2018

Department of Veterinary Pathology Graduate Student Handbook

Contents

WELCOME TO THE DEPARTMENT OF VETERINARY PATHOLOGY

We are so excited that you have joined us! We are looking forward to continuing this journey with you and seeing where the future will take us!

We are a small and very collegial department. We presently have thirteen members of Academic Faculty, seventeen members falling into the categories of Adjunct, Professional Affiliates and/or Clinical Associates and four members of support staff.

THE PURPOSE OF THIS HANDBOOK

This handbook is designed to be a quick reference to important university regulations and as a guideline for information specific to the Department of Veterinary Pathology. This document contains many hyperlinks to obtain additional information. Please report errors, broken hyperlinks or suggested revisions to: elemir.simko@usask.ca or angela.turner@usask.ca

MISSION STATEMENTS

University of Saskatchewan: "….our mission is to achieve excellence in the scholarly activities of teaching, discovering, preserving and applying knowledge."

Western College of Veterinary Medicine: "…to provide veterinary education in western Canada and to act as a centre of veterinary expertise and research"

Prairie Diagnostic Services: "Provide client focused laboratory services and expertise in diagnostics, surveillance, teaching and research in support of animal health, public health, environmental health, food safety and market access"

Department of Veterinary Pathology: "… 1) delivery of high quality instruction to undergraduate and graduate students; 2) leadership and participation in research and other scholarly activities in the general area of veterinary pathology and profession; and 3) provision of diagnostic service in anatomic and clinical pathology"

General information about the Department of Veterinary Pathology

The functions of this Department are as follows:

1) Undergraduate teaching
2) Graduate teaching
3) Research in Animal Diseases.
4) Diagnostic Pathology Service

The priorities of any one senior pathologist or graduate student within the Department may not necessarily be in the order designated above. Undergraduate teaching may be somewhat separated from graduate studies, service and research; without the undergraduate curriculum, however, the other facets of this Department would lack, if nothing else, the physical shell to carry on its respective activities. In the discipline of pathology, graduate teaching, research and diagnostic service go hand-in-hand because each is so dependent upon the other while still serving the undergraduate student and practitioner. Thus, all aspects of operation of this Department are intimately intertwined and inseparable.

Graduate training is an exercise in self-discipline. While much of one's time may be directed towards the completion of the requirements for specific classes, much is also left to the individual. Students are encouraged to use the library, various resources in the department/college and on line, and to seek opinions from members of this and other departments. Interaction with other people is a good learning experience. Presenting and attending seminars, informal discussions with colleagues, and productive use of the library and other resources are essential parts of academic life. In the university environment, one must respect the opinions of others, accept criticism willingly, and provide constructive criticism.

Graduate students should be familiar with the expectations of the College of Graduate Studies and Research. For example, one should know the number of classes required for a given degree, residency requirements, etc. Department members must share equipment and facilities; keeping seminar rooms tidy and placing covers on microscopes, locking doors, etc., when not in use are little things that make life easier for everyone. A good rule is to leave something the same or better than the way you found it.

The department should function as a whole. The well-being and productivity of the entire department is usually not hinged on any one individual but rather is dependent on all members working together towards a common goal. We aim not only to meet but also to exceed expectations for ethical behavior in the teacher-student learning environment at the University of Saskatchewan outlined by Guidelines for Academic Conduct.

Guidelines for Academic Conduct

Approved by University Council June 17, 1999: http://www.usask.ca/secretariat/governing-bodies/council/resources/guidelines-for-academic-conduct.php

The following is a brief summary of principles and expectations relevant to graduate program in our department.

PRINCIPLE I: LEARNING AND GROWTH

The University of Saskatchewan's Mission is ".... to achieve excellence in scholarly activities of teaching, discovering, preserving and applying knowledge." In keeping with this mission statement, the first organizing principle recognizes that the learning environment should contribute to the learning and

intellectual growth of students, and that this requires teachers to continue their own growth and development throughout their careers, aided by the institution.

One overriding responsibility of teachers is to contribute to the intellectual development of students. Teachers have a duty to design instruction that facilitates learning and encourages independent thinking, to treat students with respect and dignity, and to avoid actions that inhibit student development. Students are entitled to be taught by teachers who are competent in the subject. Students should take advantage of the development opportunities offered to them and work cooperatively to foster their development.

PRINCIPLE II: HONESTY AND INTEGRITY

All members of the academic community are expected to engage in scholarly activities with honesty and integrity, and to avoid bias or conflict of interest. Trust depends on academic honesty, and honesty is fundamental to the integrity of the learning environment at the University.

Teachers must encourage an environment of academic honesty and be models of academic integrity. Assessment in the learning environment should adhere to the principles of honesty and integrity; i.e. it should be valid, open, fair, and consistent with the objectives of the course.

Students are expected to be assessed on the basis of their independent work, and should acknowledge the contributions of others when submitting work that is not fully their own. Please see the subsequent section 'Student Academic Honesty and Integrity' outlined by the College of Graduate and Postdoctoral Studies (CGPS).

Given that student evaluations can play a critical role in the formal decision processes of promotion, tenure and annual salary review for faculty at the University of Saskatchewan, it is expected that every student will provide an honest assessment of a teacher's performance when volunteering to do so.

PRINCIPLE III: RESPECT FOR THE DIGNITY OF OTHERS

All members of the University community are expected to contribute to the development of a learning environment where ideas, values and beliefs can be discussed and received with respect and dignity.

It is expected that students, teachers and other members of the institution will value and practice a level of confidentiality that is appropriate for professionals involved in a mentoring relationship. Upholding this standard serves to maintain and nurture academic trust and motivation in the teacher-student relationship.

Members of the academic community are expected to respect the dignity of colleagues, and to work cooperatively in the interest of fostering a learning environment conducive to the development and growth of all members.

Students should play a role in the development of peers, for example, by assisting in any ethical way any other students whom they may see to be in difficulty.

A student should:

- not discriminate unjustly or exploit other students
- not disrupt the general learning environment, for example in shared office space and microscope rooms
- not hide, hoard or destroy communal learning resources such as library materials, laboratory equipment, computers, microscopes

STUDENT ACADEMIC HONESTY AND INTEGRITY

The following text was copied and paste directly from http://www.usask.ca/CGPS/policy-and-procedure/professional-conduct.php

Students shall perform their academic work with honesty and integrity. Academic work includes, but is not limited to in class participation, examinations, assignments, patient care and other duties. Every student must perform his or her own work.

Student misconduct includes: Cheating; plagiarism; forgery; fabrication; theft of instructional material or tests; unauthorized access to or manipulation of laboratory or clinical equipment or computer programs; alteration of grade books, clinical records, files or computer grades; misuse of research data in reporting results; use of personal relationships to gain grades or favours or other attempts to obtain grades or credit through fraudulent means; unprofessional conduct related to patient care; threats to university personnel; and other conduct inconsistent with academic integrity.

Cheating and Fabrication

Cheating includes, but is not limited to, giving or receiving unauthorized aid in academic work such as the improper use of books, notes, or other students' tests, papers or lab reports; the buying or supplying of term papers, lab reports, essays or analyses; passing off the artistic work of others as one's own; taking a dishonest competitive advantage (for instance, preventing others from fair and equal access to library resources); or using work done for one course in fulfillment of the requirements of another, without approval of the teachers involved.

Fabrication includes furnishing to a university office or official or faculty member a written or oral statement known by the student to be false or misleadingly incomplete. This includes, but is not limited to, medical information and student data for financial aid and admission.

Plagiarism

Plagiarism is the theft of the intellectual creation of another person without proper attribution. It is the use of someone else's words or ideas or data without proper documentation or acknowledgement. Quotations must be clearly marked, and sources of information, ideas, or opinions of others must be clearly indicated in all written work. This applies to paraphrased ideas as well as to direct quotations. A student must acknowledge and fairly recognize any contributions made to their personal research and scholarly work by others, including other students and self.

Other Forms of Academic Misconduct

Unauthorized access includes clandestine entry into any university facility or property, unapproved use or manipulation of university documents, records, or files, including computer data and programs. Unacceptable use of computing services and violation of copyright law are also considered to be academic misconduct.

Consequences of Academic Misconduct in Coursework

Penalties resulting from informal resolution of academic misconduct will be mutually agreed upon by the student and course instructor/supervisor, while penalties resulting from formal resolution of academic misconduct shall be the responsibility of the panel hearing the case.

Consequence Guidelines for First Offense of Academic Misconduct in Coursework:

Suggested minimum Penalty for academic dishonesty in coursework is a mark of 0 for the assignment. Where plagiarism is the offence, the student should be required to review and write a document

summarizing an agreed source text on plagiarism; the document must be submitted prior to the next registration.

Intermediate Penalties for academic misconduct in course work range from 0 in the assignment/exam/lab and a (minimum) 10% reduction in the course grade, to suspension for at least one term.

Maximum Penalty of expulsion should be applied in cases where plagiarism is extensive and there is a deliberate attempt to hide/deny the plagiarism.

Consequence Guidelines for Second Offense of Academic Misconduct in Coursework:

A student found guilty of a second offence of plagiarism in coursework should be considered for expulsion.

Consequence Guidelines for Plagiarism in Thesis or Dissertation:

Suggested minimum penalty of suspension of at least one term in cases where examples of plagiarism are very limited in number and scope or where there are extenuating circumstances. Student should review and write a document summarizing an agreed source text on plagiarism prior to the next admission period.

Maximum Penalty of expulsion should be applied in all cases of substantive plagiarism. In the case of an approved thesis or dissertation, the penalty should also include revocation of the thesis or dissertation.

Consequence Guidelines for Fabrication of Data or Results:

Fabrication of data or results used for research and course work will not be tolerated and students who engage in this behavior will be subject to consequences equivalent to those applied in cases of plagiarism.

GRADUATE PROGRAM ADMINISTRATION

The College of Graduate Postdoctoral Studies (CGPS) is Responsible for overall administration of graduate programs at the University of Saskatchewan https://www.usask.ca/cgps/. Please take time to review Graduate Studies & Research Policies https://www.usask.ca/cgps/policy-and-procedure/index.php that provide basis for our departmental graduate program.

Department of Veterinary Pathology

Faculty members and clinical associates of the Department of Veterinary Pathology make most decisions regarding the Department's graduate program, including the approval of applicants for admission to the program, regulations regarding qualifying and comprehensive examinations, conditions for transfer of students from M.Sc. to Ph.D. programs, and nomination for scholarships and awards.

Administrative Staff

Graduate Chair: Dr. Elemir Simko is the Departmental Graduate Chair.
Role of Graduate Chair: The graduate chair offers advice and information regarding Vet Path and CGPS regulations to ensure consistency among Graduate Advisory Committees and ensure departmental standards are maintained. The graduate chair should be viewed as an advocate for the student and should be the first person that the student consults should problems arise that cannot be resolved with the supervisor and/or committee members. On an administrative level, the Vet Path graduate chair is responsible for chairing each meeting, preparing the CGPS progress report, overseeing any qualifying

and comprehensive examinations and thesis defenses. At the University level, the Graduate Chair acts as liaison between the Department and the CGPS.

Graduate Programs Coordinator: Angela Turner and Tyler Moss
Role of Graduate Programs Coordinator: The Vet Path Graduate Program Coordinator provides administrative support, advice and guidance on procedural matters related to the Department, the graduate program, and CGPS requirements. The Graduate Program Coordinator is responsible for scheduling Research Advisory Committee meetings, examinations and defences, maintaining and submitting the appropriate paperwork to CGPS, and assisting in recruitment of new graduate students.

Graduate Advisory Committee

At the beginning of graduate studies, a Graduate Advisory Committee (GAC) should be named to assist in course selection and definition of the research area. The supervisor and the student together with the Graduate Chair most often guide the decision-making process for committee member selection. Collectively, committee members should have sufficient experience and knowledge to be able to effectively assist the student with research design, background, methods, and analysis. It is however, not always possible or necessary to have a committee member representing each of the technical aspects of a research project. The guiding principle is that the student needs sustained advice from the beginning of their program if they are to move expeditiously and constructively through the various program requirements.

Role of GAC: It is the responsibility of the Graduate Advisory Committee to assist students in course selection and definition of research area, to provide support and advice, to regularly evaluate the student's progress by meeting at least once yearly, to take appropriate and timely action in view of this progress, and to keep records of this evaluation and all actions taken. The GAC also plays an important role in assessing student performance in qualifying and comprehensive examinations, and at the thesis defence.

