PATHOBIOLOGY

The department offers programs of study leading to MSc and PhD degrees and a Graduate Diploma in the following four fields:

- **Comparative Pathology**
  - Avian pathology
  - Fish pathology
  - Wildlife and zoo animal medicine and pathology
  - Laboratory animal science
- **Immunology**
- **Veterinary Infectious Diseases**
  - Veterinary bacteriology
  - Veterinary parasitology
  - Veterinary virology
- **Veterinary Pathology**
  - Anatomic pathology
  - Clinical pathology

The department also participates in the Doctor of Veterinary Science (DVSc) program.

Administrative Staff

Chair
Brandon Lillie (3839 Pathobiology, Ext. 54641)
blillie@uoguelph.ca
Graduate Program Coordinator
Jeff Caswell (3828 Pathobiology, Ext. 54555)
jcaswell@uoguelph.ca
Graduate Program Assistant (MSc/PhD)
Jessie Beer (Stewart Building, Room 2509, Ext. 54725)
pathgrad@uoguelph.ca

Graduate Program Assistant (DVSc)

Kaite Brown (Stewart Building, Room 2509, Ext. 54005)

pathgrad@uoguelph.ca

Administrative Assistant to the Chair and Faculty
Marni Struyk (3840 Pathobiology, Ext. 54755)
ovcsas.path@uoguelph.ca

Graduate Faculty

This list may include Regular Graduate Faculty, Associated Graduate Faculty and/or Graduate Faculty from other universities.

John R. Barta
B.Sc., PhD Toronto - Professor
Graduate Faculty

Janet Beeler-Marfisi
BA, DVM, B.Sc., D.V.Sc. Guelph, Diplomate ACVP - Assistant Professor
Graduate Faculty

Dorothee Bienzle
DVM, M.Sc. Guelph, PhD McMaster, Diplomate ACVP - Professor
Graduate Faculty

Patrick Boerlin
DVM, PhD Bern - Associate Professor
Graduate Faculty

Byram Bridle
B.Sc., M.Sc., PhD Guelph - Associate Professor
Graduate Faculty

Jeff Caswell
DVM, D.V.Sc. Guelph, PhD Saskatchewan, Diplomate ACVP - Professor
Graduate Faculty

Vahab Farzan
DVM Tehran, M.Sc., PhD Guelph - Research Associate, Population Medicine, University of Guelph
Associated Graduate Faculty

Robert A. Foster
B.V.Sc. Queensland, PhD James Cook North Queensland, MANZCVS, Diplomate ACVP - Professor
Graduate Faculty

Rebecca Guy
B.Sc., M.Sc. McGill, PhD Alberta - Research Scientist, Public Health Agency of Canada
Associated Graduate Faculty

Claire Jardine
B.Sc. Guelph, M.Sc. British Columbia, DVM, PhD Saskatchewan - Associate Professor
Graduate Faculty

Stefan M. Keller
DVM Berlin, Dr. Med Vet, Diplomate ECVP Zurich, PhD UC Davis - Assistant Professor
Associated Graduate Faculty

Susan Kutz
DVM Western College of Vet Med, PhD Saskatchewan - Professor, Ecosystem and Public Health, Faculty of Veterinary Medicine, University of Calgary
Associated Graduate Faculty

Brandon N. Lillie
DMV, PhD Guelph, DIP. A.C.V.P. - Associate Professor and Chair
Graduate Faculty

John S. Lumsden
B.Sc., DVM, M.Sc., PhD Guelph, Diplomate ACVP - Professor
Graduate Faculty

Janet I. MacInnes
B.Sc. Victoria, PhD Western Ontario - Retired Faculty, Pathobiology, University of Guelph
Associated Graduate Faculty

Bonnie A. Mallard
B.Sc., M.Sc., PhD Guelph - Professor
Graduate Faculty

Craig Mosley
B.Sc., DVM, M.Sc. Guelph - Clinical Veterinarian Anesthesiologist, VCA Canada, Newmarket
Associated Graduate Faculty

Heather Murphy
BEng, MASc Dalhouse, PhD Guelph - Associate Professor

Graduate Faculty

Nicole Nemeth
DVM, PhD Colorado State - Assistant Professor, Pathology, University of Georgia
Associated Graduate Faculty

Andrew S. Peregrine
BVMS, PhD, DVM Glasgow, Diplomate EVPC, Diplomate ACVM - Associate Professor
Graduate Faculty

Brandon L. Plattner
B.Sc., DVM Kansas State, PhD Iowa State, Diplomate ACVP - Associate Professor, Pathobiology/Diagnostic Medicine, Kansas State University
Associated Graduate Faculty

Nicole Ricker
BSc Guelph, M.Sc., PhD Toronto - Assistant Professor
Graduate Faculty

