

2022



Department of Veterinary Pathology Graduate Student Handbook

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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 ten members of academic faculty, 4 clinical associates, 22 adjunct faculty, and five members of support staff.

The department, part of the University of Saskatchewan's main campus, is situated on Treaty 6 Territory and the Homeland of the Metis.

THE PURPOSE OF THIS HANDBOOK

This handbook is a quick reference to important university regulations and a source for information specific to the Department of Veterinary Pathology. The handbook contains many hyperlinks to additional information. Please report errors, broken hyperlinks or suggested revisions to:
angela.turner@usask.ca

MISSION STATEMENTS

The mission, vision and values of the University of Saskatchewan can be found here:
<https://www.usask.ca/about/mission-vision-values.php>

The mission of the Western College of Veterinary Medicine is "...to provide veterinary education in Western Canada and to act as a centre of veterinary expertise and research." An overview of the WCVM can be found here: <https://wcvm.usask.ca/the-college/about.php#Overview>

Prairie Diagnostic Services Inc. is dedicated to providing client focused veterinary diagnostic services and expertise in support of animal health diagnostics, research, teaching and surveillance. Additional information can be found here: <http://pdsinc.ca/Home.aspx>

The Department of Veterinary Pathology is engaged in high quality instruction to undergraduate and graduate students; leadership and participation in research and other scholarly activities in the general area of veterinary pathology and the profession; and provision of diagnostic service in anatomic and clinical pathology. Learn more about the department here: <https://wcvm.usask.ca/departments/vet-pathology.php#Welcome>

STUDENT CONDUCT

University Council provides policies and guidelines that govern the conduct required from graduate students. There is an onus on every graduate student to be informed on what does and does not constitute misconduct by being familiar with the document at : <https://cgps.usask.ca/policy-and-procedure/conduct-discipline/academic-integrity.php#141STUDENTCONDUCT>

GENERAL INFORMATION ABOUT THE DEPARTMENT OF VETERINARY PATHOLOGY

The Department values and actively engages in:

- undergraduate student teaching,
- graduate student teaching and training,
- veterinary diagnostic pathology, and
- research and scholarly activity related to the cause and effects of diseases in animals.

All of these activities are intertwined with different members of the department fulfilling different roles.

Undergraduate student teaching is central to the existence of the college, is delivered by faculty who are highly qualified veterinary diagnostic pathologists, and supported by a busy diagnostic service. Graduate student teaching and training is focused on research, diagnostic training, or both, and is provided by the same, relatively small, group of faculty with contributions from adjunct faculty working for Prairie Diagnostic Services, Inc. Both undergraduate student teaching and graduate student training provide veterinary diagnostic pathology services to the public, veterinary practitioners, and others concerned with animal health and disease. Research and scholarly activity are university priorities with the discoveries and knowledge generated providing insights into animal disease that are shared with both undergraduate and graduate students and incorporated in diagnostic service.

Graduate training is an exercise in self-discipline. While considerable 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 resources, various sources of information available on-line and within the department and college, and to seek opinions from members of this and other departments. Interaction with other people is a valuable 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 policies, procedures and general expectations of the College of Graduate and Postdoctoral Studies (<https://cgps.usask.ca/>). For example, one should know the number of classes required for a given degree, residency requirements, etc. Department members must respectfully share space, facilities and equipment; keep offices, common work areas, and seminar rooms tidy, place covers on microscopes, lock doors, etc., when not in use. These little things make life easier for everyone. A good practice 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 does not hinge on any one individual, but rather, is dependent on all members working together towards a common goal. We aim to exceed the expectations for ethical behavior in the teacher-student learning environment at the University of Saskatchewan as outlined by the Guidelines for Academic Conduct (<https://secretariat.usask.ca/governance/guidelines-for-academic-conduct.php#About>).

GRADUATE PROGRAM ADMINISTRATION

The College of Graduate Postdoctoral Studies (CGPS) is responsible for the overall administration of graduate programs at the University of Saskatchewan (<https://cgps.usask.ca/>) . Please take time to review the Policies and Procedures of the CGPS (<https://cgps.usask.ca/policy-and-procedure/index.php>).

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 exams, conditions for transfer of students from MSc to PhD programs, and nominations for scholarships and awards.

Administrative Staff

Graduate Chairs:

Andy Allen – Graduate Chair for Diagnostic Programs

Bruce Wobeser – Graduate Chair for Thesis Programs

Role of Graduate Chair: The graduate chair offers information and advice regarding the application of the policies and procedures of the department and the CGPS. In so doing, the Graduate Chair will ensure consistency among graduate programs and Advisory Committees that ensure the maintenance of departmental standards. The Graduate Chair is an advocate for the graduate student and should be the first person that a graduate student consults if issues arise that cannot be resolved with the supervisor. Administratively, the Graduate Chair is responsible for ensuring that Advisory Committee meetings occur on a regular basis, chair the meetings, ensure the CGPS progress report is completed, and oversee qualifying and comprehensive exams, as well as program and thesis defenses. The Graduate Chair, often with the assistance of the Graduate Program Coordinator, acts as liaison between the department and the CGPS.

Graduate Programs Coordinator: Angela Turner

Administrative Assistant: Tyler Moss

Role of Graduate Programs Coordinator: The Graduate Program Coordinator provides administrative support and guidance on procedural matters related to the department, graduate programs, CGPS requirements, and graduate student support. The Graduate Program Coordinator is responsible for scheduling Advisory Committee meetings, exams and defences; maintaining and submitting the appropriate forms and reports to the CGPS; and assisting in recruitment of new graduate students.