Membership of RAC:

The Master's Advisory Committee consists of at least three members; the Ph.D. Advisory Committee consists of at least five members, as follows:

1. Advisory Chair - the Graduate Chair or designate

2. Supervisor - A member of the faculty of the CGPS (adjunct professors included) but cannot be a Professional Affiliate.

3. Co-Supervisor, if applicable – in the absence of a CGPS faculty Supervisor, persons who are not members of the faculty of CGPS, may be granted permission to be a co-supervisor by the Dean, CGPS. Co-supervisors share a vote in decision-making at the oral defence, and thus count as one member.

4. Additional Members - [need a minimum of 1 for a Master's and 2 for a Ph.D.]. Each member must be members of the faculty of CGPS, adjunct professors, or professional affiliates, or be granted permission by the Dean, CGPS.

5. Cognate Member - [need 1 for a Ph.D. program]. Must be a member of the CGPS Graduate Faculty from a different academic unit (department/college) than the student and supervisor.

6. The Dean of the CGPS is an *ex officio* member of the Advisory Committee.

Supervisor

Your supervisor is responsible for providing supportive advice and discussions about the research, assistance with research design, and for timely review of research proposals, manuscripts and thesis drafts. Supervisors are also required to provide sufficient resources to ensure that the research can proceed as effectively as possible. These resources include the provision of research-operating funds, and access to research space and equipment as necessary. In the case of diagnostic training, your supervisor may also be responsible for guiding you through the requirements for board certification within your discipline. Some students may have two co-supervisors: one for research project and the other for diagnostic training. Your supervisor is accountable to the University and granting agency for the research you undertake. The supervisor also records the minutes of the Research Advisory Committee meetings and circulates to all GAC members and the Graduate Program Coordinator within 5 days of the meeting. Mentor-mentee relationships can unfold in many different ways and depend on the needs and personalities of both parties. However, developing a strong, positive relationship is fundamental to successfully meeting the goals of the graduate program. Your supervisor may wish to have a weekly meeting with each of his/her students, may desire a less formal (as required) schedule of meetings, or expect you to request meetings whenever you require assistance or complete a task. Any of these approaches may work, but some may be preferred. In the end, it is strongly advised that you you discuss and work out the best form of communication with your supervisor early in your program.

Supervisors on Sabbatical or Other Leave: Supervisor shall ensure that adequate provision has been made for continued supervision and student support during an absence or leave. All such arrangements must be communicated well in advance to the CGPS Dean, academic unit Head and the student. Interim examining and supervisory arrangements to cover a period of absence do not release Supervisors from final responsibility for the adequate supervision of their students.

Graduate student

Faber est suae quisque fortunae - Every person is the artisan of his own fortune
(Appius Claudius Caecus (340 - 273 BC)

The above Latin proverb is especially true for each graduate student. While there are many people involved in your program, ultimately it is up to you to determine how successful your program will be!

Beginning life as a graduate student is often a daunting prospect. Many of our graduate students move to Saskatoon from other parts of the world and may not be familiar with the city of Saskatoon and the University of Saskatchewan. In addition, for many of you this will be your first experience as a graduate student. Your role as a graduate student will be very different from an undergraduate student.

Graduate training is an exercise in self-discipline. While much of one's time may be directed towards the completion of the requirements for specific classes, much is also left to the individual. Students are encouraged to use the library, various resources in the department/college and on line, and to seek opinions from members of this and other departments. Interaction with other people is a good learning experience. Presenting and attending seminars, informal discussions with colleagues, and productive use of the library and other resources are essential parts of academic life.

The graduate student's responsibility is to familiarize themselves with the requirements of the graduate program in which they are enrolled and to meet (and hopefully exceed) all the standards set by the CGPS and the Department of Veterinary Pathology.

The student is responsible for the success of their graduate program, although the faculty, Graduate Advisory Committee and the Graduate Chair will always be available to help with problems within the student's program. Specific responsibilities include: timely registration for courses and payment of fees owing, maintaining academic performance at a level commensurate with the program, attending and participating in the weekly departmental seminar series, a commitment to research, adherence to University regulations concerning Academic Integrity, and maintaining a spirit of collegiality with peers, laboratory co-workers, and faculty. It is the student's responsibility to seek advice from their advisory committee where appropriate. Students can request an advisory committee meeting at any time by contacting the Graduate Chair.

GAC Meetings

The purpose of the Research Advisory Committee meeting is to assess your progress in terms of your program of studies and research activities. In keeping with this goal, it is important that you provide satisfactory evidence of progress at each meeting. At least one week before your Graduate Advisory Committee meeting, you must prepare and circulate to all committee members the Graduate Student Progress Report. A template is attached in the Appendix 1 of this handbook. The Graduate Student Progress Report should be reviewed by your supervisor and her/his changes incorporated prior to sending it to other committee members. In addition, you will be expected to update the committee by opening the meeting with a brief (approximately 20 minute) PowerPoint presentation focused on your program of studies and research activities since the last committee meeting (unless you presented your research seminar at the departmental level immediately before the meeting). Again, review your presentation with your supervisor before the committee meeting. For new students, there may not be experimental data to present but a summary of your long-term career goals, program of studies (list of courses that you would like to take) and a research proposal (brief literature review, research objectives and planned methodology) would be expected.

Graduate Student Progress Report

The purpose of the Graduate Student Progress Report (Appendix 1) is to create a dynamic record of your course work and research progress. Prior to each Research Advisory Committee meeting, you must update your Progress Report to make the committee members aware of your progress since the last committee meeting. The document should be updated in consultation with your supervisor. Instructions on filling out the Graduate Student Report can be found within the report. Plan on submitting your report to the advisory committee at least 7 days prior to your committee meeting.

Any new material that is being added to the document should be clearly indicated (highlighted, different font colour, track changes, etc) so that the reader can easily see the new material being presented for each meeting. The Graduate Student Progress Report also contains sections where you will detail activities completed since the previous meeting, and planned over the subsequent 6 – 12 months.

Research Seminar

Each students must present, on a yearly basis, a research seminar at the departmental level to inform the audience about their research progress and future plans. It may be ideal and most efficient to plan a committee to follow right after seminar.

Transfers, Leaves, Extensions, Vacation:
https://www.usask.ca/cgps/policy-and-procedure/programs-supervision.php#6-5

DEGREE-LEVEL REQUIREMENTS AND LEARNING OUTCOMES

Master of Science (MSc) Degree

This is a thesis-based program that requires the defense of a thesis on a subject that allows the student to make some contribution to knowledge within the discipline, as well as related scholastic activities, including a number of courses. The MSc thesis can be either traditional or manuscript style format, which generally consists of a short abstract, a comprehensive literature review, at least two independent and robust research chapters connected with a common theme, and a concluding chapter that summarizes and ties the results of the thesis together. The successful completion of an MSc program is concluded with a defense of the thesis to the satisfaction of the research advisory committee and a cognate examiner. There are guidelines for Thesis Preparation provided by the CGPS (please visit the website resources https://students.usask.ca/graduate/thesis-preparation.php#Beforebeginning).

In this MSc program, students learn the processes of science at an introductory level by doing research that has been designed together with their supervisors and GAC members. Skills and knowledge to be acquired include, experimental design, laboratory techniques, gathering and analysis of data, writing and publication, use of the library and other resources, broad knowledge of the subject area with a specific in-depth knowledge that is focus of the MSc research. The MSc student will not necessarily be an expert in the research area at the end of the program. These students may choose to spend additional time learning diagnostic skills, but the time required to acquire the research skills and expertise cannot be reduced to acquire the additional diagnostic experience. Instead, the duration of the total program must be increased. Combined diagnostic and research training during MSc program should be discussed with and approved by the supervisor and the GAC at the first committee meeting.

Graduates should be able to apply the tools of scientific investigation to well defined problems and possess knowledge and skills in the fundamentals of scientific research.

This degree is at least one full year in length, and should be able to be completed within two years if done without diagnostic training.

Course requirements:

- 9 credit units of course work recommended and approved by the GAC. Students wishing to take additional courses can do so with the permission of their Graduate Advisory Committee provided an adequate progress has been made on their research project.
- Completion of all non-credit courses required for this program.
- SVMA license is required for diagnostic courses

Anticipated timelines:

- MSc research proposal should be submitted and approved by the GAC within first 6 months of the program, but not later than 12 months.
- The expected duration of the program is 2 years, and stipend support beyond 2 years is not guaranteed. It should be aimed to complete the research project portion of the program within 20 months of entry into the program, with 4 months to write and defend the thesis.

Master of Science Degree with Diagnostic concentration

The purpose of this new MSc (Diagnostic Pathology) program is to offer research training similar to an MSc program (described above) in addition to diagnostic training component. In this MSc program,

students learn both the diagnostics and research. This program is available only to students with a DVM degree or equivalent.

Diagnostics: Diagnostic training is achieved predominantly through completion of clinical course work in diagnostic pathology (e.g. anatomic, clinical, wildlife, avian pathology) and supervision and teaching during the final stages of this program. By the end of the program, students should possess skills required for an entry level of diagnostic pathologist. In addition, they should be well on their way to successful writing of the American College of Veterinary Pathologists (ACVP) examination. This is a 3-year program (NB - ACVP eligibility requires 3 years of training).

Research: Graduates should be able to apply the tools of scientific investigation to well defined problems. Please see description of MSc degree (above) for detailed description of the research aspect of this program.

The successful completion of an MSc program is concluded with a defense of the thesis to the satisfaction of the Graduate Advisory Committee and a cognate examiner.

Course requirements:

- 18 credit units of course work recommended and approved by the GAC. Students wishing to take additional courses can do so with the permission of their Graduate Advisory Committee provided adequate progress has been made on their research project and diagnostic skills.
- Completion of all non-credit courses required for this program.
- SVMA license is required for diagnostic courses

Anticipated timelines:

- MSc research proposal should be submitted and approved by the GAC within first 6 months of the program, but not later than 12 months.
- The expected duration of the program is 3 years, and stipend support beyond 3 years is not guaranteed. It should be aimed to complete the research project portion of the program within 2 ½ years of entry into the program, with 6 left for the defense and preparation for the ACVP exam.

Master of Veterinary Science (MVetSc)

The Master of Veterinary Science program is oriented to learning by doing diagnostic work under supervision. The program is available only to students with a DVM degree or equivalent. Clinical course work in diagnostic pathology, either anatomic or clinical pathology, is the major component of study for all students. Students majoring in anatomic or clinical pathology may take courses to obtain limited experience in clinical or anatomic pathology respectively. Students majoring in clinical pathology normally also obtain training in surgical pathology.

In the Wildlife Health Option in Anatomic Pathology students acquire knowledge, skills and experience relevant to the practice of wildlife veterinary medicine. The program uses the core activities of the Canadian Cooperative Wildlife Health Centre, Western and Northern Regional Centre as its "clinic" for practical experience in the practice of wildlife veterinary medicine.

The goal of the MVetSc program is to graduate competent, broadly trained diagnosticians in either clinical pathology or anatomic pathology. They should be well on their way to successful writing of the American College of Veterinary Pathologists (ACVP) examination if they choose to do this. (Note: ACVP eligibility requires 3 years of training.)

In the Avian Pathology/Medicine option, course work would include epidemiology, pathology, microbiology, nutrition and poultry science. Training is directed at successful writing of the certifying examination of the American College of Poultry Veterinarians (ACPV).

The MVetSc Degree is not a research degree. The research component of the program is small, giving an introductory encounter; however, the research component is essential to the program. It is intended to provide insights into the strengths and limitations of research data and, thereby, to foster critical evaluation of scientific information. Research projects for MVetSc students most often will deal with problems in applied, diagnostic veterinary pathology. Some may venture into the pathogenesis of disease, but major experimental studies exceed the intended scope of the research component of the program. Some students may choose to enroll in a PhD or Senior Residency program following completion of the MVetSc degree. The MVetSc degree normally requires two years to complete.

The successful completion of an MVetSc program is concluded with a Comprehensive Examinations of MVetSc students to the satisfaction of the Graduate Advisory Committee (Please see Policy on Comprehensive Examinations for MVetSc Program).