Spencer Russell
DVM, PhD Guelph - Professor, Fisheries and Aquaculture, Vancouver Island University
Associated Graduate Faculty

Mehdi Sargolzaei
B.Sc., M.Sc. Iran, PhD Japan - Research Genomicist, Semex Alliance
Associated Graduate Faculty

Mauricio Seguel
B.V.Sc., MV Austral de Chile, PhD Georgia - Assistant Professor
Graduate Faculty

Shayan Sharif
DVM Tehran, PhD Guelph - Professor and Associate Dean (Research and Innovation), Ontario Veterinary College
Graduate Faculty

Craig Stephen
DVM, PhD Saskatchewan - Professor, Veterinary Medicine, University of Saskatchewan
Associated Graduate Faculty

Leonardo Susta
DVM Perugia, PhD Georgia, Diplomate ACVP - Assistant Professor
Graduate Faculty

Patricia Turner
B.Sc. McMaster, M.Sc. Dalhousie, DVM, D.V.Sc. Guelph, Diplomate ACLAM, Diplomate ABT - Professor Emerita
Associated Graduate Faculty

Csaba Varga
DVM Cluj Napoca, M.Sc. Cluj Napoca/Guelph, PhD Guelph - Assistant Professor, University of Illinois at Urbana-Champaign
Associated Graduate Faculty

J. Scott Weese
DVM, D.V.Sc. Guelph, Diplomate ACVIM - Professor
Graduate Faculty

Geoffrey A. Wood
DVM Guelph, PhD Toronto, D.V.Sc. Guelph - Associate Professor
Graduate Faculty

R. Darren Wood
DVM Prince Edward Island, D.V.Sc. Guelph, Diplomate ACVP - Associate Professor
Graduate Faculty

Sarah Wootton
B.Sc., PhD Guelph - Associate Professor
Graduate Faculty

Samuel Workenhe
DVM Addis Ababa, M.Sc. Tromso, PhD Prince Edward Island - Assistant Professor
Graduate Faculty

MSc Program

The MSc program is offered in four fields:

1. comparative pathology;
2. immunology;
3. veterinary infectious diseases; and
4. veterinary pathology.

The primary objective is to provide students with training in conceptual and laboratory aspects of research, combined with advanced training in a field of knowledge relating to manifestations, basic mechanisms and host resistance for diseases of vertebrates.

Admission Requirements

Applicants should have either an honours degree in biological sciences with at least a 'B' average during the final 2 years of the program, or a DVM (or equivalent) degree with at least a 'B' average over the four years of the program. In either case, performance in relevant biomedical science courses, (e.g. microbiology, immunology, biochemistry, molecular biology, etc.) at a level above the minimum 'B' average is normally expected. Admission requires a statement of the applicant's interests and objectives and supportive letters of reference. An appropriate faculty advisor must be identified, as well as potential sources of funds for research and for provision of a stipend for the student. Applications may be submitted at any time. Initial enrolment can be in the Fall, Winter or Summer semesters, with a preference for the Fall.

Program Requirements

Students must complete at least 1.5 credits of prescribed courses with at least a 'B' average, and must satisfactorily write and defend a research thesis. Prescribed courses and additional courses are selected by the student in consultation with the advisor and advisory committee based on the student's background and their research and career objectives. PABI*6430 Academic and Professional Skills in Pathobiology and PABI*6440 MSc Seminar in Pathobiology are prescribed for all MSc students. The thesis research is planned by the student in consultation with the advisor. Research plans and progress must be approved by the advisory committee. The thesis defence includes a seminar presentation and a final oral examination by a committee of graduate faculty members.

See also the MSc Degree Regulations in the Graduate Calendar.

PhD Program

The PhD program is offered in four fields:

1. comparative pathology;
2. immunology;
3. veterinary infectious diseases; and
4. veterinary pathology.

The program is designed primarily for students who aspire to a career involving research on the biology of mechanisms of diseases in vertebrates. The program provides advanced training in conceptual and laboratory aspects of independent research, combined with advanced training in one or more fields of knowledge. The major emphasis is on the generation and critical evaluation of scientific knowledge relating to the causes, mechanisms and/or consequences of diseases affecting a particular species, organ system or biological process or to the understanding of host resistance and basic mechanisms of health or disease in vertebrates. DVM (or equivalent) graduates may obtain some of the practical experience required for specialty certification in veterinary anatomic pathology, clinical pathology, laboratory animal science, microbiology or parasitology.

