus system: <https://accessplus.iastate.edu/frontdoor/login.jsp>.

2 GUIDANCE FOR PROSPECTIVE AND NEW STUDENTS

2.1 ADMISSION

The program will consider all applications received through the Iowa State University Graduate Admissions Office.

Qualified applicants must hold either a baccalaureate degree (BA, BS) or a professional degree (DVM, MD, etc.) from an accredited institution in the United States. Applicants trained outside the U.S. should hold equivalent degrees from a recognized institution whose requirements for the baccalaureate or professional degrees are substantially equivalent to those at Iowa State University. Before applying to the VDPAM program, please review the program information below and the university requirements for [U.S. applicants](#) and [international applicants](#).

2.2 APPLICATION MATERIALS

The following materials should be submitted through the [online application system](#):

- Graduate application with a statement of purpose describing background, research interests, and career objectives.
- TOEFL/IELTS (nonnative English speakers only). The English proficiency minimum for these exams are:

TOEFL Paper (PBT)

550

TOEFL Internet (iBT) 79

IELTS 6.5

- Official Undergraduate or professional transcripts
- Three letters of recommendation

2.3 GRADUATE ENGLISH REQUIREMENTS FOR NON-NATIVE SPEAKERS

Graduate students whose native language is not English and who do not have a bachelor's or advanced degree from ISU or a U.S. institution, or do not meet the TOEFL or IELTS exemption score range, must take the English Placement Test at the beginning of their first semester of enrollment. This test is administered by the Department of English. It must be taken in addition to 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 coursework must be completed during the first year of study. Registration holds are placed on the student's account if the student does not register for these classes 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:

- Student has received a bachelor's, master's, or Ph.D. degree from a U.S. college or university
- Student has received a bachelor's, master's, or Ph.D. 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.
- Student has a TOEFL score of 600 or above (paper-based TOEFL) or 100 or above (internet-based TOEFL)
- Student has a score of 7.5 or above on the IELTS
- Student has a score of 72 or above on the PTE (Pearson Test of English)

2.4 REGISTRATION

All students who attend classes at ISU must register and pay assessed tuition and fees. The ISU Office of the Registrar's website at <http://www.registrar.iastate.edu> is the official source of information about registration for all students at ISU. Specific dates for registration are listed:

- on the Registrar's Web page,
- on the University Calendar,
- in the Iowa State Daily, and
- on many department bulletin boards.

Registration for summer session should be completed during the spring at the same time as registration for fall semester. All students are encouraged to register for courses on the Web through AccessPlus. Detailed instructions are provided at <https://catalog.iastate.edu/registration/>.

2.5 LATE REGISTRATION

During the fall and spring semesters, graduate students who do not complete their registration before the first day of classes are charged a late registration fee of \$30 the first week of classes, \$60 the second week of classes, and \$100 the third week of classes or later. Graduate Students on an assistantship appointment must register and pay tuition and fees for each term in which they hold an appointment for more than five class days. (See [Credit Load Limitations](#).)

2.6 ADD/DROP SLIPS

Students can use AccessPlus to process drops until the fifth day of classes. After the fifth day of classes, a Request for Schedule Change or Restriction Waiver (Add/Drop Slip) is needed for any changes to the class schedule. A class is **not** automatically dropped. Add/Drop Slips require the signatures of the major professor, instructor and Chair. A pass/no pass grading option is also offered. The Add/Drop Slip is used to designate this option. The pass/no pass option requires only the signature of the major professor. The forms are available in the departmental office.

2.7 ADDITIONAL INFORMATION

All of 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/>). Other references you may wish to obtain include: General Catalog, Graduate College Handbook, Schedule of Classes, Iowa State University phone/e-mail directory. These resources are available on the web at the ISU homepage (<http://www.iastate.edu>).

3 OVERVIEW OF GRADUATE PROGRAMS AND REQUIREMENTS

3.1 MAJOR IN VETERINARY PREVENTIVE MEDICINE

Veterinary Preventive Medicine (VPM) is a major that takes advantage of multiple disciplines unified by a common approach based on the application of epidemiological and statistical methods to problem-solving in animal populations.

Graduate study (thesis or non-thesis MS) in Veterinary Preventive Medicine will provide valuable skills and experience to persons interested in pursuing a career in the areas of public health, food safety, emerging infectious diseases, zoo or wildlife health management, livestock health and well-being, shelter medicine, and other topics related to animal population health. Through research and coursework, students will learn to apply a variety of disciplines, principles, and techniques to complex population health problems involving environmental, ecological, nutritional, genetic, infectious and/or noninfectious components. VPM degrees will be of particular value to individuals considering a future in the biological or pharmaceutical industries, public veterinary practice, military veterinary service, international service agencies, regulatory agencies, academia, or any position with a responsibility for health in animal populations.

The Veterinary Preventive Medicine Certificate is a distance program and all courses are taken online. With approval, it may be possible to transfer credits from a Graduate Certificate toward a M.S. degree in Veterinary Preventive Medicine.

A graduate certificate is different from continuing education as the certificate includes an academic transcript from Iowa State University. Students complete the same courses graduate students do with the same expectations for all assignments and exams.