Course requirements:

- 30 credit units of course work recommended and approved by the GAC. Students wishing to take additional courses can do so with the permission of their Graduate Advisory Committee provided adequate progress has been made on their research project and diagnostic skills.
- Completion of all non-credit courses required for this program.
- SVMA license is required for diagnostic courses

Anticipated timelines:

- MVetSc research proposal should be submitted and approved by the GAC within first 6 months of the program.
- The expected duration of the program is 2 years, and stipend support beyond 2 years is not guaranteed. It should be aimed to complete the research project portion of the program within 1 ½ years of entry into the program, with 6 months left for writing/publishing the research paper and preparation for the Comprehensive Examinations of MVetSc.

Doctor of Philosophy (PhD) Program

In the PhD program, the degree of expertise and independence expected is much greater than in the MSc program. Independent research with guidance is the main component. Knowledge of the subject area should be both broad and deep. At completion, the PhD graduate should be an expert in the dissertation topic. The place of diagnostic veterinary pathology in the PhD program is variable. Veterinarians in the PhD program may, upon graduation, seek academic positions that require clinical

service and teaching as well as research. PhD students with DVM degrees may choose to learn diagnostic pathology provided that adequate progress has been made on their research project. Diagnostic training should not negatively impact the development of the skills and expertise in PhD research area. The time required to acquire the research skills and expertise cannot be reduced to acquire the additional diagnostic experience. Instead, the duration of the total program must be increased. Combined diagnostic and research training during PhD program should be discussed with and approved by the supervisor and the Graduate Advisory Committee.

Graduates should be ready to enter junior academic or research positions. They should be capable of independent research and know how to create hypotheses that can be tested. They should have experience in presentation of data at scientific meetings and at least some teaching experience.

Graduates of doctoral programs will demonstrate exceptional aptitude within an area of study (often having completed a master's degree prior to admission). They should have broad knowledge of general area of their discipline and in-depth knowledge of their research field. Doctoral programs will cultivate a thorough understanding of the subject matter, autonomy, creativity, sound judgment skills, ethical maturity and academic integrity, exceptional written and oral communication skills, and analytic thinking skills. Doctoral programs require coursework, written and oral exams (qualifying and comprehensive) in relevant discipline, and satisfactory defense of an original contribution to knowledge presented in the form of a dissertation in the area of study. A doctoral program is expected to be able to be completed in four years unless it is combined with diagnostic training.

Course requirements:

- 6 credit units of course work recommended and approved by the GAC. Students wishing to take additional courses can do so with the permission of their GAC provided adequate progress has been made on their research project.
- Completion of all non-credit courses required for this program.
- SVMA license is required for diagnostic courses

Anticipated timelines:

- PhD research proposal should be submitted and approved by the GAC within first 6 months of the program, but not later than 12 months.
- Qualifying exam within first year
- Comprehensive exam after completion of courses and usually once the PhD research has been initiated or close to completion (the latter is more common in Dept. of Vet Path).
- Permission to write the thesis is given by the Graduate Advisory Committee when there is general agreement that sufficient work on the research project has been carried out. This will normally occur after: 1) all course work and required examinations are completed, 2) the thesis topic and outline has been approved by the Advisory Committee, and 3) the results of research findings are available.

Annual Progress Reports

The Chair of the Advisory Committee shall report to the Graduate Dean at least once annually on the progress of the student by completing the progress report. Any report indicating unsatisfactory progress shall be referred to the Dean of CGPS for further action. Prior to the final year of study, a Schedule for Completion must be developed by the student and advisory committee, and submitted in PAWS as a Progress Report

Graduate Student Reports

(Graduate Advisory Committee Update)
This report is sent by email after a committee meeting date has been arranged, to be completed by the graduate student, with assistance from the supervisor, and electronically submitted to Angie as well as all members of the at least 7 days prior to the committee meeting.

An example of this report is attached as Appendix 1.

Program of Studies

Within the first year of a student's registration at the U of S in a graduate degree program, a Program of Studies must be entered into the University database. The Program of Studies forms a contract between the university and the student such that successful completion of the noted courses, passing required exams and defence of the thesis (in requiring programs) will result in the conferring degree. Until this is entered, no contract exists.

QUALIFYING AND COMPREHENSIVE EXAMINATIONS

Qualifying and Comprehensive Examinations are not required components of Master's programs.

The Ph.D. Qualifying and Comprehensive Examination are administered in written and oral forms. The student's Advisory Committee shall inform the student in writing at least 60 days in advance that a Qualifying or Comprehensive Examination is to take place.

The CGPS must always be advised of the results of a Qualifying or Comprehensive Examination on a pass/fail basis.

A student failing a Qualifying or Comprehensive Examination is permitted a second Examination with permission of the Dean of the CGPS. A second failure automatically disqualifies the student from further work for that particular Ph.D. degree. This failure may be appealed to the Ph.D. Committee on substantive or procedural grounds.

In all cases, unless the student and the CGPS are informed otherwise in advance, the Examining Board for all written and/or oral components of the Qualifying or Comprehensive Examination will be all members of the Advisory Committee.

The Qualifying Examination

The purpose of the Qualifying Examination, which should be completed in the first year of the student's PhD program, is to satisfy the academic unit the student has the potential to obtain sufficient knowledge of the chosen general field of study to proceed toward candidacy for the Ph.D. degree. The content of the examination shall fairly and reasonably reflect material which the student could be expected to know and understand in view of the prevalent and current norms of the discipline and the student's chosen area of research.

The student will be provided ~ 3-5 general areas defined by disciplinary interest and area of research with a list of reading material at 60 days before the written exam. The supervisor and graduate chair will assemble written examination from the questions provided by the committee members. The written part of the examination will be a 'closed book' exam. All answers will be provided to all committee members and oral exam will be administered within ~ 7 days. Assessment is based on performance on both written and oral exams and grading is 'pass or fail'. The main evaluation criteria is consistent with the purpose of the Comprehensive Examination stated above. The Graduate Chair will chair the oral exam and will ensure that all students are treated in similar and fair way.

The Oral Examination (defence) for the award of the Master's degree in the same discipline at this or other recognized universities may, at the discretion of the academic unit and the CGPS, be accepted in lieu of the Qualifying Examination.

The Comprehensive Examination

The purpose of the Comprehensive Examination is to determine whether the student has a mature and substantive grasp of the field as a whole. Normally this examination is scheduled after the student has completed all course requirements and usually once the PhD research has been initiated or close to completion (the latter is more common in Dept. of Vet Path). The exam is on topics cognate to the candidate's field of research. A student passing the Comprehensive Examination is deemed a Ph.D. candidate.

The student will be provided ~ 4-5 general areas defined by the area of their PhD research with a list of reading material at least 60 days before the written exam. The supervisor and graduate chair will assemble written examination from the questions provided by the committee members. The written part of the examination will be a 'closed book' exam. All answers will be provided to all committee members and oral exam will be administered within ~ 7 days. Assessment is based on performance on both written and oral exams and grading is 'pass or fail'. The main evaluation criteria is consistent with the purpose of the Comprehensive Examination stated above. The Garaduate Chair will chair the oral exam and will ensure that all students are treated in similar and fair way.

THESIS

Thesis or dissertation is a lengthy written document that MSc and PhD students must prepare upon completion of their research. Thesis contains many chapters including a comprehensive literature review, and multiple research chapters. The format of the thesis varies according to the academic institution and the final product is approved by the CGPS prior to uploading to a public thesis depository. Most graduate students in the Department of Veterinary Pathology write a Manuscript Style thesis (https://students.usask.ca/graduate/manuscript-style.php#Beforeyoubegin), although a traditional thesis format is also acceptable. Regardless of the style, the thesis must be formatted according to the CGPS requirements https://students.usask.ca/graduate/thesis-preparation.php#panel-Formatting-Guidelinesandrequirements .

The adequacy of the project/thesis is decided by an examining committee consisting of the Supervisor, other members of the Research Advisory Committee and other persons as appropriate. The thesis, project or publishable paper presented in partial fulfillment of the requirements for the degree must:

1. Deal in an academically satisfactory way with a definite topic related to the major research field
2. Demonstrate ability on the part of the candidate to do independent study and investigation
3. Be written in good scholarly style and conform to the requirements of a style manual approved by the academic unit
4. Comply in presentation features with specifications of the CGPS.

A Ph.D. thesis, based upon original investigation, must demonstrate mature scholarship and critical judgment on the part of the candidate, as well as familiarity with tools and methods of research in the candidate's chosen research field.

As a general guidelines:

- MSc research program should generate 2 experimental chapters in the MSc thesis that are both unique and independent (plus Lit Review and Gen. Discussion).
- PhD research program should generate 3 or more chapters that are unique and independent which collectively contribute to a novel body of work (plus Lit Review and Gen. Discussion).

Issues of copyright must be addressed should one or more of the manuscripts be accepted for publication or already in print.

All Master's thesis students and Ph.D. students are required to submit their thesis or dissertation in electronic form.

ORAL EXAMINATION OF THE THESIS

The Examining Committee, with the exception of the Ph.D. External Examiner, shall be appointed by the academic unit(s) in consultation with the CGPS Dean. For Master's Defences, the examination is chaired by the Head of the academic unit, or designate (usually Graduate Chair). For Ph.D. Defences, the examination is chaired by the CGPS Dean or the Dean's Designate. The Research Supervisor may not under any circumstances serve as the Chair of the Oral Examination.

In the Department of Veterinary Pathology, the student shall make a brief (30-40 minute) presentation followed by questions from the Examining Committee (in Veterinary Pathology usually composed of Graduate Advisory Committee), beginning with the External Examiner. Examination questions are limited to work done by the candidate for the thesis, to knowledge of matters directly related to it, and to peripheral knowledge of the subject matter.

At the conclusion of the examination, the candidate shall withdraw while the Examining Committee decides by majority vote whether the thesis as submitted and the candidate's oral defence meet the requirements for the degree. The decision will be one of the recommendations outlined in section 13.4 of the Procedures and Guidelines https://www.usask.ca/cgps/policy-and-procedure/defence.php and https://www.usask.ca/cgps/documents/pnp_m_phd.pdf. This documents contain detailed description of the oral examination.

The Committee's decision shall be reported to the Dean, CGPS Where the Examining Committee's decision is not unanimous, and the majority view shall prevail provided the External Examiner shares the majority view. If those voting in favor of the majority opinion do not include the External Examiner, the examination shall be adjourned and the person chairing the examination shall so inform the Dean, CGPS. The Dean then shall investigate the circumstances and decide upon an appropriate course of action.

POLICY ON COMPREHENSIVE EXAMINATIONS FOR MVETSC STUDENTS

The final comprehensive examination will be oral and will consist of two parts:

1. Examination of general and specific knowledge of diagnostic veterinary pathology appropriate to the student's program of study.

2. Examination of the student with respect to the research project, including background knowledge and understanding, materials and methods, results and conclusions.

It is expected that both parts of this examination will be given at the same session but separately at that session. Approximately 15-30 percent of the session should be devoted to the research project. This single examination session will normally take place after presentation of a seminar by the student

regarding the research project. A draft of the final written report of the project will have been available for review by the committee prior to this examination. Participants in the examination will include all Committee members as well as other members of the Department that may be invited by the Graduate Chair.

Under unusual circumstances, the two parts of the examination may be given separately at two different sessions and may be separated in time from the seminar presentation made by the student. In these situations, all committee members should participate in both sessions. A draft of the research project report will be made available to the committee prior to the examination of the research project. Two copies of the final research project report must be received by the Department before forms required for convocation will be submitted to the College of Graduate Studies and the Convocation Office. The normal deadline for receipt of the final research paper is August 14.

TRANSFER FROM MASTER'S PROGRAM TO PHD PROGRAM

Transfer from a Master's program to a Ph.D. program shall take place after the end of the first year and no later than the end of the second year in the program.

Recommendation for the transfer must be initiated through a formal meeting of the student's Advisory Committee, which shall forward its recommendation through the academic unit to the CGPS. The following conditions must be met:

1. The student shows great promise both in terms of academic accomplishments and in potential for research.
2. The student has completed at least 9 credit units at the 800-level, and has achieved a minimum average of 80% and no grade below 70%.
3. There is evidence of good writing and oral communication ability.
4. There is evidence the student has requisite research skills and knowledge to be able to successfully complete a Ph.D. dissertation.
5. The student has successfully completed the Ph.D. Qualifying Examination prior to being recommended for transfer. This examination for the purposes of transfer can only be taken once. A student failing the Qualifying Examination or any part thereof cannot be recommended for transfer.
6. The student prepared a PhD research proposal based on their MSc research and the Advisory Committee approved the proposal. (please see detailed description)
7. The Research Advisory Committee will make the final decision for recommending transfer.