Role of Administrative Assistant: The Administrative Assistant provides direct support to the Head of the department, as well as to faculty, staff and students, as needed. The primary function of the position is to provide support on matters regarding Human Resources, Payroll, Finance and general operational functions of the department.

Advisory Committee

As soon as possible following a graduate student's first registration in a program, an Advisory Committee, including the supervisor, should be named. Responsibility for naming additional members of an Advisory Committee lies with the Graduate Chair, in consultation with the graduate student and supervisor. It is the responsibility of the Advisory Committee to assist students in course selection and definition of the research area, provide support and advice, evaluate regularly the student's progress by

meeting at least once yearly, take appropriate and timely action in view of this progress, and keep records of this evaluation and all actions taken.

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. The Advisory Committee also plays an important role in assessing student performance in qualifying and comprehensive exams, and at the thesis defence.

Advisory Committee Membership:

<https://cgps.usask.ca/policy-and-procedure/Academics/Programs/supervision.php#31ADVISORYCOMMITTEE>

Supervisor

The supervisor guides the research. They are responsible for providing supportive advice and discussions about the research, assistance with research design, and for timely review of research proposals, manuscripts and drafts of the thesis. 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 certification by the examining board within your discipline. Some students may have two co-supervisors: one to oversee the program and diagnostic training and another to guide the research. Your supervisor is accountable to the university and any granting agency for the research you undertake. The supervisor also records the minutes of the Advisory Committee meetings and circulates them to the graduate student and members of the Advisory Committee within 5 days of the meeting. The mentor-mentee relationship can unfold in many different ways and depends 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 their students, may desire a less formal 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 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 graduate 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 graduate 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 that of an undergraduate student.

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, Advisory Committee and the Graduate Chair will always be available to help with the student's program. Specific responsibilities of graduate students 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. Graduate students can request an Advisory Committee meeting at any time by contacting the Graduate Chair.

Graduate Student-Supervisor Agreement

All graduate students in the department will complete a CGPS Student-Supervisor Agreement in partnership with their supervisor. More information can be found at:

<https://cgps.usask.ca/policy-and-procedure/Academics/Programs/supervision.php#32STUDENT-SUPERVISORAGREEMENT>

Agreement Form: <https://students.usask.ca/documents/graduate/student-supervisor-agreement.pdf>

Advisory Committee Meetings

The purpose of Advisory Committee meetings is to assess your progress in terms of your program of study 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 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 any 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) presentation focused on your program of studies and research activities since the last committee meeting (unless you presented your research seminar at the department level immediately before the meeting). Again, review your presentation with your supervisor before the committee meeting. For new students, there may not be 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 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 to 12 months.

Research Seminar

Each students must present, on a yearly basis, a research seminar at the department level to inform the audience about their research progress and future plans. It may be ideal and most efficient to plan an Advisory Committee meeting to follow shortly after the seminar.

DEGREE-LEVEL REQUIREMENTS AND LEARNING OUTCOMES

Master of Science (MSc) Degree



This is an intensive research 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, and includes a number of courses. The MSc thesis can be written in either a traditional or manuscript style. Generally, the thesis will consist of a short abstract, a comprehensive literature review, at least two independent and robust research chapters connected by 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 Advisory Committee and an External Examiner. There are guidelines for Thesis Preparation provided by the CGPS (please visit the website resources <https://cgps.usask.ca/onboarding/blueprint/toolkits-for-success/thesis-roadmap.php#Unpacking>).

In this MSc program, students learn to conduct scientific investigation at an introductory level by carrying out research that has been designed together with the members of the Advisory Committee. Skills and knowledge to be acquired include, research and experimental design, laboratory techniques, gathering and analysis of data, writing and publication, and the use of library and other resources. These activities will result in the broad knowledge of the subject area with specific, in-depth knowledge 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, if veterinarians, may choose to spend additional time learning veterinary diagnostic skills, but the time required to acquire the research skills and expertise cannot be reduced or delayed to acquire the additional diagnostic experience. Combining diagnostic training with the thesis research during a MSc program should be discussed and approved by the supervisor and the Advisory Committee 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 to three years if done without diagnostic training.

Course requirements:

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

Anticipated timelines:

- MSc research proposal should be submitted and approved by the Advisory Committee within first 6 months of the program, but not later than 12 months.
- The expected duration of the program is 2 to three years and stipend support beyond 2 years is not guaranteed. Research should be completed within 20 months of entry into the program, with 4 months available to write and defend the thesis.

Master of Science (MSc) Degree with Diagnostic Concentration

The purpose of the MSc with Diagnostics program is to offer research training similar to an MSc program (described above) in combination with training in veterinary diagnostic pathology. This program is available only to students with a DVM degree or equivalent.

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.

Diagnostics: Diagnostic training is achieved predominantly through completion of clinical course work in diagnostic pathology (e.g., anatomic, clinical, wildlife, or avian pathology) with the possibility to supervise and teach during the final stages of the program. By the end of the program, graduate students should possess the skills required for an entry-level veterinary diagnostic pathologist. In addition, they should be well prepared to successfully complete the American College of Veterinary Pathologists (ACVP) exam. The MSc with Diagnostics is a three-year program (Note: ACVP eligibility generally requires three years of training).

The successful completion of an MSc with Diagnostics program is concluded with a defense of the thesis to the satisfaction of the Advisory Committee and an External Examiner.