3.2 MAJOR IN POPULATION SCIENCES IN ANIMAL HEALTH

Population Sciences in Animal Health (POPSC) is a cross-disciplinary, research-focused major leading to a PhD degree. The objective of the program is to train future leaders and create/disseminate knowledge in the area of Population Sciences in Animal Health. Program graduates will be prepared to respond to health issues in animal populations through research, education, clinical medicine, extension, and outreach. Program graduates will be prepared to critically assess needs and develop scientifically validated methods to prevent and respond to various aspects affecting animal populations.

3.3 CONCURRENT DEGREE PROGRAM

Students in the professional school (DVM) may also enroll for graduate studies in the M.S. or Ph.D. programs within the VDPAM graduate programs. Only students who have demonstrated exceptional academic achievement and are highly motivated will be considered. Students requesting admission as a concurrent student must fulfill all of the admission requirements described above. In addition, they 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 D.V.M.- Graduate Degree Program will need to have a Program of Study approved by the Deans of both colleges. As well as the normal forms that need to be completed current students need to request permission for concurrent enrollment: <https://www.grad-college.iastate.edu/documents/forms/ConcurrentEnrollmentGVM.pdf>.

3.3.1 COURSES FOR CONCURRENT STUDENTS

Students enrolled in the Graduate College will satisfy all academic requirements established by the Graduate College. In meeting these requirements, the only courses in the Veterinary College eligible for graduate credit will be courses identified as being available for graduate credit. Students enrolled in the concurrent program may elect to use courses from their graduate Program of Study, where applicable, to meet the requirements in effect for the professional curriculum, provided approval is obtained from the Curriculum Committee and the Administration of the College of Veterinary Medicine. At present, these include VMPM 586 Medical Bacteriology; VMPM 586L Medical Bacteriology Laboratory; VMPM 587 Animal Virology; VPTH 542 General Pathology; VPTH 576 Veterinary Parasitology; and VDPAM 426 Veterinary Toxicology. In order for a graduate course to be accepted as a substitute for a designated professional course in the Veterinary Curriculum, it shall be reviewed by the CVM Curriculum Committee for breadth necessary for the professional curriculum and by the College Graduate Studies Committee for depth and rigor appropriate for graduate education.

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 D.V.M. 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 in order to facilitate the 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.

At the end of each semester students should transfer credits from the DVM transcript to the graduate curriculum. The form for this is provided on the Graduate College website (Transfer of Courses for Concurrent VM/Graduate) or at: <https://www.grad-college.iastate.edu/documents/forms/Transfer of Courses for Concurrent VM Graduate.pdf>.

3.3.2 SUPPORT DURING A CONCURRENT PROGRAM

Students enrolled in a concurrent program may only be offered an assistantship during the summer term for research. Assistantships are usually funded by a grant obtained by the major professor for a particular project from an agency outside the university and likely will not last the "life" of a student's program. The usual graduate assistantship is a ¼ or ½ time appointment with a stipend for the summer. The university establishes a minimum and maximum monthly stipend for 1/2-time teaching, research, and administrative assistantships. These rates are available on the Graduate College Web site at

<https://www.grad-college.iastate.edu/finance/assistantships>. Stipends for other fractional appointments are scaled proportionally.

3.4 CREDIT LOAD GUIDELINES – FOR ALL MAJORS

3.4.1 MAXIMUM CREDIT LOAD

The maximum permitted credit loads per term are as follows:

Appointment Base	Spring or Fall Semester	Summer semester
No appointment	15 credits	10 credits
¼-time or less	15 credits	10 credits
Between ¼ and ½-time	12 credits	6 credits
Between ½ and ¾-time	9 credits	5 credits

3.4.2 MINIMUM CREDIT LOAD

During the academic year, graduate students not on assistantships must be registered for a minimum of nine credits to be considered full-time students and five credits for half-time status. During the summer, students not on assistantship must be registered a minimum of 5 credits for full-time status and 3 credits for half-time status.

Graduate students holding assistantship appointments are considered full-time students and must be registered for at least one credit each term for which they hold appointments. Assistants must also register through the summer to keep their appointments active.

International students with an F-1 or J-1 VISA are required to maintain full-time student status; and thus, enroll for a minimum of 9 credits during Fall and Spring, and at least one credit during Summer. If the first semester of international students is Summer, they are required to enroll for 4.5 credits.

If it is in the international student's best interest to take less credits than described above, a '[reduced course load](#)' (RCL) form is to be completed electronically. Students can log in to Cystart using their ISU NetID and password. Complete the Reduced Course Load e-form under the F-1 Student Services tab. If the student has been enrolled during the previous semester, the student is not required to be enrolled during the Summer semester.

3.5 TYPES OF COURSES AND CREDITS

3.5.1 GRADUATE COURSES

At Iowa State University, graduate courses are taught by members of the graduate faculty and are given numbers in the 500's or 600's. As a general rule, 500-level courses are entry-level or masters level offerings, while 600-level are highly specialized and typically intended for Ph.D. level study.

For the Veterinary Preventive Medicine program, VDPAM 528 is an example of a graduate-level course.

3.5.2 UNDERGRADUATE COURSES ON PROGRAM OF STUDY

With POS committee approval, graduate students will be permitted to use undergraduate classes from both within and outside of their majors on POS forms.

No 100- or 200-level classes may be used, but all 300- and 400-level classes at Iowa State (not undergraduate classes from other institutions) will be eligible.

For graduate students who entered degree programs prior to spring semester of 2018, up to 15 credits from 300- and 400-level courses may be used on a POSC form, with a maximum of 6 credits at the 300-level.