The PhD Research Proposal for the transfer from MSc to PhD

The PhD Research Proposal is a document outlining the student's intended PhD research. It must include a literature review, statement of rationale, hypothesis, research objectives, description of experimental design, methodology, statistical analysis, anticipated results, and anticipated problems and proposed solutions for at least 2 stand-alone studies (i.e. first two experimental chapters of PhD thesis). In addition, it should also describe in general terms the direction of future research (for experiment/chapter 3 and/or 4) based on anticipated results of first two studies. At the end student should briefly describe anticipated significance and benefits of their proposed research work.

Ideally, the document will be 10-15 (maximum 20) pages long (single-spaced, plus references, and appendices, if needed) similar in scope and style to a grant application proposal.

In addition, please attach a proposed budget (maximum 1 page) necessary for the successful completion of the entire PhD research project and indicate availability of funding for student's personal expenses (e.g. stipend, research grant). If funding is not secured for either for research operating cost or student's stipend, please outline a realistic plan for acquisition of necessary funds.

The advisory committee will understand that not everything can be covered in this short proposal. Also the student should remember the purpose of this document, which is not to be a comprehensive and detailed research protocol, but just a way of showing the advisory committee that the student is embarking on a realistic and well-considered course of research. This research proposal could be subsequently altered or amended with the appropriate approval by the advisory committee:

In evaluating PhD research proposals the advisory committee must be able to answer unanimously the following inter-related questions in the affirmative.

1. Does this research have the potential to make a substantial contribution to the existing literature in the area?
2. Is the proposed research likely to be of sufficient depth and breadth to meet the standard for a PhD dissertation?
3. Has the rationale and significance of this work been communicated convincingly?
4. Are the proposed research methods and design likely to meet the research objectives?
5. Is the proposed research feasible/doable? (e.g., population available, possible to be completed in the time available...)
6. Is the available funding sufficient to complete of the proposed research. If not is the proposed plan for acquisition of additional funding realistic?
7. Is the personal support for student (e.g. stipend) available and sufficient for the entire duration of the project? If not is the proposed plan for acquisition of additional funding realistic?

If any of the above questions are not answered unanimously in the affirmative, the revisions to the proposal and/or budget are required before transfer is approved.

LICENSURE WITH THE SASKATCHEWAN VETERINARY MEDICAL ASSOCIATION

In order to participate in the diagnostic courses offered by the department (e.g. Mammalian, Surgical, Clinical Pathology, Wildlife diagnostic courses), **all students and residents require licensure with the Saskatchewan Veterinary Medical Association**. The "Educational" category license is the most appropriate. Students do not need any components of the NEB examination in order to be eligible for the educational category license. **The SVMA requires that all applicants attend an educational session prior to receiving a license – these are held usually spring and fall**. Please visit the SVMA website to familiarize yourself with requirements for licensure. Students and residents are responsible for the cost associated with obtaining the SVMA license, the Department does not pay for these.

COURSE REQUIREMENTS

Together with your supervisor and GAC select courses that will be required for your program.

- MSc = 9 credits
- MSc with diagnostic concentration = 18 credits

- PhD = 6 credits

In addition there are certain non-credit courses that are required for each program. Please see the table below for your mandatory registration requirements.

Mandatory non-credit courses

	MVetSc	MSc diagnsotic	MSc	PhD
VTPA 992 - Project	**at all times**			
VTPA 994 - Research		**at all times**	**at all times**	
VTPA 996 - Research				**at all times**
VTPA 980 - Clinical Practice	**at all times**			
VTPA 990 - Noon Seminar	**T1, T2**	**T1, T2**	**T1, T2**	**T1, T2**
GSR 960 - Intro to Ethics and Integrity (must complete in T1 of first year) all students*				
GSR 962 – Ethics and Integrity in Animal Research (must complete in T1 of first year) all students *				
Lab Safety, Biosafety, Safety orientation for new employees training (must complete in T1 of 1st year) all students *				

* Provide certificate copies to Angie Turner to be included in your file

Additional information about courses:

GSR 960 and 962 and safety courses are mandatory for all new graduate students, and must be completed during the FIRST term of your graduate program. These are short on-line courses, and you will need to register for these via PAWS. These are non-credit courses, but they are a requirement of CGPS and this department. Information can be found at http://www.usask.ca/cgsr/for_students/gsrclasses.php

Please ensure that you register and complete the courses prior to the end of your first term in the department. (You are not required to take the GSR 961 portion, unless you are conducting research which involves human subjects).

Once you have completed the courses, please provide Angie Turner with the printed confirmation, so that she may include this in your file, and ensure that this is recorded on your program of studies. If you have any questions, please contact Angie Turner, Graduate Program Coordinator, RM 1622, (306) 966-7308, angela.turner@usask.ca

GSR 960: Introduction to Ethics and Integrity

This is a required course for all first year graduate students at the University of Saskatchewan. The purpose of this course is to discuss ethical issues that graduate students may face during their time at the University. All students will complete modules dealing with integrity and scholarship, graduate student-supervisor relationships, conflict of interest, conflict resolution and intellectual property and credit.

In order to progress through the modules, students must score 100% on short quizzes associated with each module. This part takes 2-3 hours.

GSR 962: Ethics and Integrity in Animal Research

This course is required of those students who will use animals in their research. Students completing the Canadian Council for Animal Care modules will receive credit based on achieving a passing grade on the quizzes in these modules. This course takes 10-12 hours.

UCACS Animal Care Course

A mandatory part of the Education and Training Program is completion of the UCACS Animal Care Course. This core training course is available as an online, web-based course. There are four different courses (laboratory animals, farm animals, fish, and wildlife) available, to allow flexibility and choice depending on one's research program. A course is also available specifically for SVMA licensed veterinarians or for principal investigators who are not directly involved in the use or supervision of live animals.

Each section contains a number of modules. A quiz at the end of each group of modules constitutes the formal grade for the course. When all three module groups have been passed successfully (average of 80% is required), the registrant will have passed the online course.

Please see Appendix 2 for registration instructions

GSR 961: Ethics and Integrity in Human Research

This class will be required only if your research involves human subjects. You will be advised by your graduate committee. GSR 961 is required of those students who are conducting research that will involve human subjects. These students will complete the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS) Tutorial. The TCPS Tutorial takes approximately 2 hours to complete although it may take longer if students follow all the links and read all three case studies. Students may take the entire Tutorial in one session, or they may complete it in a number of sessions. After the tutorial is completed and 100% of the questions are answered correctly, students follow the directions in the online course and forward the certificate of completion to the Research Ethics Office.

Mandatory Safety Classes

All personnel are required to take the following courses offered by Safety Resources: http://safetyresources.usask.ca/services/training/

1. **Safety Orientation for New Employees-in class setting**
2. **Biosafety course (Renewed every 5 years), offered on-line**
3. **Laboratory Safety course: offered on-line**

Once these are completed, please give a copy to Angela Turner for your file. To print off your training history, login using your NSID, http://safetyresources.usask.ca/services/training/ and your training history will be displayed for all the courses that you have taken; you may wait till you have all 3 courses completed and print off one sheet to give to Angela for your file.

Prior to commencing any work in the lab:

1. One is required to read and sign the Standard Operating Procedures (SOPs)
2. The student should be added to a Biosafety Operating Permit
3. The student should have a site specific training record sheet.

DEPARTMENT SEMINAR SERIES

The Department organizes a series of seminars in which all graduate students are to participate. Schedules will be posted. In general, all graduate students and Senior Residents are expected to attend as their program of studies permits. The participation of certain graduate students is required. Information on these seminars is provided below (See summary on page 25).

VT PA 990 Research Seminars (*12:30 – 1:30 p.m. Thursdays)*

Objective: to provide a forum for discussion of research conducted within the Department and new developments in biomedical science.

Participants: Graduate students, faculty, professional associates and guests.

Mandatory Requirement: The Research Seminar is a mandatory requirement in all graduate programs. Each student is required to present a Research Seminar during the academic year (September through April) unless the requirement is being fulfilled by the defense or final seminar during that time or prior to start of next academic year. The annual Research Seminar requirement cannot be waived; it cannot be postponed/moved to another academic year. Students who are conducting their research or program away from WCVM are expected to fulfill the requirement as scheduled, either in person or via video conferencing options.

Content: Graduate students are expected to present seminars on their own research: the first presentation is to explain the proposed research plan and experimental design so that these can be fully discussed and critiqued at an early stage; later seminars will report results as the research progresses. Graduate students in MSc and PhD programs should therefore plan to make one presentation in each subsequent year, including enough sufficient introductory information to remind the audience of the background and objectives of the research, and the materials and methods used.

Faculty and others may make presentations about various forms of research or on recent advances in a specific area of interest.

Length: 30 - 40 minutes, leaving time for questions and discussion.

VT PA 990 Diagnostic Seminars (*12:30 - 1:20 Thursdays)*

A weekly noon-hour seminar in which interesting cases in diagnostic veterinary pathology, wildlife disease, and topics of special interest will be presented. Graduate students registered in diagnostic courses are required to present one brief case report per course. **These seminars should be 12 minutes in length, with 3 minutes allowed for questions.** If you are presenting at a conference, similar time frames will be strictly enforced.

Objective: To present to the department and other interested parties examples of case material being submitted for necropsy, surgical and clinical pathology; these case reports need to be presented in a concise manner in a strictly limited time frame.

Participants: Graduate students, senior residents, faculty, professional associates and guests.

Content: The choice of subject is open, but most emphasis should be placed on current diagnostic material, i.e. presentations will consist of diagnostic cases that have been brought to a conclusion and are of interest for some reason. Senior pathologists will provide guidance on cases which they feel are worthwhile for seminars. Graduate students and senior residents should also be watching for appropriate cases. Cases showing good lesions and features of common diseases, as well as unusual diseases, are suitable. Students should discuss with their supervisors the cases they intend to present to

ensure that they are suitable. Each presentation should include the pertinent information on the diagnostic case and a discussion of some interesting or new aspect of the case or disease. The purpose of the seminar is to present pathologic findings, and emphasis should be placed in this direction rather than on the clinical aspects although a summary of pertinent clinical findings should be included. Cases can be based on necropsy, surgical or clinical pathology findings or a combination thereof. Past cases of the disease at WCVM may be reviewed during the preparation of the seminar and data from the files on incidence, etc., may be very interesting; however, this is not necessary and not expected.

Note: These seminars are not intended to be a forum for a complete didactic review of a particular disease.

Number of seminars: All graduate students participating in the diagnostic courses will be assigned **one 15 minute seminar per term, per course**. Otherwise, this seminar category will not apply to most MSc Research and PhD students. Senior residents are required to present one seminar per term (two per year) during their residency. If you are unable to present during your assigned slot, you need to make arrangements to switch with another graduate student and inform Angie Turner of this change.

General guidelines:

Presentations will be based on necropsy, surgical biopsies or clinical pathology cases submitted to Prairie Diagnostic Services. The following is a **general outline** of what should be included in the presentation:

- Signalment
- History
- Clinical pathology findings (if available)
- Gross findings (if available)
- Microscopic findings (if available)
- Other laboratory findings (ancillary tests)
- Diagnosis and differential diagnosis
- Discussion/review of the disease entity
- References

As a general guide, allow 1 minute per slide – practice your presentation to verify you are within the time constraints and your pace is appropriate.

All presentations will be given in PowerPoint and may include photographs of gross/microscopic lesions, as well as other visual aids selected by the students. The duty pathologist that was assigned to the case can assist in making suggestions for the presentation.

Make sure that your photographs and diagrams can be clearly seen in the back of the classroom and fonts can be read.

References: limit to only pertinent literature – exhaustive lists should be avoided and do not include the standard pathology texts (JKP, Smith and Jones, MZ).

The default font and color settings within a PowerPoint scheme are usually set for optimum clarity and ease of use. Please try not to alter these significantly or use too much animation – the effect may not be an improvement.

Remember: simple presentations are often the most effective.

Evaluation: There is no formal grade for this course. Graduate students will receive feedback on their presentations via completed seminar evaluation forms from at least 5 members of the audience. It is up to the student to review their feedback and incorporate suggested changes into future seminars.

Mystery Slide Seminars *(8:30 - 9:20 a.m., Wednesdays)*.