Course requirements:

- 18 credit units of course work recommended and approved by the Advisory Committee. Students wishing to take additional courses can do so with the permission of their 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.
- A Saskatchewan Veterinary Medical Association license is required for diagnostic courses.

Anticipated timelines:

- The research proposal should be submitted and approved by the Advisory Committee within the first 6 months of the program, but not later than 12 months.
- The expected duration of the program is three years, and stipend support beyond three years is not guaranteed. The research should be completed within 30 months of entry into the program, with six months left for the defense and preparation for the ACVP exam.

Master of Veterinary Science (MVetSc) Degree

The MVetSc program is focused on obtaining the knowledge and skills related to diagnostic veterinary pathology by performing diagnostic work under supervision. The program is available only to students with a DVM degree or equivalent. Clinical course work in veterinary diagnostic pathology is the major component of study for all students. Students majoring in either anatomic pathology or clinical pathology may take courses to obtain limited experience in the other discipline, i.e., clinical or anatomic pathology, respectively. Students majoring in clinical pathology often also obtain training in surgical pathology.

In the wildlife disease option within anatomic pathology, students acquire knowledge, skills and experience relevant to the practice of wild animal pathology. The program uses the core activities of the Canadian Wildlife Health Cooperative, Western and Northern Regional Centre, for practical experience. (cwhc_rchc.ca)

The goal of the MVetSc program is to graduate competent, broadly trained veterinary diagnosticians in either clinical pathology or anatomic pathology. They should be well prepared for success with the American College of Veterinary Pathologists (ACVP) exams. (Note: ACVP eligibility generally requires 3 years of training.)

In the avian pathology option, course work would include the study of disease and pathology of poultry and other birds. Training is directed toward the successful completion of the certifying exam of the American College of Poultry Veterinarians (ACPV).

The MVetSc Degree is not a research degree. The research component of the program is relatively small. The research is intended to provide insights into the strengths and limitations of research methods and, thereby, foster critical evaluation of scientific information. Research projects for MVetSc students most often deal with problems in applied diagnostic veterinary pathology. Some may venture into the pathogenesis of disease but in depth, experimental studies exceed the intended scope of the research component of the program. Some students may choose to enroll in a PhD or Certificate in Veterinary Diagnostic Pathology program following completion of the MVetSc degree. The MVetSc degree is normally completed in two years.

The conclusion of the MVetSc program is marked by the satisfactory performance of the student during a Comprehensive Exam before the Examining Committee. The Examining Committee is composed of the Advisory Committee with additional members as appropriate. (Please see Policy on Comprehensive Exams for MVetSc Program.)

Course requirements:

- 30 credit units of course work recommended and approved by the Advisory Committee. Students wishing to take additional courses can do so with the permission of their 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.
- A Saskatchewan Veterinary Medical Association license is required for diagnostic courses.

Anticipated timelines:

- MVetSc research proposal should be submitted and approved by the Advisory Committee within the first 6 months of the program.
- The duration of the program is two years, and stipend support beyond two years is not guaranteed. The research project should be completed within the first 18 months of entry into the program, with six months left for writing and publishing the research paper, as well as preparation for the Comprehensive Exam.

Certificate in Veterinary Diagnostic Pathology (CVDP)

The CVDP (<https://grad.usask.ca/programs/advanced-veterinary-diagnostic-pathology.php>) is a degree level certificate program that provides veterinarians with prior training and demonstrated competence in various aspects of veterinary diagnostic pathology with an opportunity for additional, advanced training in veterinary diagnostic pathology under the supervision of experienced, highly qualified, veterinary diagnostic pathologist. Graduate students will achieve this objective through a single, year-long, nine-credit course -Advanced Veterinary Diagnostic Pathology-extending over three consecutive terms that is tailored to the individual graduate student.

The Certificate in Veterinary Diagnostic Pathology program is an excellent opportunity for veterinarians with an appropriate background to become eligible for, or further prepare for, the certifying examination of the American College of Veterinary Pathologists (ACVP).



Doctor of Philosophy (PhD) Degree

In the PhD program, the expertise and independence expected of the graduate student is much greater than in the MSc program. Independent research with guidance from members of the Advisory Committee 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, in addition to research. PhD students with a DVM degree may choose to engage in diagnostic pathology provided that adequate progress has been made on their research. Diagnostic training should not negatively impact the development of the skills and expertise needed 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 might be increased. Combined diagnostic and research training during PhD program should be discussed with, and approved by, the Advisory Committee.

Graduates should be ready to enter junior academic or research positions. They should know how to create testable hypotheses and be capable of independent research. Graduates will also have experience with the presentation of scholarly information at scientific meetings, or with 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 the 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 Exams) 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 completed in four years, unless it is combined with diagnostic training.

Course requirements:

- 6 credit units of course work recommended and approved by the Advisory Committee. Students wishing to take additional courses can do so with the permission of their Advisory Committee provided adequate progress has been made in their research.
- Completion of all non-credit courses required for this program.
- A Saskatchewan Veterinary Medical Association 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.
- The Qualifying Exam should be held within the first year.
- The Comprehensive Exam should take place after the completion of courses and, usually, after the PhD research has been initiated or close to completion. The latter is more common in the Department of Veterinary Pathology.
- Permission to write the thesis is granted by the Advisory Committee when there is general agreement that sufficient research has been carried out. This will normally occur after (1) all course work and required exams are completed, (2) the thesis topic and outline has been approved by the Advisory Committee, and (3) the results of the research are available.

Program of Studies

As early as is reasonable, but within the first year of a student's registration with the CGPS, 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 listed courses, passing the required exams, and successful defence of the thesis, where required, will result in the conferring of the degree. The Program of Studies can be revised as necessary.