For graduate students who entered degree programs in spring semester of 2018 and thereafter, a limit of 9 credits at the undergraduate level will be in effect, with a limit of 3 credits at the 300 level.

If a 300-level class is used, it must be from outside of the student's major.

3.5.3 AUDITED COURSES

Auditing a course means taking it without receiving formal credit. (For more information, see Chapter 2 of the Graduate College Handbook.)

3.5.4 RESEARCH CREDITS

Credits for research for the purpose of completing a thesis or dissertation are assigned under the course number VDPAM 699 or VDPAM 699XW. A minimum of three semester credits is required for a thesis.

3.5.5 CREATIVE COMPONENT CREDITS

Credits for a special report, research project, or other independent work designated as a creative component under the non-thesis master's degree option are assigned under the course number VDPAM 599 or VDPAM 599XW. A minimum of two credit hours is required for a creative component. These credits are not calculated in the student's GPA.

3.5.6 DUAL-LISTED UNDERGRADUATE, PROFESSIONAL, AND GRADUATE COURSES

Dual-listed courses permit undergraduate, professional, and graduate students to be in the same class, but to receive credit under two different course numbers. The following requirements apply:

- The student must register for the course as a graduate level course at the time of registration. Once taken, courses cannot retroactively be identified as graduate level.
- Credit in the graduate course is not available to students who have previously received credit in the corresponding undergraduate course.
- Both graduates and undergraduates must receive the same amount of credit for the course, but additional work is required of all graduate students taking the course under the graduate-level course number. This extra work may take the form of additional reading, projects, examinations, or other assignments as determined by the instructor.
- The instructor must be a member of the graduate faculty or a graduate lecturer.
- Each dual-listed course is designated by the words "dual-listed with" in the ISU Catalog. The student's official transcript of credits, both graduate and undergraduate, does not identify dual-listed courses as such.
- The number of dual-listed course credits that may be used to meet the requirement for an advanced degree may be limited.
- Examples of dual-listed courses currently available are: VPth 342/542 Anatomic Pathology I; VPth 372/572 Anatomic Pathology II; VPth 376/576 Veterinary Parasitology; VDPAM 407/507 Evidence Based Clinical Decision Making; VDPAM 408/508 Poultry Diseases; VDPAM 414/514 Veterinary Practice Entrepreneurship; VDPAM 426/526 Veterinary Toxicology; VDPAM 428/528 Principles of Epidemiology and Population Health; VDPAM 481/581 Advanced Cow/Calf Production Medicine; and VDPAM 496/596 International Preceptorship.

3.6 ACADEMIC STANDING

Excluding research credits, students are required to maintain at least a 3.0 grade point average (on a 4.0 scale) for all courses taken. Courses may be repeated once upon approval of the POSC. In this case, the most recent grade will be used for the GPA. Courses with a grade C- or lower is obtained is not counted towards the total number of course credits when applying for graduation.

4 SPECIFIC PROGRAM REQUIREMENTS

4.1 GRADUATE CERTIFICATE DEGREE REQUIREMENTS

A graduate certificate in Veterinary Preventive Medicine requires a minimum of 15 credits distributed across a minimum of 10 credits of core courses and 5 credits of elective courses. As a distance program all courses are taken online. Distance course sections are identified with an WWW.

Certificate required core courses (7 credits):

Course	Description	Credits	Semester*
STAT 587**	Statistical Methods for Research Workers	4 cr	F, S & SS
VDPAM 528 WWW	Principles of Epidemiology and Population Health	3 cr	S

Remaining 3 core credits can be selected from:

Course	Description	Credits	Semester*
VDPAM 527 WWW	Applied Statistical Methods in Population Studies	3 cr	Alt. F, Odd
VDPAM 529 WWW	Epidemiological Methods in Population Research	3 cr	Alt. F, Even
VDPAM 560 WWW	Ecology of Infectious Disease	3 cr	Alt. S, Odd
VDPAM 562X	Applied Diagnostic Technologies	3 cr	Alt. F, Even
VDPAM 564	Animal Welfare Science and Research	3 cr	Alt. S, Even
VDPAM 567 WWW	Design and Implementation of Field Trials	3 cr	Alt. F, Odd

* F, S, and SS stands for Fall, Spring, and Summer, respectively.

**available online in Spring semesters

The remaining 5 or more elective credits can be any approved Iowa State University graduate level or dual listed course including, but not limited to, any remaining core courses. With the permission of the Director of Graduate Education, students may also take graduate level courses at another approved institution to fulfill the requirements of the certificate.

4.2 MASTER OF SCIENCE DEGREE REQUIREMENTS

4.2.1 CREATIVE COMPONENT MASTER OF SCIENCE DEGREE IN VPM

There is no thesis requirement for coursework-based MSc degrees. Instead, students complete 36 credits, from which at least 19 credits should be from course credits (as per tables below) and a special topic (VDPAM 590) fulfilling at least 3 credits. The special topics course is based on 1-1 interaction between students and a graduate faculty (typically the major professor), where students will obtain the background related to a Veterinary Preventive Medicine-related topic. The remaining credits are from VDPAM 599, where students develop a novel creative component based on the special topic chosen.