Objectives:

- to gain experience in description and diagnosis of histologic slides and smears (cytologic and hematologic) while becoming effective in the proper use of precise language and acquiring experience in oral presentation in a public forum;
- to develop confidence in one's diagnostic skills and to learn to handle criticism and discussion in a seminar setting;
- to gain experience in recognition of lesions and making diagnoses from projection slides of pathological material.
- to gain experience in interpretation of laboratory data, e.g. biochemistry, CBC

Participants: **All students taking diagnostic pathology course work (820-23, 830-33, 850-53) are expected to be prepared to present and discuss the cases chosen for these seminars**. **Senior residents are expected to review the cases, to attend the seminars and to participate in the general discussion. In addition, all Senior Residents are required to present one session during the academic year.** All other students are urged to attend the sessions. Those planning to write the ACVP board examination in anatomic pathology are encouraged to be active participants, i.e. prepared to present cases if called on (supervisor should be consulted in making this decision).

Presentations: For each case or slide a graduate student will be chosen to provide a succinct description of the major diagnostic features of the specimen displayed on the video monitor. The student is expected to take charge, to ask to have certain fields projected and to point to the lesions being described. A clear description of the main features should be presented and then one or more morphological diagnoses, as appropriate, should be made, followed by comments on etiology and pathogenesis.

Faculty and clinical associates will participate in discussions and bring their experience and points of view to the seminars in this way. Students should make the presentation assuming that some people in the audience may be unfamiliar with the slides or data. The material for each seminar is the responsibility of a faculty member, PDS professional associate or senior resident, who will act as discussant.

Schedule: Seminars are designated as either "glass slides" or "quiz". The glass slide sessions could include histology slides, cytology slides, blood smears, or a combination thereof. The quiz sessions typically involve several gross and/or microscopic images with associated questions.

Preparation: Cases will be made available by the pathologist by the Friday preceding the seminar and are to be examined on an individual basis by participating graduate students. Descriptions and diagnoses are to be prepared for all cases or slides as the individual effort of each graduate student, i.e. slides and diagnoses are not to be discussed in advance. It is essential to be willing to make the best possible assessment of lesions in tissues, to present this assessment for comment and criticism and to learn from others. Pathologists must develop a sense of confidence in recognizing what they do and do not understand about a lesion or disease process. They should challenge themselves to read and learn on their own. Quizzes are taken by all in attendance with no preparation required.

Necropsy Seminars (*4:30 - 5:00 p.m. Tuesdays and Thursdays*).

Objectives: to present cases and specimens of interest from recent service work to a College audience of undergraduate and graduate students, residents and clinicians; to gain experience in presenting preliminary case findings, tentative diagnoses and planned ancillary tests, and in discussion of these.

Participants: Presentations are made by undergraduate students, graduate students, senior residents, faculty and PDS pathologists on necropsy duty. Seminars are organized and conducted by a faculty member. Graduate students in diagnostic anatomic pathology courses and senior residents should expect to present cases or specimens at this seminar each day they are scheduled for duty, unless cases are done in conjunction with the undergraduate 580 course.

Content: A concise case history should be given. The clinician or student on the case may be asked to do this but, due to time constraints, emphasis must be placed on brevity when making this request. It is important to keep the seminar moving along and to maintain audience interest. The disease suspected may be introduced right away if desired. Short cuts in description are encouraged at this stage (e.g. fibrin, pus). At an appropriate point, clinical pathology data may be requested from a clinical pathologist or representative, such as a 580 student.

Timing: Presentation length will vary by case. It is important to monitor the time so that all presentations may be completed by 5 p.m. - check the posted schedule ahead of time or with the supervising faculty member, and be aware of the number of cases to be presented. Attendees have a further 15 minutes to examine specimens and ask questions of you. ***Clean-up begins at 5.15 p.m***

Clinical Pathology Rounds (*9:30 – 10:20 a.m. Wednesdays)*

Objectives: To present interesting and/or challenging cases from recent veterinary clinical pathology service work to an audience of undergraduate and graduate students, residents, clinicians, and pathologists; to gain experience in description and interpretation of cytological samples, blood/bone marrow smears, and clinical laboratory data; to enhance diagnostic skills and encourage participation in case discussions.

Participants: Presentations are made by undergraduate students, graduate students, senior residents, faculty, clinical associates, and PDS pathologists in the week following their clinical pathology duty. When not presenting, graduate students in diagnostic clinical pathology courses (VTPA 850 and VTPA 851) are expected to submit written descriptions of smears and written interpretations of laboratory data. Write-ups will be reviewed by the pathologist(s) responsible for the cases and feedback will be provided, either in written form or by reviewing the case with the student (e.g. over a microscope session). Clinicians from outside the Department, anatomic pathologists, and all pathology graduate students are welcome to attend. Audience members will participate in discussion and contribute from their respective areas of expertise.

Content: Rounds will consist of sufficient cases to fill the allotted time (usually between 4 and 6). Individual presenters may be responsible for all or a portion of the cases, depending on the service roster the prior week. Cases may consist of cytology preparations (fluid samples, fine needle aspirates, impression smears), blood smears, bone marrow samples, clinical pathology data (CBC, biochemistry, urinalysis), endocrine testing or a combination thereof. Presenters should provide all pertinent background information, lead discussion of the interesting or unique aspects of the case, provide follow-up (e.g. additional diagnostic tests, histopathology findings, necropsy results) wherever possible; and direct audience to appropriate related literature. Although the most senior pathologists may lead in selecting cases, anyone who has been on duty during the week may choose cases. Exceptional examples of common diseases are suitable, along with more unusual or challenging cases. Presenters will ensure

that a rounds sheet (including PDS case numbers, pertinent history and laboratory data) and accompanying smears are available for review no later than Monday afternoon the week of rounds, or Tuesday morning if the Monday is a holiday.

SEMINARS AND ROUNDS: REQUIREMENTS AND EXPECTATIONS

- All rounds and seminars in the Department of Veterinary Pathology are open for anyone to attend at any time.
- ***All*** graduate students in Veterinary Pathology are expected to attend ***all*** Noon Hour Research Seminars and defense seminars.
- All graduate students that take diagnostic course(s) are – required to attend all seminars and rounds that are listed in the syllabus for that particular course.
- All graduate students who are enrolled in diagnostic training (MVetSc, MSc-diagnostics) or graduate students enrolled in research degrees (MSc, PhD) that intend to acquire board eligibility during their training are strongly encouraged to attend all seminars and rounds related to their diagnostic specialty regardless whether they are enrolled in diagnostic course(s) during that particular term. Board eligibility requires 36 months of pathology training; seminars and rounds are considered as an important part of diagnostic training.
- Mystery slides seminars should be attended and mystery slides should be reviewed by all graduate students that intend to acquire board eligibility during their training, but only those that are enrolled in diagnostic courses are expected to be prepared to present the cases (although anybody may volunteer to do so).
- Any modification from the above should be approved by the graduate student's supervisor.

Summary Table for Anatomic Pathology Graduate Students

	Students enrolled in surgical or mammalian pathology courses	**Students that want to acquire ACVP eligibility but are not enrolled in diagnostic course for that term**
Noon Hour Research Seminars	Mandatory	Mandatory
Noon Hour Diagnostic Seminars	Mandatory	Strongly encouraged
Mystery Slide Seminar	Mandatory (review & present)	Strongly encouraged (review & attend)
4:30 Gross Pathology Seminars	Mandatory	Strongly encouraged
Surgical Pathology Rounds	Mandatory	Strongly encouraged
Mammalian Pathology Rounds	Mandatory	Strongly encouraged
Ophthalmology Rounds	Mandatory	Strongly encouraged
Dermatopathology Rounds	Mandatory	Strongly encouraged
Oncology Rounds	Mandatory	Strongly encouraged
Wildlife Rounds	Strongly encouraged	Encouraged
AFIP Rounds	Strongly encouraged	Encouraged

Summary Table for Clinical Pathology Graduate Students

	Students enrolled in diagnostic clinical pathology or surgical pathology * courses	**Students that want to acquire ACVP eligibility but are not enrolled in diagnostic course for that term**
Noon Hour Research Seminars	Mandatory	Mandatory
Clinical Pathology rounds	Mandatory	Strongly encouraged
Noon Hour Diagnostic Seminars	Mandatory	Strongly encouraged
Mystery Slide Seminar	Mandatory (review & present)	Strongly encouraged (review & attend)
Surgical Pathology Rounds	Mandatory*	Strongly encouraged
Ophthalmology rounds	Mandatory*	Strongly encouraged

Dermatopathology rounds	Mandatory*	Strongly encouraged
Oncology rounds	Mandatory*	Strongly encouraged

DIAGNOSTIC COURSES IN VETERINARY PATHOLOGY

Please refer to course syllabus for detailed information regarding any of the diagnostic courses listed here.

SVMA license:

In order to participate in the diagnostic courses offered by the department (e.g. Mammalian, Surgical, Clinical Pathology, Wildlife diagnostic courses), all students and residents require licensure with the Saskatchewan Veterinary Medical Association. Usually the "Educational" category license is the most appropriate. Students do not need any components of the NEB examination in order to be eligible for the educational category license. The SVMA requires that all applicants attend an educational session prior to receiving a license – these are held usually spring and fall.

Please refer to course syllabus for detailed information regarding any of the diagnostic courses listed here.

Mammalian Pathology I – IV VT PA 820-823

These courses are devoted to necropsy technique and examination of animals and tissues submitted for diagnosis. Each successive course constitutes additional training in both quantity and depth in mammalian pathology. Case material and associated reading is a priority and major commitment of students in the MSc with diagnostic program. It is the commitment, motivation and discipline of each student that will determine the individual's success in these courses.

Mammalian Pathology I. This is a structured 16-week (8-block) introductory course usually taken in the fall. The objectives are for students to develop appropriate levels of skill in necropsy and microscopy techniques, sampling for a variety of diagnostic tests, recognition and interpretation of gross and microscopic lesions of commonly seen diseases, the formulation of morphologic diagnoses and the art of differential morphologic and etiologic diagnoses. Gross and microscopic photography and ancillary diagnostic procedures such as immunohistochemistry and other molecular techniques will also be introduced. Major aspects of the pathology of selected systems will be covered through readings, review of a study set of histologic slides, and review sessions at the multi-headed microscope for the first 5 blocks of the course. Gross necropsy examinations of diagnostic cases will be performed each week. Histologic interpretation of specimens collected from these cases will be carried through to completion in each of the final three blocks. Seminars and a list of cases completed will be required. Attendance and participation in mystery slides seminar is mandatory. Students must independently review the cases prior to the seminars and be ready to discuss their findings. The final examination may include any combination of written questions and answers, interpretation of gross pathology (projected images), and description and interpretation of histologic slides.

Mammalian Pathology II, III and IV. These courses each consist of one term of regular duty on the necropsy service roster. Seminars and a case log (including references on cases) will be required. Attendance and participation in mystery slides seminar is mandatory. Students must independently

review the cases prior to the seminars and be ready to discuss their findings. There will be a final examination in each course.

Students in Mammalian Pathology may also participate in clinical teaching of undergraduate veterinary students. Graduate students may participate in the 580 rotation in necropsy and will assume responsibility for cases prosected by the undergraduate students.

List of Cases. A list is to be kept of all necropsies performed. It is to serve as a record of student experience which will be reviewed in evaluating student performance.

Reading of specific sections as assigned in Pathology of Domestic Animals (Maxie, Jubb, Kennedy, and Palmer) and of sections relevant to case material, is the minimum. Additional reading in other appropriate texts or from the published literature is expected.

For detailed information please see course syllabus.

Guidelines for Making Gross and Histologic Descriptions:

1. You should use your own words when describing gross and histological changes. You can't copy and paste descriptions from AFIP or from previous reports even if they were yours. Your descriptions should be accurate and unique, i.e. although two cases may receive the same final diagnosis, histological description should reflect the unique changes seen in each case. You are encouraged to review histological descriptions from AFIP to learn appropriate terminology and develop style, however, you can't copy and paste sentences. The same apply for comments; you cannot cite a section of a textbook or an article without the reference.

2. Sometimes you will get stuck on a case or have questions about what you are seeing. This is to be expected. Ideally you should seek out your GSS to ask these questions. If they are not available, you may need to ask another pathologist. If you have sought out help from someone else you need to inform the GSS when you turn that case in. This is not meant to discourage consultation, rather it is so that the GSS can assess how your knowledge is progressing.