Annual Progress Reports

The Chair of the Advisory Committee shall report to the CGPS at least once annually on the progress of every graduate 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 Progress Reports

A template for this report is sent to the graduate student after the date of any Advisory Committee meeting has been set. With assistance from the supervisor, the template is completed by the graduate student and circulated to members of the Advisory Committee, including the appropriate Graduate Chair and the Graduate Programs Coordinator, at least 7 days prior to the meeting. An example of the template appears as Appendix 1.

More information regarding the Program of Studies and progress reports are contained in the CGPS Policies and Procedures Manual, under Student Life Cycle (<https://cgps.usask.ca/policy-and-procedure/Academics/examinations.php>).

Qualifying and Comprehensive Exams

Qualifying and Comprehensive Exams are not required components of Master's degree programs. The Ph.D. Qualifying and Comprehensive Exams may be written, oral, or both. More information about these exams can be found in the CGPS Policies and Procedures Manual (<https://cgps.usask.ca/policy-and-procedure/Academics/examinations.php#63QUALIFYINGANDCOMPREHENSIVEEXAMINATIONS>)

The Qualifying Exam

The purpose of the Qualifying Exam, 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 PhD degree.

It has been the practice in the Department of Veterinary Pathology, for the Qualifying Exam to consist of a written component followed by an oral component. For the exam, each member of the Advisory Committee, with the possible exception on the Chair, identifies one or a few areas of study within the committee member's area of interest and expertise that has or have direct relevance to the program of research. At least 60 days before the written exam, each committee member provides the graduate student with a reading list. Then, the supervisor or Graduate Chair will assemble the written exam based on questions provided by committee members. The written portion of the exam is typically traditional in nature with the graduate student providing written answers while working alone and without accesses to reference materials. The responses or answers are then provided to all committee members and an oral exam conducted within about 7 days. The oral exam is an opportunity for the graduate student to elaborate upon and clarify their earlier answers, and for each committee member to ask supplemental questions to further test the breadth and depth of the student's understanding. An assessment of the graduate student's performance on both the written and oral exams is conducted with a final assessment of either 'pass' or 'fail'. The main evaluation criteria is consistent with the purpose of the Comprehensive Exam stated above. The Graduate Chair will chair the oral exam and will ensure that all students are treated in similar and fair way. Another benefit of the Qualifying Exam is the possible identification of deficiencies in the graduate student's knowledge that could be addressed through independent study, enrolment in a course, the addition of an authority to the Advisory Committee, or some combination of these approaches.

The Comprehensive Exam

The purpose of the Comprehensive Exam is to determine whether the student has a mature and substantive grasp of the field as a whole. Normally this exam is scheduled after the student has completed all course requirements and, in the Department of Veterinary Pathology, after the PhD research has been initiated and may be close to completion. The exam is on topics cognate to the candidate's field of research. A student passing the Comprehensive Exam is deemed a PhD candidate.

The practice within In the Department of Veterinary Pathology has been to conduct the Comprehensive Exam in a similar fashion as Qualifying Exams. Assessment is based on the graduate student's 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 Exam stated above. The Graduate 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. A 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://cgps.usask.ca/onboarding/blueprint/thesis-dissertation-examination/drafting.php#ManuscriptStyleThesesandDissertations>), although a traditional thesis format is also acceptable. Regardless of the style, the thesis must be formatted according to the CGPS requirements <https://cgps.usask.ca/onboarding/blueprint/thesis-dissertation-examination/drafting.php#Formatting>.

The adequacy of the thesis is decided by an examining committee consisting of the supervisor, other members of the Advisory Committee, and other persons as appropriate. The thesis 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 two experimental chapters in the MSc thesis that are both unique and independent (in addition to the literature review and general discussion).
- PhD research program should generate three or more chapters that are unique and independent which collectively contribute to a novel body of work (in addition to the literature review and general 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 Exam Of The Thesis

The Examining Committee, with the exception of the PhD External Examiner, shall be appointed by the academic unit(s) in consultation with the CGPS Dean. For Master's degree defences, the exam is chaired by the Head of the academic unit, or designate (usually Graduate Chair). For PhD Defences, the exam 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 Exam.

In the Department of Veterinary Pathology, the student shall make a brief (30-40 minute) presentation followed by questions from the Examining Committee. In the Department of Veterinary Pathology the examining committee is usually composed of the external examiner, members of the Advisory Committee and any other as deemed appropriate by the Advisory Committee. Exam 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 exam, 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://cgps.usask.ca/policy-and-procedure/Academics/defence.php>. This documents contain detailed description of the oral exam.

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 exam shall be adjourned and the person chairing the exam shall so inform the Dean, CGPS. The Dean then shall investigate the circumstances and decide upon an appropriate course of action.

Policy On Comprehensive Exams For MVetSc Students

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

1. Exam of general and specific knowledge of diagnostic veterinary pathology appropriate to the student's program of study.
2. Exam 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 exam will be conducted at the same session, but separately within the session. Approximately 15%-30% percent of the exam should be devoted to the research project. The exam 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, in the form of a manuscript suitable for submission to a scientific journal, will have been available for review by the committee prior to this exam. Participants in the exam will include all Advisory Committee members as well as other members

of the department that may be invited by the Graduate Chair, in consultation with the Advisory Committee.

Under unusual circumstances, the two parts of the exam 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 exam of the research project. Two copies of the revised and final research project report must be received by the department before forms required for convocation will be submitted to the CGPS and the Convocation Office. The normal deadline for receipt of the final research paper is August 14.