Core courses (select all)

Course	Description	Credits	Semester
VDPAM 528 ^{ON}	Principles of Epidemiology and Population Health	3 cr	S
STAT 587 ^{ON*}	Statistical Methods for Research Workers	4 cr	F, S, SS

Required advanced applied statistics courses (select *at least 1* of 2 for non-thesis MS)

Course	Semester	Credits	Semester
VDPAM 527 ^{ON}	Applied Statistical Methods in Population Studies	3 cr	Alt. F, Odd
VDPAM 529 ^{ON}	Epidemiological Methods in Population Research	3 cr	Alt. F, Even

Required applied VDPAM courses (select *at least 2* of 5)

Course	Description	Credits	Semester
VDPAM 560X ^{ON}	Ecology of Infectious Disease	3 cr	Alt. S, Odd
VDPAM 650 or VDPAM 562X	Swine Diagnostic Medicine or Applied Diagnostic Technologies, respectively	4 cr and 3 cr	F; Alt. F, Even, respectively
VDPAM 564 ^{ON}	Animal Welfare Science and Research	3 cr	Alt. S, Even
VDPAM 567X ^{ON}	Design and Implementation of Field Trials	3 cr	Alt. F, Even

^{ON} = available online. ^{ON*} = STAT 587 available online typically only in Spring and Summer. S = Spring, SS = Summer, F = Fall. Odd = offered in odd numbered years. Even = offered in even numbered years.

4.2.2 THESIS MASTER OF SCIENCE DEGREE IN VPM

Students must enroll and complete sufficient research credits and elective courses to total 30 credits. At least 13 credits should be from course credits (see tables below). Graduate courses should be selected with the objective of expanding the student's knowledge and expertise within their area of specialty in consultation with the major professor and with the approval of the POS (Program of Study) committee. Research may be conducted in a variety of areas involving population health. To record research credits, students should enroll in VDPAM 699, which is available during all semesters.

Core courses (select all)

Course	Description	Credits	Semester
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VDPAM 528 ^{ON}	Principles of Epidemiology and Population Health	3 cr	S
STAT 587 ^{ON*}	Statistical Methods for Research Workers	4 cr	F, S, SS

Required advanced applied statistics courses (select at least 1 of 2)

Course	Description	Credits	Semester
VDPAM 527 ^{ON}	Applied Statistical Methods in Population Studies	3 cr	Alt. F, Odd
VDPAM 529 ^{ON}	Epidemiological Methods in Population Research	3 cr	Alt. Fall, Even

Required applied VDPAM courses (select at least 1 of 5)

Course	Description	Credits	Semester
VDPAM 560X ^{ON}	Ecology of Infectious Disease	3 cr	Alt. S, Odd
VDPAM 562X	Applied Diagnostic Technologies	3 cr	Alt F, Even
VDPAM 564 ^{ON}	Animal Welfare Science and Research	3 cr	Alt. S, Even
VDPAM 567X	Design and Implementation of Field Trials	3 cr	Alt. F, Odd
VDPAM 650	Swine Diagnostic Medicine	4 cr	F

^{ON} = available online. ^{ON*} = STAT 587 available online typically only in Spring and Summer. S = Spring, SS = Summer, F = Fall. Odd = offered in odd numbered years. Even = offered in even numbered years.

4.2.3 MASTER OF SCIENCE DEGREE WITH CONCURRENT ENROLLMENT IN THE DVM PROGRAM

Students may be concurrently enrolled in the professional curriculum leading to the DVM degree and in a graduate program after completion of 90 credits of pre-veterinary or professional course work. Students enrolled in the Veterinary Preventive Medicine thesis and nonthesis M.S. degree program are required to maintain a grade point average of 3.0 or higher in the veterinary curriculum. Students are subject to normal rules and procedures of both colleges. Degree requirements for the MS are identical; however, it is anticipated that students would enroll in selected veterinary courses for graduate credit (<https://vetmed.iastate.edu/vdpam/academics/graduate-programs/DVM-masters>). Students interested in the concurrent program are not required, but encouraged, to identify a major professor and initiate enrollment during the first semester of the DVM program.

To apply, complete the “Concurrent Enrollment Request” form. This form must be submitted to the Graduate College (1137 Pearson Hall).

If a student does not hold a B.S. or B.A. degree, a graduate degree would not be granted until all requirements for the D.V.M. degree are completed. By not restricting credits earned, a student may pursue graduate studies during summer and holiday sessions. Although it is possible to complete both degrees within the four year DVM period, additional semesters may be required.

Refer to the Graduate College Handbook and information on the CVM website for <https://vetmed.iastate.edu/vdpam/academics/graduate-programs/DVM-masters> for additional information on the concurrent degree program.

4.3 MINOR IN VETERINARY PREVENTIVE MEDICINE

Students enrolled in other majors may achieve a minor in Veterinary Preventive Medicine. A minor for the MS degree requires a minimum of nine graduate credits (VDPAM 527, 528, 529). In addition, a member of the VDPAM graduate faculty (VPM or POPSC) must be on the student’s POS committee.

4.4 PH.D. DEGREE REQUIREMENTS

The mission of the VDPAM PhD Program is to promote research, disseminate knowledge, and create future leaders in the area of Population Sciences in Animal Health.

By nature, research and training in Population Sciences is cross-disciplinary with other graduate programs at ISU, e.g., agricultural and biosystems engineering, animal science, animal behavior and welfare, bioinformatics and computational biology, ecology and evolutionary biology, economics, genetics and genomics, immunobiology, veterinary microbiology, veterinary pathology, statistics, and toxicology.