Service. Service will be as indicated on the monthly duty roster and cases will be assigned by the supervising pathologist. Senior graduate students at later stages of their training may be assigned the job of duty pathologist and, under these circumstances, duty will extend to the full day. **It is important to remember that the cases used in the Surgical Pathology courses are part of the diagnostic service offered by the Prairie Diagnostic Services and that clients have every right to expect good service, including prompt completion of cases.**

Examinations. At the end of each course in Mammalian Pathology, an examination will be given. The examination will be based, in part, on the cases managed during the course, and the final examination may include any combination of written questions and answers, interpretation of gross pathology (projected images), and description and interpretation of histologic slides.

Review of Diagnostic Reports and Slides. Preliminary and final reports are to be entered into the diagnostic services system. Preliminary reports should be sent to the supervising pathologist by 9:00 a.m. of the next day **at the latest**. Slides should be given to the supervising pathologist for review. Turnaround time for completion of cases should be no more than 5 working days (this time includes also

time required for senior pathologists to finalize the case – at least 1 day). Grades for Mammalian Pathology courses will be based on weekly evaluations, case log book and a final exam.

Review of interesting cases will take place at the multi-headed microscope in Room 1688 once per week. Precise times will be posted at the beginning of each Quarter.

Please refer to course syllabus for detailed information regarding any of the diagnostic courses listed here.

Surgical Pathology VT PA 830-833

These courses are devoted to the gross and microscopic examination of biopsy material submitted for diagnosis; much of the material will consist of neoplasms and inflammatory lesions.

Surgical Pathology I. This is an introductory course. The objectives are to have students develop an appropriate level of skill in microscopy technique as applied to examination of biopsy material, and to become familiar with the pathological conditions that are encountered commonly in biopsy material. This will be achieved through review of sets of glass slides of most common conditions complemented with reading in textbooks and relevant articles. The student will learn how to trim biopsies and write a final report while completing one/two case(s)/week. The requirements of this course are review of assigned glass slides, attendance at Surgical Pathology Rounds and completion of a limited number of diagnostic cases. Attendance and participation in mystery slides seminar is mandatory. Students must independently review the cases prior to the seminars and be ready to discuss their findings. The final examination will include written questions and microscopic examination of biopsy specimens. The final grade will be based on performance on the final exam.

Surgical Pathology II, III and IV. Requirements for these courses are four months service on the duty roster with a **minimum** of 100 cases for each class and participation in surgical pathology rounds. Attendance and participation in mystery slides seminar is mandatory. Students must independently review the cases prior to the seminars and be ready to discuss their findings.

Casebook. Students should keep a simple log of cases, with a list of completed cases with diagnosis.

Autotutorial Set: Autotutorial set of liver diseases and dermatopathology are available for students enrolled in Surgical Pathology III and IV respectively.

Service. Service will be scheduled on the monthly duty roster. Surgicals should be trimmed by 3:30 p.m. each day. Normally slides are available about 11:30 the following day (cover slips are not yet dry). Examinations should be completed and given to the supervising pathologist with 24 hours from the time histological slides are received.

Examination. The final examination in each course will include written questions, microscopic examination of biopsy specimens in the format of ACVP exam. The final grade will be based on performance during the course and the final examination.

Review of Slides and Diagnostic Reports. Slides with completed diagnostic reports should be given to the supervising pathologist for review.

Weekly rounds will take place at the multi-headed microscope. Precise times will be arranged at the beginning of each Quarter.

Non-neoplastic Skin Diseases. Drs. Myers and Kerr are involved in dermatopathology diagnostic services. All students enrolled in MSc with diagnostics are strongly encouraged to participate in Dermatopathology Rounds.

Ophthalmology Rounds: These are held Friday mornings at the multiheader microscope. All students registered in Surgical and Mammalian Pathology courses are expected to attend.

Guidelines for Making Gross and Histologic Descriptions: please see instructions for Mammalian Pathology courses

Protocol For Surgical Cases

1. Graduate students taking Surgical Pathology should have cases trimmed by 3:30 p.m. to ensure that tissues will be processed that day. The duty schedule is prepared monthly and conflicts with other classes can be avoided if commitments are made known to the coordinator ahead of time; otherwise students are expected, as far as possible, to exchange duty with each other to maintain the schedule. Please notify the Graduate Student Supervisor (GSS) immediately if you are unable to meet a duty commitment and cannot find someone with whom to exchange duty.
2. Slides are available late in the morning (around 11:30 a.m.) of the following day. Slides should be examined promptly: histological findings, morphological diagnoses and comments for each case are to be entered in the PDS computer program and reviewed with the GSS at the two-header microscope. **It is important to remember that the cases used in the Surgical Pathology courses are part of the diagnostic service offered by the Prairie Diagnostic Services and that clients have every right to expect good service, including prompt completion of cases.** In certain instances, where results of ancillary tests are incomplete and may take some time, cases may be finalized and a supplementary report issued at a later date. A weekly review of surgical pathology cases (VT PA 830-833) will be done at the 9-header room.
3. Students are assigned to necropsy and surgical duty with time in between to complete cases. All cases must be completed before the next duty assignment begins. Failure to finish cases in a timely manner may result in a student being temporarily removed from the duty roster and this may, in turn, jeopardize completion of diagnostic courses.
4. Surgical Case Log sheets (Purple Sheets) are available in the trimming room. Purple Sheets should be used to keep track of cases and should be handed to the GSS along with the slides and completed cases.

Please refer to course syllabus for detailed information regarding any of the diagnostic courses listed here.

Clinical Pathology VT PA 850-853

Requirements for students enrolled in the VT PA 850 courses

These courses are devoted to diagnostic medical interpretations in clinical biochemistry, hematology, urology and cytology. Interpretation of clinical material is supplemented with formal case discussions and directed reading.

VT PA 850.3 Diagnostic Clinical Pathology I

Assist the clinical pathologist on duty for five shifts (morning or afternoon) per week for eight weeks. During those weeks prepare and present cases during the clinical pathology rounds. During the remaining weeks of the semester, attend the weekly rounds in clinical pathology. Submit written descriptions of glass slides and written summaries of biochemistry interpretations to the clinical pathologist responsible for the rounds. Attendance and participation in mystery slides seminar is mandatory. Students must independently review the cases prior to the seminars and be ready to discuss their findings.

VT PA 851.3 Diagnostic Clinical Pathology II

Attend all VT PA 346.3 lectures. Serve as an instructor in the VT PA 346.3 laboratory periods. Prepare and deliver the laboratory talks in VT PA 346.3 in consultation with the course instructor. Prepare and grade laboratory quizzes. Prepare cases to be used in case discussions during laboratory periods and be prepared to conduct the discussions. Conduct tutorial sessions as requested.

Assist in grading portions of the midterms and final examination. Attend the weekly rounds in clinical pathology. Submit written descriptions as for VTPA 850.3. Attendance and participation in mystery slides seminar is mandatory. Students must independently review the cases prior to the seminars and be ready to discuss their findings.

VT PA 852.3 and 853.3 Diagnostic Clinical Pathology III and IV

Serve as the duty clinical pathologist for four weeks (secondary pathologist for 852; primary pathologist for 853). Conduct the weekly rounds in clinical pathology for the week following the week on duty. Attendance and participation in mystery slides seminar is mandatory. Students must independently review the cases prior to the seminars and be ready to discuss their findings. Participate in the instruction of students enrolled in VT PA 850.3. Students in 853 are required to provide Saturday service the weeks they are on duty.

Please see university calendar for the other courses offered by the Department of Veterinary Pathology.

Graduate Registration in Undergraduate Classes

Master's and Diploma students may register in undergraduate classes as part of their graduate programs of study with approval of their GAC. Doctoral students are not normally permitted to register in undergraduate classes as part of their programs of study. Please refer to the CGPS's Policy and Procedure Manual for limitations and conditions. Graduate students who register in undergraduate classes as part of their graduate programs of study approved by the CGPS will have the tuition for these classes waived. Graduate students will be charged tuition for any classes, at any level, not on an approved program of study.

Graduate student glass slides

Personal collections of glass slides from diagnostic cases create problems. The slides are not available to others who may need them for a variety of reasons. Also the PDS histology staff may be overwhelmed when slides are returned and whole drawers of slides may have to be rearranged to accommodate those that have not been filed regularly.

Please ensure that glass slides are returned to the filing room, as soon as your case is finalized.

GRADING OF GRADUATE COURSES IN VETERINARY PATHOLOGY

This memo is to make clear the method of grading within the graduate-level diagnostic courses in Mammalian, Surgical Pathology and Clinical Pathology (i.e. VT PA 820, 821, 822, 823; VT PA 830, 831, 832, 833; VT PA 850, 851, 852, 853) and to ensure, as far as possible, uniformity in grading despite the number of different instructors involved.

Each level of these courses is a **single course with specific expectations**. Grading should, therefore, reflect the level of performance of a student within each specific course and not be viewed as part of a continuum extending over all four levels at which these courses may be taken. Marks should be awarded in accordance with the descriptors set out in the grading sheets. These courses build on each other and there is an expectation of overall improvement in diagnostic capabilities from one stage to the next. For a student going on to the next course, it follows that **the marks earned depend on performance in relation to expectation at that level,** e.g. 75-80% at all four levels reflects a good performance with genuine improvement keeping pace with course expectations, whereas if diagnostic skills remain at a rudimentary level, then this will be reflected in declining marks and conversely, for superior performance, the marks will be increasing.

MINIMUM GRADES FOR GRADUATE COURSES

In accordance with the College of Graduate Studies and Research regulations:

- **For Master's students a minimum final grade of 60% is required to pass each course, and a cumulative overall average of 70% is required.**
- **For PhD students a minimum final grade of 70% is required to pass each course, and a cumulative overall average of 70% is required**

In addition, a **cumulative overall average of 70% is required to ensure IPGF funding** for eligible students.

Should performance fall below this level, the Department faculty would meet to assess progress and make recommendations accordingly.

If at any time you have concerns regarding your graduate courses or program, we encourage you to discuss these as soon as possible with the course coordinator(s) and/or your supervisor. Also the Department Graduate Chair is always available to provide advice and assistance to you throughout your program.

EVALUATION BY GRADUATE STUDENTS OF GRADUATE COURSES AND INSTRUCTORS

At the end of each term, after final grades are submitted, all Veterinary Pathology graduate students will be asked to evaluate their graduate courses and instructors. You will receive from Angie, an email survey invitation with a link to an evaluation form for each course you were enrolled in for that term. There are two parts to the survey – one evaluates the course itself – the other evaluates the instructor(s). There will also be a separate link attached for any additional instructors participating in the course. Please click on submit at the bottom of each survey upon completion.

The information provides valuable constructive input on how the course(s) and instruction could be improved to better deliver our Department graduate programs. In addition the feedback received from

graduate students may be used in promotion, tenure and salary review processes for faculty and for merit consideration for clinical associates.

The feedback you provide is confidential; these forms are not seen by the course instructor(s). They are reviewed by the Department Head, data are tabulated, and feedback to the instructor is delivered in tabulated format.

RESOURCES AVAILABLE FOR ACVP BOARD EXAM PREPARATION

1. Armed Forces Institute of Pathology Wednesday Slide Conference- 1981-present - located in Room 1668, double-headed scope room
2. American Society for Veterinary Clinical Pathology Annual Slide Review- 1985-present - located in Room 1573 Clinical Pathology Learning Centre
3. Noah's Archive - website access available
4. ACVP Mock Exams/Slides - see Hélène Philibert
5. Avian Histopathology Slide Sets - located in Room 1662, Grad Student Computer Room
6. Laboratory Animal Histopathology Slide Sets - located in Room 1668, double-headed scope room
7. Western Conference of Veterinary Diagnostic Pathologists Slide Sets - 1972-present) - located in Room 1668, double-headed scope room
8. Surgical Pathology 1, Liver Diseases, Nervous System Slide Sets - located in Room 1662, Grad Student Computer Room
9. C.L . Davis Foundation DVDs - located in Room 1664
10. Ted Clark Image Collection

FINANCIAL SUPPORT

Supervisors shall ensure adequate stipend support for graduate students under their supervision – at least $18,000 / year for the first two years of MSc program and $20,000 / year for the first four years of PhD program. If students do not complete the program on time, the stipend may not be available after 2 years for MSc and 4 years for PhD students. Students must inform supervisors of awards won and any other alterations in funding or alternative income.