Transfer From A Master's Program To A PhD Program

Transfer from a Master's program to a PhD 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 PhD dissertation.
5. The student has successfully completed the PhD Qualifying Examination prior to being recommended for transfer. This exam 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 MSc And PhD Programs

The research proposal is a document outlining the student's intended MSc or PhD research that is developed during the first year of the program, ideally during the first 6 to 9 months. It must include a literature review; statement of rationale; hypothesis; research objectives; description of the research or experimental design and methodology; statistical analysis; anticipated results; as well as anticipated problems and proposed solutions for at least 2, stand-alone studies, i.e., 2 chapters of novel research in the MSc or PhD thesis. The PhD proposal should also describe, in general terms, the direction of future research based on the anticipated results of first 2 studies. At the end, student should briefly describe anticipated significance and benefits of their proposed research work.

Typically, the document will be 10 to 15 pages, and no more than 20 pages (single-spaced, plus references, and appendices, if needed) and similar in scope and style to a grant application proposal. In

addition, the student should provide a proposed budget (1 or 2 pages) for the successful completion of the entire research project and indicate availability of funding for student's personal expenses, e.g., stipend or research grant. If funding is not secured 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 rather, an outline or plan that demonstrates to 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 a MSc or PhD research proposal, the Advisory Committee must be able to answer unanimously the following inter-related questions in the affirmative.

1. Does the 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 MSc or 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? Are subjects likely to be available? Can the research 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 there personal support for the 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, revisions to the research proposal are required before the proposal is approved.

Licensure With The Saskatchewan Veterinary Medical Association

All students participating in the diagnostic courses offered by the department, i.e., mammalian, surgical, clinical pathology and wildlife diagnostic pathology courses, require licensure with the Saskatchewan Veterinary Medical Association. Usually the "Educational" or equivalent category of licensure is the most appropriate. Students do not need any components of the NEB exam in order to be eligible for the educational category license. **The Saskatchewan Veterinary Medical Association requires that all applicants attend an educational session prior to receiving a license; these are usually held in the spring and fall.** Please visit the Saskatchewan Veterinary Medical Association website to familiarize yourself with requirements for licensure. Students are responsible for the cost associated with obtaining the license; the Department does not pay for the license.

Course Requirements

With advice from the supervisor and Advisory Committee, students will develop a program of studies for their program. The following are the minimum requirements. Additional courses can be completed with the approval of the Advisory Committee.

- MSc: 9 credits units
- MSc with Diagnostics: 18 credit units
- PhD: 6 credit units

In addition, the completion of certain non-credit courses are required for each program, as follows.

Mandatory non-credit courses

| | MVetSC | MSc with Diagnostics | MSc | PhD |
|--|--|-----------------------------|--------------|--------------|
| VTPA 992 – Project | Continuously | | | |
| VTPA 994 – Research | | Continuously | Continuously | |
| VTPA 996 – Research | | | | Continuously |
| VTPA 980 – Clinical Practice | Continuously | | | |
| VTPA 990 – Noon Seminar | Terms 1 and 2 for all graduate students | | | |
| GPS 960^a | Must be completed during Term 1 of the first year | | | |
| GPS 962^b | Must be completed during Term 1 of the first year | | | |
| Safety Resources Unit^c | Some courses required by all students*; others may be required | | | |

^a GPS 960 – Introduction to Ethics and Integrity

^bGPS 962 – Ethics and Integrity in Animal Research

^cSee: http://safetyresources.usask.ca/procedures_forms/documents/Safety%20Training%20Requirements.pdf

Currently, Biosafety, Emergency Response Plans, Fire Extinguisher Training, Laboratory Safety, Safety Orientation for Employees, Walking on Campus in the Winter, and Workplace Hazardous Material Information Systems (WHMIS) are required.

*Graduate students should provide Angie Turner with copies of certificates from completed courses for filing.

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 <https://cgps.usask.ca/policy-and-procedure/Academics/Coursework.php#51COURSESELECTION>

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 two 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**
2. **Biosafety course (Renewed every 5 years), offered on-line**
3. **Laboratory Safety course: offered on-line**
4. **WHIMIS 2015**
5. **COVID-19 Health and Safety**

Once these are completed, please give a copy to Angela Turner (angela.turner@usask.ca) 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 five 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 CVDP students 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).

VTSA 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 or moved to another academic year. Students who are conducting their research or program away from WCVS 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 of 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: 20 - 40 minutes, leaving time for questions and discussion. Time allotments should be discussed the seminar coordinator in advance.

VTPA 990 Diagnostic Seminars (12:30 - 1:30 Thursdays)

A weekly noon-hour seminar in which interesting cases in diagnostic veterinary pathology, wildlife disease, and topics of special interest will be presented. All graduate students registered in diagnostic courses are required to present brief case reports. **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. 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 that they feel are worthwhile for seminars. Graduate students and CVDP students 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 WCVN 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 Angela 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
- Other pathologic findings (ancillary tests)
- Diagnosis and differential diagnosis
- Discussion and review of the disease entity

- References

As a general guide, allow one minute per Power Point slide. Practice your presentation to verify you are within the time constraints and that your pace is appropriate.

Presentations will usually be given using PowerPoint and may include photographs of gross lesions, microscopic findings, 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.

Be 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 as the effect may not be an improvement.

Remember: simple presentations are often the most effective.