The student's work and progress will be under the supervision of a major professor and a Program of Study committee. Successful completion of the program is achieved through the defense of a doctoral dissertation and completion of at least 72 credits. There is a minimum of 26 credits from coursework,

and the remaining credits are typically Research credits (VDPAM 699), available for students during all semesters.

Required courses (minimum of 18 course credits):

A. Required core courses (select all)

Course	Description	Credits	Semester
GR ST 565	Responsible Conduct of Research	1 Cr	S, F
STAT 587 ^{ON*}	Statistical Methods for Research Workers	4 Cr	S, SS, F
VDPAM 527 ^{ON}	Applied Statistical Methods in Population Studies	3 Cr	Alt F, Odd
VDPAM 528 ^{ON}	Principles of Epidemiology and Population Health	3 Cr	S
VDPAM 529 ^{ON}	Epidemiological Methods in Population Research	3 Cr	Alt F, Even

B. Required applied courses (select *at least 2 out of 6*):

Course	Description	Credits	Semester
VDPAM 560X ^{ON}	Ecology of Infectious Disease	3 Cr	Alt S, Odd
VDPAM 562X	Applied Diagnostic Technologies	3 Cr	Alt F, Even
VDPAM 564X ^{ON}	Animal Welfare Science and Research	2 Cr	Alt S, Even
VDPAM 650	Swine Diagnostic Medicine	4 Cr	F
VDPAM 654	Comparative Antimicrobial Clinical Pharmacology	2 Cr	Alt F, Odd
VDPAM 567X	Design, Implementation and Analysis of Field Studies in Food Animals	3 Cr	Alt F, Odd

^{ON} = available online. ^{ON*} = STAT 587 available online typically only in Spring and Summer. S = Spring, SS = Summer, F = Fall. Odd = offered in odd numbered years. Even = offered in even numbered years.

Elective courses: To be selected from ISU Graduate level courses in consultation with the student's Major Professor and Program of Study committee. At least 6 credits of elective courses are required, achieving a cumulative total of at least 26 course credits. The remaining credits for a total of 72 credits may be a combination of research credits (VDPAM 699) and graduate-level courses approved by the POSC. These can be any approved Iowa State University graduate level or dual listed course (List of courses found at <https://catalog.iastate.edu/azcourses/>) including, but not limited to, any remaining core courses.

5 PROCEDURES FOR MAJOR PROFESSOR AND PLAN OF STUDY & COMMITTEE (POSC)

5.1 GRADUATE FACULTY NOMINATION

Qualified applicants will be accepted into the program only after the graduate student has been accepted by a major professor. Potential applicants are encouraged to research the [VDPAM faculty](#) and contact those with similar research interests prior to submitting an application.

Application Deadlines

Applications are accepted throughout the year, with entrance into the program all terms (Fall, Spring and Summer). We recommend that your application be completed by mid-June for fall admission, mid-October for spring admission, and mid-March for summer admission.

Contact the Department or see the departmental website for complete instructions:

Department of Veterinary Diagnostic and Production Animal Medicine

Director of Graduate Education

2203 Lloyd Veterinary Medical Center

Ames, Iowa 50011

Complete information on the application process is available through the Graduate Admissions Office website (<http://www.grad-college.iastate.edu>). Information about the application process can be found on the [VDPAM Graduate Programs](#) on the College of Veterinary Medicine web site.

5.2 MAJOR PROFESSOR

Working in conjunction with the Program of Study committee, the Major Professor serves to guide the student through their graduate studies and research. If the major professor has not previously advised or co-advised a graduate student, students must have a co-advisor as well. Applicants must list the names of faculty members whose research is of interest at the time they submit their application. Admission to the graduate program requires that a faculty working in the student's area of interest agree to serve as their Major Professor.

5.3 PROGRAM OF STUDY

The Program of Study (POS) is developed by the student and major professor in consultation with the Program of Study Committee. The POS form lists courses that the student and the POS Committee have agreed the student must complete for the degree. For Veterinary Preventive Medicine and Population

Sciences in Animal Health, this must include the required courses. Ideally the POS should be submitted for approval by the end of the second semester in the program using the appropriate procedures defined by the Graduate College (through Accessplus, under the Graduate Student Status in the Student tab).

The POS is submitted and signed electronically through Access Plus by the student, committee members, Program Chair and the Director of Graduate Education (DOGE) before being submitted to the Graduate College.

Students can log in to their Accessplus account by visiting www.iastate.edu, and clicking on Accessplus link on the top right corner, under the sign-ons button. Accessplus can also be accessed at: <https://accessplus.iastate.edu/frontdoor/login.jsp>. Once in Accessplus their POSC page is found under the Graduate Student Status page, in the Student tab.

Once a POS has been approved, any changes require the approval of the major professor, Program Chair and DOGE. Major changes, such as course substitution(s), changing from thesis to non-thesis, or vice versa, and deletion or addition of a declared minor, require the approval of the POS Committee, the Program Chair, DOGE, and the Graduate College.

5.3.1 PROGRAM OF STUDY COMMITTEE – VPM PROGRAM

The student's Program of Study (POS) Committee should be established during the first semester in the program. The function of the POS committee is to work with the Major Professor in guiding the student through their program. The POS Committee for the M.S. degree consists of at least 3 members of the Graduate Faculty ([POSC Committee Worksheet](#)): two members (including the Major Professor) from the proposed area of emphasis of the thesis, plus one "outside" member. The "outside" POSC member's area of expertise should be clearly distinct from the major professor's. The VDPAM Graduate Program's Governance document has details about eligibility and process to obtain graduate faculty status.