VACATION, DAYS OFF, AND MID-TERM BREAK

Graduate Students and Senior Residents supported by scholarships and/or fellowships in the Department of Veterinary Pathology are entitled to a **total of fifteen vacation days per 12-month period**, beginning on the start date of their graduate program.

In addition, graduate students are **granted the three days between Christmas and New Year's** (these are the days not already identified as statutory holidays), when the University is normally closed to the public. These days may not be taken retroactively or used at any time other than the specified time period.

The mid-term break for undergraduate students does not apply to graduate students, senior residents, faculty or staff. If graduate students choose to be away during that time, this would be counted as part of his/her annual vacation.

Students planning to take vacation days should so inform both their supervisor and graduate chair in writing in advance of the planned absence (for Senior Residents notify the graduate chair as above). In addition graduate students are required to notify the office about planned absence.

If vacations are not taken for the particular academic year they are lost (**take it or lose it**). They cannot be transferred/accumulated from one year to another. If vacations are not taken during the program supported by scholarship/fellowship, there is **NO** financial compensation in lieu of vacation.

It is the responsibility of each graduate student and senior resident to adhere to the Departmental vacation policy as stated.

Leaves of absence are available to students for compassionate, medical, parenting, educational, and 'Co-op Program'/Industry reasons. Reasonable accommodation is expected to be made. Leaves of absence from CGPS are normally granted in four-month blocks only, to coincide with the registration terms, except in the case of maternity, adoption and parenting leave, which may be granted for up to twelve months at once. A maximum of three (3) registration terms of leave totaling one year may be granted to a student, after which the student is expected to either re-engage in his/her program, or withdraw.

The Head of the academic unit or Graduate Chair has the authority to approve a first-time leave request of up to 4 months for compassionate or medical reasons. For maternity, parental or adoption reasons, the leave may be approved for up to 12 months immediately following a birth or adoption. Short-term leaves of less than one month shall also be managed within the home academic unit. Extensions to the initial leave period must be approved by CGPS.

The Dean of the CGPS, or his designate, will consider any petitions from students whose request for leave has been initially denied by the academic unit.

The leave period is not included in the time period for completion of the degree, and tuition is not assessed during the leave. While a student is on leave, all supervisory processes are suspended. In most cases, financial support offered to the student as a full-time, fully-qualified student is not available to students on leave.

GENERAL INFORMATION

Below is some important departmental information that will help orientate you to the department and familiarize you with some established policies, procedures and accepted protocol. If you have questions or concerns about any of these items or something that is not listed here, please let us know and we will be pleased to assist you.

EMAIL

The University of Saskatchewan provides email service to all students, in the format of the student's NSID + @mail.usask.ca (such as abc123@mail.usask.ca). The University uses this email service for all official communications with students

Within the Western College of Veterinary Medicine, as a graduate student in the Department of Veterinary Pathology, for all email correspondence, you will be expected to use the standard generic email format, of firstname.lastname@usask.ca. To create this format, you will need to log into My Information Technology Services (MITS) via https://mits.usask.ca/login.seam with your NSID and password, then select Aliases from the menu bar on the left hand side of the screen and follow the instructions. Ensure you Save your change. Once you have completed the setup, email vetpath.gradstudies@usask.ca with a test email. Once this is completed, your name will added to the department and college email lists.

TELEPHONES

Telephones in graduate student or senior resident offices are shared phones for the use of all occupants. As a departmental policy, **voice mail** is not applied on these office telephones. If you have requests or questions regarding telephone usage, please direct these to the department office.

COMPUTERS

Computers in the department computer room are intended for use only by members of the Department of Veterinary Pathology. Ian Shirley is in charge of this service. Under no circumstances are any of the Department's software programs to be copied and used in any way that contravenes licensing and copyright restrictions. In addition, no illegally-obtained software programs are to be used on any department unit.

ABSENCES

You are required to **let office staff know when you will be absent from the department** (sick, on vacation, days off or away, meeting or conference, if you are working at home please let us know) and ensure that your supervisor is informed of your plans. If you are going to be away for an extended period of time, it might also

be helpful to place an Auto Reply message on your email. This can be accessed by logging into My Information Technology Services (MITS) at:
https://mits.usask.ca/login.seam

KEYS

Upon your arrival in the department you will be issued **keys** to use while in this department. These are your personal keys not to be loaned or given to anyone else. Each of your keys will have your personal key code stamped on it, which is a security measure taken by the University of Saskatchewan so your keys can be traced back to you should they be lost. All keys must be returned to the office at the end of your program.

SECURITY

Security in the College and the Department is of great importance. Every year there are a number of thefts and break-ins which result in the loss of equipment and/or personal property. **Always** lock your valuables, wallet, backpack, lap-top, etc., in a drawer or locker. **Never** leave them lying about or in plain view - it only takes a moment for someone to enter your office and remove them. After hours, **always** ensure that you have locked all doors behind you, e.g. computer room, labs, offices. **Never** leave outside doors ajar and ensure that they are properly closed and locked behind you.

Safety programs offered by the University of Saskatchewan can be found:
http://students.usask.ca/health/safety.php#Programs
University of Saskatchewan Protective Services contact information, reporting a crime and emergency notification sign up can be found:
http://www.usask.ca/protectiveservices/index.php

CAMPUS MAIL

M**ail** pick-up and delivery is once daily, in the afternoon. Your individual mailbox is located in the department copier/supply room. This department also provides delivery of all inter-college mail to departmental mail boxes in the Dean's Office once a day. Any stamped and addressed outbound mail off campus can also be left at the front office for delivery.

CONCUR TRAVEL AND EXPENSE

When you travel on University related business, you are required to complete an online Travel Request through Concur for insurance purposes. To be reimbursed for travel expenses, please complete an online Concur Travel Expense claim and submit it within 60 days of your travel. If you have questions about travel, please enquire at the department office.
Concur Travel and Expense can be accessed via the ***Admin Services*** tab in **PAWS**.

PAYROLL

Questions regarding payroll or accounting questions should be directed to the department office.

COMMUNICATION & AWARDS

When you submit research grant applications, etc., or receive other pertinent correspondence on such applications or receive awards while in your graduate program, a copy for your graduate program file should be brought or sent to the department office. Further, please also provide a copy of your PAWS class registration once you have completed it. We also require copies of program change forms, etc.

STATIONERY

Stationery supplies are located in the stationery supply room. If you do not find what you need, please discuss with someone in the department office. All stationery requests should be brought to the department office and ordered through the office to ensure that you receive the appropriate discount and rebate available to us. If there is something you need that is not in the stationery supply room, take a look at the following link and we can try to special order it for you: http://www.supremebasics.com/basicsbrand.html

LIBRARY

You are expected to pick up and return your own library material. The WCVM Library is located on the 3rd Floor.

LAB SUPPLIES

Questions regarding ordering and purchasing of lab supplies, equipment, etc. should be discussed with your supervisor and directed to Betty Lockerbie or Igor Moshynskyy, our department research technologists.

UNIVERSITY OF SASKATCHEWAN – STUDENT IDENTIFICATION CARD

As a University of Saskatchewan student, you will require a student identification picture card. This card will give you access to all libraries on campus, facilities at the Physical Activity Centre (PAC), residence (if you are staying on campus) as well as to other campus services, student functions, etc.

In order to receive a University of Saskatchewan student card, you must first be registered as a graduate student, and confirmation of your registration must be available on PAWS. You may then go to the Campus ID Card Office (located in Room 280 of the Administration Building from mid-August to mid-September) or to the Campus Bookstore (located on the ground floor of Marquis Hall - for the rest of the time), between the hours of 8:30 a.m. and 4:30 p.m. You will have your picture taken, and be issued the student card at that time.

WESTERN COLLEGE OF VETERINARY MEDICINE IDENTIFICATION CARD

The WCVM Identification card can be arranged through your department administrator if required.

PARKING

Policy updated: May 2015

The U of S Parking Office designates the parking policy for graduate students as follows:

Graduate students do not qualify to park in staff lots at any time. If they are paid by scholarships and not through payroll, they are considered students and must apply for student parking as do all other students. Stadium Parkade permits are available to purchase throughout the year.

There are a number of parking lots (approximately 1200 spaces) allocated for student parking at or near the University of Saskatchewan. In July and August (annually), the Student Parking Sale is conducted through PAWS as an Online Sale. A successful ballot wins the privilege of purchasing parking in a preferred choice of lots randomly selected by the online draw. Ballots are available July 1 until 4:00 pm August 21, 2015. If they are not successful in the on-line sale, they use whatever other legal options are available to them as a student. They are not eligible for special consideration in staff lots.

If extended hours are required, night permits are available at $50 plus GST per term which allows parking in all non-gated lots as follows:

After 4 pm, student lots S and Y only

After 5 pm non-gated staff lots such as V, Q, H, HA, F, etc., to name a few. Night permits are not valid for R lot, G lot, or at meters.

Valid staff permits also work as night permits in all non-gated lots (and permission can be obtained from Parking Services for gated lots).

Valid student permits act as night permits in all non-gated lots as above.

The practice of assigning students parking spots in staff lots is in direct contravention of bylaws.

For more information please visit the Parking & Transportation Services website at:
http://parking.usask.ca

You may also apply for student parking at the Parking Office, or use pay-parking lots or metered parking. Parking space on campus is always scarce, so use of public transportation is also an option.

INTERNATIONAL STUDENT AND STUDY ABROAD CENTRE

The International Student and Study Abroad Centre (ISSAC) is a resource and campus partner for all students, staff, and faculty. ISSAC is dedicated to fostering a welcoming, globally aware and engaged campus community. https://students.usask.ca/international/issac.php

Ihaveaplan.ca

http://www.ihaveaplan.ca/rte/en/UniversityofSaskatchewangraduatestudentsGSA_DownloadCentre_EnrolmentForm

ihaveaplan.ca
A Plan for your everyday adventures

MULTIPUROPOSE XEROX / SHREDDER

A multipurpose Xerox machine, as well as a shredder, are located in the department supply room. If necessary, please ask for initial instruction on the equipment, from the office staff. The Xerox can copy, fax, scan to email.

PHOTOGRAPHY

Gross Photography

All graduate students are encouraged to take pictures of lesions encountered while performing necropsy. You are encouraged to collect your own personal file plus add to the departmental database of valuable teaching and research material. Any digital image captured from all available sources is requested to be submitted with filing. To do this there is a proper procedure to be followed in the entry of required data that can be retrieved and or searched at a later date.

(a) Equipment

A **PATHSTAND** Digital copy stand camera system is available in the gross photography area of the PDS necropsy laboratory (Room 1702).

This system uses a step by step procedure to capture high quality, proper illuminated and color balanced images from 2" to 30" field of views. Scale bars, arrows, annotations etc. can be added and saved with the image. This metadata is stored with the image on the college database. Simple measurements can be done on the live images or again on the images retrieved at a later date from other computers in the department with the database software. (Larhonda: larhonda.sobchishin@usask.ca)

Graduate students are encouraged to learn this camera system and take their own pictures so that: 1) they learn how to take good pictures, and 2) they can use their own material in seminars and presentations. Technical support staff in Necropsy should be familiar with this new camera system; also Larhonda : larhonda.sobchishin@usask.ca is also available and happy to provide assistance at any time.

PORTABLE CAMERAS:

For larger specimens and those specific in situ shots that cannot be brought to the Pathstand, there is a handheld digital camera which can be obtained from staff in necropsy.

Microscopes and Photomicrography

Each graduate student must be familiar with the operation of the microscopes. If one requires anything beyond the routine microscope setups provided for specific research applications etc. see Ian.

During the year each graduate student will become familiar with the operation of the various different photomicroscopes in the department. The department has many different digital systems. The various microscopes are set up for basic bright field and polarized light. Fluorescent, Sterio and inverted microscopy camera systems are also available.

Any digital image, photomicrographs, kodachomes etc. that are to be filed to the database, must have the proper data entered with it. To ensure this is done, a form is filled in and submitted to Ian to be logged with image to the database. This is similar to the procedure followed in the same manner as gross photographs taken on the Pathstand in necropsy lab.

It is very important that any digital images taken, whether on personal or department equipment, be submitted for filing to the database. It is these images that one might be looking for in the near future. If entered properly at this point they will provide searchable, valuable teaching, diagnostic and research material.