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

Objectives: To gain experience in the description and diagnosis of gross lesions depicted in images, histologic slides, cytologic and hematologic preparations and gain experience while becoming effective in the proper use of precise language and acquiring experience in oral presentation in a public forum; Students will develop confidence in their diagnostic skills and to learn to handle criticism and discussion in a seminar setting. To gain experience in interpretation of laboratory data.

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. CVDP students are expected to review the cases, to attend the seminars, and to participate in the general discussion. In addition, all CVDP students 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 exam are encouraged to be active participants, i.e., prepared to present cases if called on (supervisor should be consulted in making this decision).

Presentations: Generally, for each image or slide a graduate student will be chosen to provide a succinct description of the major diagnostic features of the specimen displayed. 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. 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 CVDP student, 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 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. Participants will gain experience in presenting preliminary case findings, tentative and differential diagnoses and planned ancillary tests.

Participants: Presentations are made by undergraduate students, graduate students, CVDP students, 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. Shortcuts 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 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 and bone marrow smears, and clinical laboratory data and to enhance diagnostic skills and encourage participation in case discussions.

Participants: Presentations are made by undergraduate students, graduate students, CVDP students, 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 the 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 the department of Veterinary Pathology are expected to attend **all** Noon Hour Research Seminars and defense seminars.
- All graduate students that take diagnostic courses 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 with diagnostics, CVDP) 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 of whether they are enrolled in diagnostic courses 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 the course syllabus for detailed information regarding any of the diagnostic courses listed here. https://catalogue.usask.ca/?subj_code=VTPA&num=

SVMA License:

In order to participate in any diagnostic course offered by the department e.g., mammalian pathology, surgical pathology, clinical pathology, wildlife diagnostic courses, students must obtain 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 exam 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 to IV VTPA 820 to 823

These courses are devoted to necropsy technique and exam 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 a major commitment for students in the MVetSc and MSc with Diagnostic Programs. 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 (eight-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 five blocks of the course. Gross necropsy exam 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 exam 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 exam 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 prosecuted 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 the student's 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 applies to 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 for guidance. 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 in that case. 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.

Exams. At the end of each course in Mammalian Pathology, an exam will be given. The exam will be based, in part, on the cases managed during the course, and the final exam 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 I -IV VTPA 830 to 833

These courses are devoted to the gross and microscopic exam 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 the 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 or two cases per 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 exam will include written questions and microscopic exam 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 list of completed cases with diagnosis.

Autotutorial Set: Autotutorial sets 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. Biopsies 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). Exams should be completed and given to the supervising pathologist with 24 hours from the time histological slides are received.

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

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. PDS pathologists are involved in the dermatopathology diagnostic services. All students enrolled in MSc with diagnostics are strongly encouraged to participate in Dermatopathology Rounds.

Ophthalmology Rounds: These are led by the college ophthalmology service clinician and 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 I-IV VTPA 850 to 853

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

Students assist the clinical pathologist on duty for five shifts (morning or afternoon) per week for eight weeks. During those weeks students prepare and present cases during the clinical pathology rounds. During the remaining weeks of the semester, they 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

Students attend all VT PA 346.3 lectures. They serve as an instructor in the VTPA 346.3 laboratory period, prepare and deliver the prelaboratory talks in VTPA 346.3 in consultation with the course instructor, prepare and grade laboratory quizzes and prepare cases to be used in case discussions during laboratory periods and be prepared to conduct the discussions. They will also conduct tutorial sessions as requested.

Students also assist in grading portions of the final exam. They attend the weekly rounds in clinical pathology and 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

Students serve as the duty clinical pathologist for four weeks. They 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 and participate in the instruction of students enrolled in VT PA 850.3.

Please inquire about information regarding wildlife and poultry diagnostic courses from Dr. Bollinger and Dr. Gomis, respectively.

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

Graduate Student Registration in Undergraduate Classes

Some graduate students may register in undergraduate classes as part of their graduate programs of study with approval of their Advisory Committee. 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 slides 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

Grading of graduate courses in diagnostic veterinary pathology

Several diagnostic courses offered by the department - Mammalian Pathology (VTPA 820, 821, 822, and 823), Surgical Pathology (VTPA 830, 831, 832, and 833), and Clinical Pathology (VTPA 850, 851, 852, and 853)- are similar in that they involve multiple instructors or supervisors, and entail the conduct of potentially different diagnostic procedures on varied, 'real world' specimens.

Further, each level of these courses has specific expectations. Grading, therefore, is difficult, but must reflect the level of performance of a student within each specific course. Grades should be awarded in accordance with the descriptors set out in the forms used for evaluation. These courses build upon each other and there is an expectation of increasing diagnostic capabilities from one to the next. For a student progressing to the next level of a course in a series, it follows that the marks earned depend on performance in relation to expectations at that level. For example, the same numerical grade of 75% at all four levels of a series of courses reflects a good performance with improvement and mastery of skills keeping pace with course expectations. Conversely, if diagnostic skills remain at the same level the numerical grades will decline with increasing expectations.

MINIMUM GRADES FOR GRADUATE COURSES

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

Percentage scores of at least 70% are required for a minimal pass performance in undergraduate courses taken by graduate students. PhD students are not normally allowed to enroll in undergraduate courses.

Percentage Scores between 60% and 69% in graduate courses are minimally acceptable in a Master's degree program, provided the GPA is at least 70%.

Percentage Scores of at least 70% are required for a minimal pass performance for each course that is included in a Ph.D. program.

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.