5.3.2 PROGRAM OF STUDY COMMITTEE – POPSC PROGRAM

The POS Committee for the Ph.D. degree consists of at least 5 members ([POSC Committee Worksheet](#)): three to four members (including the Major Professor) from the proposed area of emphasis of the thesis, plus one or two "outside" members. The "outside" POSC member's area of expertise should be clearly distinct from the major professor's. The VDPAM Graduate Program's Governance document has details about eligibility and process to obtain graduate faculty status. Preferably, the student's Program of Study (POS) Committee should be established by the end of the second semester.

6 EXAMINATIONS.

6.1 QUALIFYING EXAMINATIONS

The VPM & POPSC programs do not require a qualifying examination.

6.2 PRELIMINARY EXAMINATION

The POPSC program, as a doctoral degree, requires a preliminary examination, which consists of two steps:

6.2.1 THE WRITTEN PRELIMINARY EXAMINATION.

There is no restriction on the topics of questioning, but questions typically focus on the student's area of emphasis. Students should take the written preliminary exam at least 1 semester after establishing POSC.

Each POSC member defines the resources available to the student during the exam, and provides 1 'set of questions' to the student. Set of questions may include: 'mini-grant proposals', general knowledge questions, questions related to the area of study. Students are typically allowed 4-8 hours to respond to questions of each POSC member.

6.2.2 THE ORAL PRELIMINARY EXAMINATION.

Given to the student shortly after the written examination. The oral examination needs to be concluded at least 6 months before the final oral examination.

POSC members meet in person with the student for the oral examination. There is no defined area of questioning, but questions typically a) follow the line of questions from the written exam, and/or b) additional questions over the area of emphasis of the student's proposed thesis.

The results of the oral examination are reported to the Graduate College as: pass without conditions, pass with conditions, no pass with option to retake the exam, no pass without option to retake the exam.

6.3 FINAL EXAMINATION

6.4 DOCTORAL FINAL EXAMINATION.

The DOCTORAL FINAL ORAL EXAMINATION is conducted after the dissertation is finished. The dissertation should be provided to the POSC three weeks prior to the final examination date. The final examination has 2 steps:

First, the Ph.D. candidate must present a ~45-50 minute public seminar followed by 10-15 minutes of questions from the audience (not from POSC members). Thereafter, a final oral examination by the POSC in which committee members ask questions related to the student's dissertation and area of emphasis.

6.5 THESIS MS FINAL EXAMINATION.

The thesis-MS final exam is an oral examination scheduled two weeks after the thesis has been provided to POS Committee members.

The MS candidate must present a ~45-50 minute public seminar followed by 10-15 minutes of questions from the audience (not from POSC members). Thereafter, the student is exposed to the final oral examination by the POSC in which committee members ask questions related to the student's thesis and area of emphasis.

6.6 NON-THESIS MS FINAL EXAMINATION

After completion of the written creative component, the POS committee administers an oral final. This examination involves a review of the course material taken by the candidate, as well as a discussion and assessment of the creative component.

7 CREATIVE COMPONENT, MASTER THESIS, AND DOCTORAL DISSERTATION

7.1 DOCTORAL DISSERTATION

A doctoral dissertation must demonstrate conclusively the ability of the author to conceive, design, conduct and interpret independent, original, and creative research. It must attempt to describe significant original contributions to the advancement of knowledge and must demonstrate the ability to organize, analyze, and interpret data. In most instances, a dissertation includes a statement of purpose, a review of pertinent literature, a presentation of methodology and results obtained, and a critical interpretation of conclusions in relation to the findings of others. When appropriate, it involves a defense of objectives, design, and analytical procedures. Dissertation research should be worthy of publication and should appear in appropriate professional journals or book form.

The format of the dissertation should conform with ISU guidelines: <https://www.grad-college.iastate.edu/thesis>.

The completion of a doctoral dissertation is an essential component of the Ph.D. program in Population Sciences in Animal Health. The dissertation allows students to demonstrate their:

- Ability to communicate effectively in writing

- Comprehensive understanding of the body of knowledge relative to the topic of their area of study
- Awareness of technical, methodological, and other issues relevant to the problem addressed
- Ability to demonstrate critical and independent thinking in the field of their dissertation.

The format of the dissertation should conform with ISU guidelines: <https://www.grad-college.iastate.edu/thesis>. The major professor and the POSC will approve the content and format of the dissertation. As a reference, dissertations may be organized into chapters. An introductory chapter provides background to the theme or concept that describes the dissertation, and includes the motivation/need for the subsequent work. This is followed by research chapters (typically four), which should be organized based on agreement with the major professor and the POSC. The last chapter is typically a General Discussion / Conclusions chapter that summarizes the program of study work. This chapter may discuss flaws in the methods used or that were not discussed especially if they have been previously published. Also, the closing chapter may discuss future directions - it may be useful to think of this as the next grant proposal.

Students are strongly encouraged to publish their work in the peer reviewed literature. PhD students are also encouraged to experience writing grant proposals.

8 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 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.

The format of the dissertation should conform with ISU guidelines: <https://www.grad-college.iastate.edu/thesis>.