Plans are ongoing for a Pathologist to have access to these stored images associated to the specific case through next generation PDS software.

Other Photography and Graphics Services

The department offers a range of photography services to its members. This includes production of digital images from various sources - 35mm slides, subgross histo microscope glass slide, flatbed scanning, photo-copies of diagrams, etc. from books and electron micrographs. The department has a Faxitron Xray unit to radiograph/xray smaller samples up to 8X10 inches format and capture digital radiographs accessible from in-house computers. Rm 1702 Necropsy or 1664 Lab – Angie or Ian for assistance

Graduate students are expected to prepare their own presentation material with equipment available in the department. Assistance with production of publishable presentations, graphs and posters is provided by the EM and Photo Lab using specialized computer software like Photoshop, Prism etc. Last minute requests in preparation for seminars are discouraged. There is no charge for these services when done for departmental functions. Grant money should be used where available.

Once digital images have been captured, there are also various image analysis programs available on various work stations to perform enhancement, analysis, measurements and counts.

WCVM has gone the direction of virtual microscopy and the scanner is located in room 1634 in Veterinary Pathology. This new technology has specific advantages over regular microscopy in certain ways that we are still discovering. With a virtual image one has replaced the microscope on the desk with a high quality digital image that is viewed with the computer monitor in front of you.

WCVM has implemented Virtual for mainly teaching over the past couple of years. Now as a result of capturing such high quality digital images, data collection and analysis can also be done for research and experimental projects.

Olyvia is the software used to view these digital images. One can download to computers and look at images from both on/off campus.

Mac users are required to use a web based viewer software to view the images stored on the database.

Within the Department, images are scanned for Mystery Slides, exams, and those that appear on the Interesting Case Board are also available for previewing. This new technology makes it possible to share images with anyone/anywhere with access to the internet.

Additional information

Please see the following links and/or appendices for more information:

Appendix 4 - Courses offered by the department

Appendix 5 – Potential courses to be considered for biostatistics

Appendix 6 - CGPS information regarding registration, courses, tuitions, etc.

APPENDIX 1 - GRADUATE STUDENT PROGRESS REPORT

(Research Advisory Committee Update)

Instructions:

This report is to be completed by the graduate student, with assistance from the supervisor, and electronically submitted to Angie as well as all members of the research advisory committee (RAC) at least 7 days prior to the committee meeting.

New students are to complete sections 1-13 to the best of their ability. Sections 14-15 will be completed by more senior students MSc and PhD in preparation for their thesis.

Sections 16, 17 and 18 must be updated by all students for each meeting. These will assist the RAC in determining if the student is making sufficient progress.

As research progresses, appropriate sections should be updated. To assist RAC members in monitoring research progress, please track all changes made for each committee meeting.

Note for MVetSc students: the document pertains to your diagnostic training and research project.

1. Date of report:

2. Name:

3. Program:

4. Title of research project:

5. List of members on research advisory committee (RAC):

Name	Department	Role	Email address

6. Program dates:

Start date of graduate program:

Projected end date of graduate program:

7. A program of studies* (a list of courses and credit units approved by committee):

Course code	Course title	Credit units	Year/Term	Grade

*Required program credit units: MVetSc = 30; MSc = 9; PhD = 6

Mandatory Registration Requirements:

	MVetSc	MSc	PhD
VTPA 992 - Project	at all times		
VTPA 994 - Research		at all times	
VTPA 996 - Research			at all times
VTPA 980 - Clinical Practice	at all times		
VTPA 990 - Noon Seminar	T1, T2	T1, T2	T1, T2
GSR 960 - Intro to Ethics and Integrity (must complete in T1 of first year) *			
GSR 962 – Ethics and Integrity in Animal Research (must complete in T1 of first year)*			
Lab Safety, Biosafety, Safety orientation for new employees training (must complete in T1 of 1st year)*			

* Provide certificate copies to Angie for file

8. Titles and dates of Vet Path 990 (research and diagnostic) seminars

Date of seminar	Title	Feedback given: Yes or No (summarize briefly feedback for research seminars)

9. Funding source for research project(s):

10. Funding source for personal support:

11. Background, relevance and justification for proposed research (maximum 1 page including references):

12. Research hypothesis and objective(s) (overarching – encompassing entire thesis for MSc and PhD students):

13. Animal care protocol number(s) and faculty applicant:

14. Description of research:

This section is to be updated for each committee meeting. For students starting their program, this section must be completed by their first committee meeting and should reflect their intended research plan over the duration of their program. For results, state the anticipated results of research proposed.

Each project/chapter/experiment will likely result in separate manuscript although not all will be necessarily submitted for publication, or more than one experiment may be combined into a single published paper.

General guidelines:
MVetSc research project should generate 1 publication/paper
MSc research program should generate 2 experimental chapters in the MSc thesis that are both unique and independent (plus Lit Review and Gen. Discussion).
PhD research program should generate 3 or more chapters that are unique and independent which collectively contribute to a novel body of work (plus Lit Review and Gen. Discussion)..

14a. Experiment/Chapter 1 (Abstract format– maximum one page):

Intro/justification:
Hypothesis:
Specific objectives:
Methods/experimental design:
Analysis (statistical, laboratory):
Results:
Conclusions:

14b. Experiment/Chapter 2 (Abstract format– maximum one page):

Intro/justification:
Hypothesis:
Specific objectives:
Methods/experimental design:
Analysis (statistical, laboratory):
Results:
Conclusions:

14c. Experiment/Chapter 3 (Abstract format– maximum one page):

Intro/justification:
Hypothesis:
Specific objectives:
Methods/experimental design:
Analysis (statistical, laboratory):
Results:
Conclusions:

15. General conclusions (brief summary – maximum one page):

16. Future research (brief justification based on the above results):

17. List progress made since your last committee meeting (or beginning of program for new students). Please complete in bullet form.

Period	Progress made in completing program of studies	Progress made in completing research

18. List your anticipated plans for the upcoming 6 or 12 months.

Period	Anticipated progress towards completing program of studies	Anticipated progress towards completing research

APPENDIX 2 - REGISTRATION FOR UCACS ANIMAL CARE COURSE

Except for graduate students, all other animal users (faculty, technicians, research associates, undergraduate students, etc) with an active U of S NSID are provided with access to the UCACS Animal Care Course. Individuals must first Log In to Blackboard with their active NSID and then self-register in the online course. https://bblearn.usask.ca/. Animal users are requested to complete the course within one month of registration.

If you have a NSID but it is not active, please contact the ITC Help Desk at 966-4817 or help.desk@usask.ca for assistance.

Registration and Log In: The UCACS Animal Care Course can be accessed as follows:

- From the University of Saskatchewan home page click on the "A-Z" and select "C"
- Scroll down in the directory to select: Course- Blackboard
- Click on "Log In to Course Tools (Blackboard)"
- Click on "Log In with U of S NSID" and enter your NSID and password when prompted.
- Once you are in Blackboard, remain on the main page and use this link: https://bblearn.usask.ca/webapps/blackboard/execute/enrollCourse?context=Course&command=SavedSearch&searchField=CourseName&searchOperator=Contains&searchText=ucacs&dateSearchOperator=LessThan&startDate=LessThan&course_id=_4503_1
- The access code for the course is online UCACS.
- Click on "Submit" when prompted at the next screen.
- A self-enrolled screen will appear once you are registered. Click "OK" in the bottom right corner.
- The course content will appear and you will have access to the course.
- Note: To access the course again, Log In directly to Blackboard. The middle box on the screen (U of S Course List) will contain courses you are registered for in the Blackboard system.
- Click on "ucacs_live: Non-Credit Experimental Animal Care and Use Core Course - (UCACS Animal Care Course". This will bring you to the main screen of the course where you can select which content to complete.

Through PAWS, the UCACS Animal Care Course can be accessed as follows:

- Log In with your NSID and password through PAWS and select the "Course Tools" icon (upper right).
- Select "Course List For... Course Assistants and Guests", which will bring you to the "My Courses" page in Blackboard.
- Remain on this Blackboard page and then use this link:
- https://bblearn.usask.ca/webapps/blackboard/execute/enrollCourse?context=Course&command=SavedSearch&searchField=CourseName&searchOperator=Contains&searchText=ucacs&dateSearchOperator=LessThan&startDate=LessThan&course_id=_4503_1
- The access code for the course is onlineUCACS.
- Click on "Submit" when prompted at the next screen.
- A self-enrolled screen will appear once you are registered. Click "OK" in the bottom right corner.
- The course content will appear and you will have access to the course.
- Note: To access the course again, follow the first two steps listed above. The middle box on the screen (U of S Course List) will contain courses you are registered for in the Blackboard system.

- Click on “ucacs_live: Non-Credit Experimental Animal Care and Use Core Course - (UCACS Animal Care Course”. This will bring you to the main screen of the course where you can select which content to complete.

If you have any questions or problems with the course, please email ucacs.office@usask.ca

APPENDIX 3 - COURSES OFFERED BY THE DEPARTMENT

The following is a list of courses offered by the Department of Veterinary Pathology. For more details about these courses please see the CGPS website http://grad.usask.ca/programs/veterinary-pathology.php

VTPA 810.3 — Clinical Hematology
VTPA 811.3 — Clinical Chemistry
VTPA 820.3 —Mammalian Pathology I
VTPA 821.3 —Mammalian Pathology II
VTPA 822.3 —Mammalian Pathology III
VTPA 823.3 —Mammalian Pathology IV
VTPA 830.3 —Surgical Pathology I
VTPA 831.3 —Surgical Pathology II
VTPA 832.3 —Surgical Pathology III
VTPA 833.3 —Surgical Pathology IV
VTPA 841.3 —Toxicologic Pathology
VTPA 850.3 —Diagnostic Clinical Pathology I
VTPA 851.3 —Diagnostic Clinical Pathology II
VTPA 852.3 —Diagnostic Clinical Pathology III
VTPA 853.3 —Diagnostic Clinical Pathology IV
VTPA 869.3 —Avian Pathology I
VTPA 871.3 —Avian Necropsy I
VTPA 872.3 —Avian Necropsy II
VTPA 873.3 —Wildlife Diseases
VTPA 875.3 —Diagnosis of Wildlife Diseases I
VTPA 876.3 —Diagnosis of Wildlife Diseases II
VTPA 898.3 —Special Problems in Veterinary Pathology
VTPA 899.6 —Special Problems in Veterinary Pathology
VTPA 980.0 — Clinical Practice
VTPA 990 — Seminar - weekly noon-hour seminar in which proposed and ongoing research and interesting cases in diagnostic veterinary pathology presented.
VTPA 992.0 — M.Vet.Sc. Project
VTPA 994 — M.Sc. Research
VTPA 996 — Ph.D. Research

APPENDIX 5 – POTENTIAL COURSES TO BE CONSIDERED FOR BIOSTATISTICS

Clinical Trial Design and Analysis - 22308 - VLAC 881 - 02

Experimental Design and Statistical Analysis for the Natural Sciences (VBMS 880.3)

Biostatistics I - 26513 - CHEP 805 - 01

Elementary Statistical Concepts - 80801 - STAT 244 - 01

Biostatistics for Public Health - 23399 - PUBH 805 - 02

Biostatistics for Public Health II - 24622 - PUBH 811 - 01

APPENDIX 6 - CGPS INFORMATION REGARDING REGISTRATION, COURSES, TUITIONS, ETC.

https://www.usask.ca/cgsr/for_students/registration.php

Registration

Complete instructions on registration are available at:

http://students.usask.ca/academics/classes.php You will not receive a printed copy of your class registrations. Please confirm your registration through PAWS.

Thesis students must register in 990, and in 994 or 996.

- 990 seminar course *(according to program requirements)* and
- You must be registered in every term for either 994, if you are in a Masters thesis program, OR, 996, if you are in a Ph.D. program.

Project and course-based students taking at least 6 credit units of course work in a term and all thesis students will be considered full-time. There is no part-time option available for thesis students.

https://students.usask.ca/academics/classes.php#Registrationdeadlines

Tuition and Student Fees

https://students.usask.ca/money/tuition-fees/graduate-tuition.php#TuitionratesSept2018Aug2019

https://students.usask.ca/money/tuition-fees/graduate-tuition.php#Studentfees

Thesis Tuition Reduction Policy

https://students.usask.ca/money/tuition-fees/graduate-tuition.php#TuitionandFeeNotes