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 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 Angela Turner, an email survey invitation with a link to an evaluation form for each course for which you were enrolled. There are two parts to the survey. One evaluates the course itself and 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; the completed 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 of at least \$18,000 per year for the first two years of a MSc program and \$20,000 per year for the first four years of a PhD program. If students do not complete the program on time, the stipend may not be available after two years for MSc and four 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 supported by scholarships or fellowships in the Department of Veterinary Pathology are entitled to a total of 15 vacation days per calendar year, 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

IF VACATIONS ARE NOT TAKEN DURING A PARTICULAR ACADEMIC YEAR THEY ARE LOST ("USE IT OR LOOSE IT") THEY CANNOT BE TRANSFERRED TO OR ACCUMULATED FROM, ONE YEAR TO ANOTHER. IF VACATIONS ARE NOT TAKEN, THERE IS NO FINANCIAL COMPENSATION IN LIEU OF VACATION.

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, faculty or staff. If graduate students choose to be away during that time, this would be counted as part of their annual vacation.

Vacation should be scheduled at a time that is mutually convenient to the student, supervisor(s) and/or Graduate Chair as applicable. Students receiving funding with a service requirement must take vacation at a time that does not cause disruption to the service requirements. Students planning to take vacation days should so inform both their supervisor and Graduate Chair in writing in advance of the planned absence. In addition, graduate students are required to notify Angela Turner about planned absence.

It is the responsibility of each graduate student to adhere to the departmental vacation policy as stated. Students planning to take vacation days should so inform both their supervisor and Graduate Chair in writing in advance of the planned absence. In addition, you are required to notify Angela Turner of your planned absence.

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 registration terms of leave totaling one year may be granted to a student, after which the student is expected to either re-engage in their 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 four months for compassionate or medical reasons. For maternity, parental or adoption reasons, the leave may be approved for up to twelve 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 their 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.

STUDENT ACCOMODATIONS AND SUPPORT

<https://cgps.usask.ca/policy-and-procedure/leaves-accommodations/Accommodations-and-Supports.php#13StudentAccommodationsandSupports>

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.jsf> 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 be added to the department and college email lists.

Telephones

Telephones in graduate student 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. Larhonda Sobchisin 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 inform the **office staff when you will be absent from the department** (sick, on vacation, days off or away, meeting or conference or if you are working at home) 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.jsf>

Keys

Upon your arrival you will be issued **keys** to use while in the department. These are your personal keys and 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 department is of great importance. Every year there are a number of thefts and break-ins which result in the loss of equipment and 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, contact information, reporting a crime and emergency notification sign up can be found:

<https://www.usask.ca/protectiveservices/>

Campus Mail

Mail pick-up and delivery is once daily, in the afternoon. Your individual mailbox is located in the department copier and 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 Expenses

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 and Awards

When you submit research grant applications 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:

<https://www.supremebasics.com/en/>



Library

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

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

Parking

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 contact parking services.

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 Center

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>

StudentCare

https://www.studentcare.ca/rte/en/UniversityofSaskatchewanundergraduatestudentsUSSU_Home

Multipurpose Copier / Shredder

A multipurpose copy machine is located in the department supply room. If necessary, please ask for initial instruction on the equipment, from the office staff. The machine can copy, fax, scan to email, scan to USB and print from USB. The shredder is located outside of the front office.



PHOTO

Gross Photography

All graduate students are encouraged to capture images 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, properly 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 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 available and happy to provide assistance at any time.

For larger specimens and those specific in situ shots that cannot be brought to the Pathstand, there is a handheld digital camera that 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 Larhonda.

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 that is 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 Larhonda 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.

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 implemented Virtual for mainly teaching over the past couple of years. 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 and 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 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 Thesis= 9; MSc Thesis Diagnostics+18; PhD = 6

Mandatory Registration Requirements:

| | MPetSc | MSc | PhD | Certificate |
|---|---------------------|---------------------|---------------------|---------------------|
| 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 | |
| VTPA 854 – Certificate Program | | | | at all times |
| 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 , WHIMIS 2015 (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 |
|---------------|---|---|
| | | |
| | | |
| | | |
| | | |
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APPENDIX 2 - REGISTRATION FOR UCACS ANIMAL CARE COURSE

All 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.

<https://research.usask.ca/rei/researchers/ethics/animal-care-and-research-support-education-and-training.php>. 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.

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 Course Catalogue <https://catalogue.usask.ca/>

With the subject code VTPA

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 835.3 - Grad Student General Pathology
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 854.9 - Advanced Veterinary Diagnostic Pathology
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 –COURSES TO BE CONSIDERED FOR BIOSTATISTICS

Clinical Trial Design and Analysis - VLAC 881.1

A course for veterinary graduate students who need an understanding of clinical trial design, statistics and clinical epidemiology in order to carry out their research and to evaluate themselves as clinicians. The course will cover areas of clinical trial design, applied medical statistics, diagnostic test evaluation and writing research grants.

Permission of instructor required.

Levels: Graduate Studies Level

Statistics For Clinical Research - VLAC 812.2

Permission of instructor required.

Levels: Graduate Studies Level

Advanced Statistics For Research – VLAC 813.1

Levels: Graduate Studies Level

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

This course is designed to provide students with a working knowledge of experimental design, data analysis and data reporting. The course will cover major univariate parametric and non-parametric tools, including more complex ANOVA designs (nested, repeated-measures, ANCOVAs), as well as a few multivariate ones (MANOVA, PCA).