The completion of a Master of Sciences thesis is an essential component of the M.S. program in Veterinary Preventive Medicine. The thesis allows students a chance to integrate epidemiologic principles learned in courses and to demonstrate their:

- Ability to communicate effectively in writing
- Breadth of knowledge relative to the topic
- Awareness of technical, methodological, and other issues relevant to the problem addressed
- Comprehension of related techniques, their proper use, and limitations

The major professor and the POSC will approve the content and format of the thesis. As a reference, theses may be organized into chapters. An introductory chapter provides background to the theme or concept that describes the thesis and includes the motivation/need for the subsequent work. This is followed by research chapters (typically two), which should be organized based on agreement with the major professor and the POSC. The last chapter is typically a General Discussion / Conclusions chapter that summarizes the program of study work. This chapter may discuss flaws in the methods used or that were not discussed especially if they have been previously published. Also, the closing chapter may discuss future research directions.

Students are strongly encouraged to convert their master's theses into manuscripts for publication or research grant applications.

8.1 Creative Component in a non-thesis master's:

The completion of a master's creative component is an essential component of the M.S. program in Veterinary Preventive Medicine (Non-thesis). The creative component allows students a chance to integrate epidemiologic principles learned in courses and to demonstrate their:

- Knowledge in a substantive area such as diagnostics or production medicine
- Ability to communicate scientific reasoning and argue analytically
- Awareness of technical, methodological, and other issues relevant to clinical epidemiologic research
- Comprehension of statistical techniques, their proper use, and limitations

The POS committee may change the format, and this should be a discussion but a common format for a creative component is about 20-40 pages long, double-spaced, including tables, figures, and references. It can take multiple forms, including:

- An original analysis of data (whether collected primarily for the thesis or as secondary data analysis)
- A systematic literature review with a meta-analysis of data, or critical reanalysis or critical reanalysis of data.
- A comprehensive literature review with a federal grant proposal, or one of equivalent rigor, for a new study to bridge a gap in the existing knowledge
- Evaluation of a methodological problem using real or hypothetical data
- Original research

- Evaluation of a methodological problem using real or hypothetical data

8.2 Writing and Editing Responsibility

The thesis or dissertation should reflect the highest standards of scholarship, serving as a measure of quality for the student, major professor and the program.

Responsibility for writing and editing the thesis or dissertation rests with the student, under the supervision of the major professor. The Graduate College does not permit joint authorship of theses or dissertations. It is the responsibility of the professor in charge of a candidate's program to supervise the preparation of preliminary and final drafts of the thesis or dissertation, to assure the highest level of quality when the student presents the thesis or dissertation to the POS Committee for final approval.

When preparing the publications for the thesis students should check with the major professor if any of the following guidelines for publication can be used as a template for designing a study or reporting a study:

<u>CONSORT</u>	Consolidated standards of reporting trials
<u>MOOSE</u>	For meta-analysis of observational studies
<u>STARD</u>	For reporting studies of diagnostic accuracy
<u>STROBE</u>	For reporting of observational studies
<u>ARRIVE</u>	Animal Research: Reporting of <i>In Vivo</i> Experiments
<u>REFLECT</u>	Reporting guidelines for randomized controlled trials for livestock and food safety
<u>PRISMA</u>	Preferred Reporting Items for Systematic Reviews and Meta-Analyses

9 ADDITIONAL INFORMATION

9.1 TUITION AND FEES FOR STUDENTS WITH ASSISTANTSHIPS

State of Iowa resident students with graduate assistantships:

- 1/4 time or more for three months (six weeks in the summer) or more are assessed Iowa resident tuition at the full-time rate in fall and spring terms and per credit hour in summer terms and may earn a tuition scholarship.
- 1/4 time or more for more than five class days but less than three months (six weeks in the summer) are assessed tuition by the credit hour and are not eligible for a tuition scholarship.

Nonresident students (non-Iowa students and nonresident aliens) with graduate assistantships:

- 1/4 time or more for three months (six weeks in the summer) or more
 - retain their non-residency classification,
 - are assessed resident tuition at the full-time rate in fall and spring terms and per credit hour in summer terms as long as the graduate assistantship is continued, and
 - may earn a tuition scholarship.
- 1/4 time or more for more than five class days but less than three months (six weeks in the summer)
 - retain their non-residency classification,
 - are assessed tuition by the credit hour, and
 - are not eligible for a tuition scholarship

9.2 ASSISTANTSHIP TIME LIMIT

The time limit for assistantships will vary greatly depending on the type of support. Teaching assistantships are given on a year-by-year basis at the discretion of the Chair currently VDPAM has no teaching assistantships. Research assistantships may be related to the life of a research grant or availability of departmental, USDA or other support. Students should discuss their support with their major professor, Chair or supervisor and plan accordingly. Most VDPAM faculty members assume that an M.S. should be completed in two to three years and a Ph.D. in about five years. Students should not expect support to be provided automatically beyond these points. Students making inadequate progress will be notified in writing that support may be terminated.

9.3 REQUIRED RESEARCH RESPONSIBILITIES

Research responsibilities are determined by the major professor in consultation with the POS Committee. There are no specific departmental research responsibilities.

9.4 BENEFITS

Leave

Arrangement for a leave of absence is made between the graduate assistant and that assistant's supervisor adhering to all grant and other funding source restrictions. When a graduate assistant needs to be absent either for personal reasons or illness, the supervisor should be understanding and accommodating to that need. At the same time, the graduate assistant should attempt to plan personal leave so that it does not interfere with or cause neglect of the duties associated with his or her appointment. Supervisors of graduate assistants are responsible for ensuring that their assistants do not exceed reasonable limits for leave.