Levels: Graduate Studies Level

Biostatistics I - CHEP 805.3

Designed for life sciences students who wish to understand and apply commonly used advanced statistical methods which they are likely to encounter in their career. The emphasis is on the appropriate application of these research methods and the correct interpretation of their results. Topics covered are: analysis of variance, non-parametric methods, multiple regression and logistic regression. Computer software used: SPSS.

Prerequisite(s): STAT 244, 245; or equivalent.

Note: Students may receive credit for only one of NURS 818, CHEP 805, and PUBH 805.

Elementary Statistical Concepts - STAT 244.3

Statistical concepts and techniques including graphing of distributions, measures of location and variability, measures of association, regression, probability, confidence intervals, hypothesis testing. Students should consult with their department before enrolling in this course to determine the status of this course in their program.

Prerequisite(s): A course in a social science or Mathematics A30 or Foundations of Mathematics 30 or Pre-Calculus 30.

Note(s): Students may receive credit for only one of STAT 242, 244, 245, or 246. Please refer to the Statistics Course Regulations in the Arts & Science section of the Course and Program Catalogue.

Levels: Undergraduate Level

Biostatistics for Public Health - PUBH 805.3

Designed for students who wish to understand basic bio statistical methods and principles as they apply to public health data. The methods include descriptive statistics, confidence intervals and hypothesis testing, analysis of variance, non-parametric methods, multiple regression and logistic regression. The emphasis of the course is on applications of these methods to public health data, on correct interpretations of the resulting analyses as to be presented to both public health professionals and general lay audiences, and on the critical appraisal of these methods as used in the public health literature. The course also introduces the computer software program SPSS as it applies to the statistical topics discussed in the course.

Formerly: CHEP 805

Prerequisite(s): Permission of the Instructor.

Note: Students may receive credit for only one of NURS 818, CHEP 805, and PUBH 805.Scheduled

Biostatistics for Public Health II - PUBH 811.3

This course is a continuation of PUBH 805.3 and includes several multivariate biostatistical methods and principles that are commonly used in public health research. The course topics include logistical regression, analysis of variance and covariance, experimental design and inference for Epidemiology, observational data analysis, categorical data analysis, person-time data analysis, and reliability. The course also introduces SAS programming as it applies to the course topics.

Prerequisite: PUBH 805.3, CHEP 805.3, or STAT 845.3, or another graduate course in statistics as approved by the instructor.

Levels: Graduate Studies Level

Attributes: Audit Allowed with Permission, Uses Blackboard Web Tools, On Campus Student Fees, Fee - Graduate Studies

Restrictions:

Must be enrolled in one of the following Programs: Master of PublicHealth-Course

Must be enrolled in one of the following Levels: Graduate Studies Level

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

Registration

Instructions for Registration

<https://students.usask.ca/academics/classes.php#Learnwhichcoursesyouneed>

Registration deadlines

<https://students.usask.ca/academics/deadlines.php#Registrationandwithdrawaldeadlines>

Additional Registration Information for Students registered with Disability Services

Students may request assistance with registration.

Please contact <https://students.usask.ca/health/centres/access-equity-services.php>

Thesis and project based Masters and Doctoral programs

Graduate students in a thesis or project based program pay tuition three times a year for as long as they are enrolled in their program.

<https://students.usask.ca/money/tuition-fees/graduate-tuition.php>

Thesis Tuition Reduction Policy

Students who defend their thesis prior to the end of a term may be eligible for a tuition refund. All requirements must be complete (which include the [Application to Graduate](#), all paperwork from academic unit and student, and thesis is successfully submitted through the [electronic site](#)). Credits are pro-rated monthly and will be placed on the student's account by Registrarial Services, Student and Enrolment Services Division. If you are entitled to a refund, please complete the [Request for Refund form](#). Eligible students can expect to receive the credit on their account approximately one month after completion of requirements. **This policy does not apply to course-based or project students.** Contact gradfees@usask.ca for further details.

- Tuition fees are assessed at the time a student registers. They are subject to validation for accuracy and correctness at any time by Registrarial Services, Student and Enrolment Services Division. If an error is made in assessing a student's account, upon discovery, the student's account will be retroactively reassessed and the student notified of any

amount credited or debited, regardless of whether or not the student has completed the class, graduated, or is no longer attending the University.

- Student Fees are assessed in addition to tuition fees.
- Students taking courses that are not required for their degrees must pay the full cost of the courses.
- Tuition will be waived when a student is on an official leave.
- Tuition rates are subject to change upon approval of the Board of Governors.

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

Fees are for full-time undergraduate and graduate students for the regular sessions only. Any applicable spring and summer session fees are not depicted.

The athletic, recreation and student services fees fund specific university activities. Fees in the shaded-green areas are collected on behalf of student groups for authorized purposes.

Those students who are already covered by an equivalent health and/or dental insurance plan can opt out and receive a credit to their student account for the amount of the plan.

- Student fees are non-refundable after the registration deadline for a given term. After the registration deadline, these fees are distributed to individual service providers and therefore not available to be refunded. For multi-term classes (classes extending over two terms), students fees are non-refundable after the registration change deadline of the first term in which the class is offered.

How to pay

A statement of tuition, student fees and other balances owing will be sent to students on a regular basis, however, payment is due regardless of whether or not a statement is received. In fact, depending on when students register and/or add classes, they may not receive a statement. You can view your statement in [PAWS](#).

1. Log into [PAWS](#)
2. Select the **Academics** tab
3. Select the **Tuition & Fees** channel
4. Select **Account Summary by term**

This is particularly important if any class changes have been made.

<http://students.usask.ca/money/tuition-fees/pay.php>