When a conflict arises between the graduate assistant and that assistant's supervisor regarding leave of absence use, either party may involve the appropriate Director of Graduate Education (DOGE). If the conflict is not resolved in a timely manner, any of the parties may involve the Dean of the Graduate College for a binding resolution. When resolving conflicts, the concerned party must present all evidence in writing (email is acceptable) and all parties involved must receive a copy. In order to accommodate schedules, allow a minimum of five business days for document review and resolution meeting to be scheduled between the two parties within two weeks. Resolutions achieved between the DOGE and parties need to be in writing (email is acceptable) and must be sent to all parties including the Dean of the Graduate College.

Graduate assistants are not required to be on duty during official university holidays, which include New Year's Day, Martin Luther King's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving, Christmas, and one additional day each year determined by the president and the Administrative Board.

Insurance

All graduate students with assistantship of $\frac{1}{4}$ time or more receive single student medical insurance coverage free of charge under the ISU Student Health Insurance Plan. Coverage for hospital, accident expenses, surgical care and maternity care are included. For more information, please consult the ISU Graduate College Handbook and the ISU Benefits Office, 3810 Beardshear Hall.

9.5 MISCELLANEOUS INFORMATION

Cy-Ride Bus Passes/Fares

All ISU students ride free by showing their student ID card.

Internet/E-Mail

Every VDPAM student must register for a Net-ID - this gives you access to the Internet and an email account. The Department will send information at various times via electronic mail, so it is imperative that you register as soon as possible for an ID.

Keys/Proximity Cards

Keys/proximity cards will be issued upon request of the major professor. The application for building, room and laboratory keys is completed in the departmental office. Processing of key/proximity card applications may take up to two days. Keys/proximity cards must be returned to the Key Issue Desk, Facilities, Planning and Management Building, prior to graduation. There is a fine of \$30 per lost key/proximity card.

Student Health Center

Thielen Student Health Center is a full-service medical clinic in Ames, Iowa, staffed with physicians, advanced registered nurse practitioners and nurses. Our team is available to care for the Iowa State University students' primary health care needs.

We understand the unique needs of students – things like working around your schedule to help you make an appointment or helping you transfer your medical records and prescriptions from home to school.

We provide an inclusive, non-judgmental environment where our diverse student body is treated with dignity and respect in a non-discriminatory way. We are conveniently located right on Iowa State University's campus across from State Gym!

Graduate Students on assistantship are provided with the Student and Scholars Health Insurance Program at no cost to them. With ISU SSHIP Insurance most services at Thielen Student Health Center are covered.

Recreation Services

All students currently enrolled in classes at Iowa State University, who are assessed the current Activity, Services, Building & Recreation Fee (most cases), are issued a membership to Recreation Services automatically and can access Recreation Services facilities and programs with their ISU Card during that academic semester.

ISU has three recreational facilities: State Gym, Lied Rec and Beyer Hall. State Gym is located on the west side of campus. It was recently renovated in 2012 and now offers a variety of new amenities such as the rock climbing wall and a leisure pool with a high-dive. Lied Recreation Athletic Center was built in 1990

and serves as the recreation center on the east side of campus. Found next to the Maple, Willow, Larch dorm complex, Lied has an array of activities to suit your workout needs or to just have some fun. Beyer Hall is located on the west side of campus, immediately across the street from State Gym. Beyer offers a variety of fitness equipment, training rooms, and group fitness classes.

Student Organizations

The CVM has numerous [student organizations](#) to address the varied interests of the students. The organizations provide students the opportunity to hear guest speakers, participate in wet labs, make professional contacts and develop leadership skills. Organized veterinary medicine will be an important component of the veterinary professionals throughout their career. Student organizations provide the foundation for and exposure to those parent organizations that they will join following graduation.

Iowa State University CVM is a corporate-friendly college. It is beneficial for future veterinarians to have exposure to information about the veterinary products that they will use in their practices and have the opportunity to learn how to make informed decisions about which products they will promote to their clients. Students can apply for student company rep positions with the various companies that have partnerships with the CVM. Some companies provide a yearly stipend, opportunities to travel to meetings and of course, the chance to educate other veterinary students about the products of the company they represent.

College of Veterinary Medicine Association of Graduate Students

We are the graduate student organization that serves the College of Veterinary Medicine. The CVMAGS has several different departments and we recognize that there is no such organization which brings together all students from these departments. We aim to provide a place where all students of CVM can intermingle, exchange ideas, network, and express their concerns that relate to not just their departments, but to CVM as a whole. We also participate in various outreach and volunteer events each throughout the year in the Ames area.

9.6 LINKS TO STUDY SUPPORT SERVICES AND RESOURCES:

- Child Care - Office of Human Resource Services: www.hrs.iastate.edu/hrs/node/5
- Student Organizations & Clubs: <http://sodb.stuorg.iastate.edu/>
- Disability Resources - Academic Success Center: www.dso.iastate.edu/dr
- Health Care - Thielen Student Health Center: www.health.iastate.edu

- Legal Consultation - Student Legal Services: www.dso.iastate.edu/sls
- Student Counseling Service: <https://www.counseling.iastate.edu>
- Graduate & Professional Student Senate <http://www.gpss.iastate.edu/>
- City of Ames community information: www.cityofames.org and www.ameschamber.com