Admission Requirements

The usual requirement for admission to the PhD program is the completion of an approved MSc degree with a minimum 'B+' average and strongly supportive letters from referees familiar with the background of the applicant. Performance in relevant biomedical science courses, (e.g. microbiology, immunology, biochemistry, molecular biology, etc) at a level above the 'B+' average is normally expected. Students may apply for admission into the PhD program before completing the MSc program, providing that they have a minimum 'A' average and a demonstrated capacity for independent research. Some students with demonstrated potential for independent research and a superior academic record during their baccalaureate or DVM programs may be admitted directly into the PhD program.

Admission requires a statement of the applicant's interests and objectives and supportive letters of reference. An appropriate faculty advisor must be identified, as well as potential sources of funds for research and provision of a stipend for the student. Applications may be submitted at any time. Initial enrolment can be in the Fall, Winter or Summer semesters, with a preference for the Fall.

Program Requirements

Students must have successfully completed PABI*6430 Academic and Professional Skills in Pathobiology and PABI*6450 Doctoral Seminar in Pathobiology, and have obtained at least a 'B ' average in all courses prescribed by the advisory committee. There are no other specific course requirements. Prescribed courses and additional courses are selected by the student in consultation with the advisor and advisory committee based on the student's background, their research and career objectives.

Students are required to satisfactorily complete a qualifying examination before the end of the fifth semester if they possess an MSc degree, or before the end of the seventh semester if they possess an honours baccalaureate or DVM degree. The qualifying examination is conducted by a committee of graduate faculty members with expertise in the areas of study, and includes written and oral components. The qualifying examination covers a breadth of knowledge of topics related to the student's research area, and depth of knowledge within this research area. To successfully complete the examination, students must have a broad general understanding of one of the departmental fields of study, and a current and detailed understanding of one or two additional areas in their field of study. The advisory committee identifies selected areas of study by the end of the second semester. In addition, the advisory committee is required to confirm that the student has demonstrated both ability and promise in research. This is based on performance in the research project and in courses and other academic activities.

The thesis research is planned by the student in consultation with the advisor. The proposed thesis research is developed and defended as part of PABI*6450 Doctoral Seminar in Pathobiology. The PhD seminar, usually completed in semester 7-8, is a separate requirement from PABI*6450. Research plans and progress must be approved by the advisory committee. The program is completed with the satisfactory presentation and defence of a thesis, which includes a seminar presentation and a final oral examination by a committee that includes an external examiner and members of the graduate faculty.

See also the Degree Regulations in the Graduate Calendar.

DVSc Program

The Department of Pathobiology participates in the DVSc program which provides advanced training in a specialty discipline of veterinary medicine, combined with course work and a thesis-based research project. Specialty training is offered in the areas of veterinary anatomic pathology, veterinary clinical pathology, veterinary clinical microbiology, laboratory animal science, wildlife and zoo animal medicine and pathology, avian and exotic medicine and pathology, and fish pathology. The research project addresses an applied aspect of an important disease problem in vertebrates. The program provides practical training for candidates preparing for specialty board certification in veterinary anatomic pathology, veterinary clinical pathology, laboratory animal science or veterinary clinical microbiology. Refer to the Degree Regulations in the Graduate calendar for more information.

Admission Requirements

Applicants require a DVM (or equivalent) degree with high academic standing from a program that provides eligibility for the practice of veterinary medicine in Ontario. Alternatively, applicants with a DVM (or equivalent) degree can be admitted after completion of an acceptable graduate diploma, MSc, or PhD degree with an upper 'B' average. Admission requires the identification of a faculty advisor and a source of personal support for the student. If these have not been arranged by the applicant, a statement of the applicant's interests and objectives and supportive letters of reference are required to assist with the identification of an appropriate faculty advisor and potential sources of funds for research and student stipend. Several stipends for DVSc candidates are available intermittently for training in some disciplines. As these funds become available, stipends are awarded to the most qualified applicant(s) based on completed applications for admission to the DVSc program. Applications may be submitted at any time. Initial enrolment can be in the Fall, Winter or Summer semesters.

Program Requirements

The degree requires a minimum of nine semesters of full-time study; the completion of at least 2.5 credits in courses prescribed by the student's advisory committee including completion of the department's graduate seminar course, with an overall average of at least 'B-', and satisfactory completion of a qualifying examination, thesis and final oral examination.

See also the Degree Regulations in the Graduate Calendar.

Collaborative Specializations

One Health

The Department of Pathobiology participates in the collaborative specialization in One Health. Master's and Doctoral students wishing to undertake thesis research or their major research paper/project with an emphasis on one health are eligible to apply to register concurrently in Pathobiology and the collaborative specialization. Students should consult the One Health (calendar.uoguelph.ca/graduate-calendar/collaborative-specializations/one-health/) listing for more information.

Toxicology

The Department of Pathobiology participates in the master's collaborative specialization in toxicology. The faculty members' research and teaching expertise includes aspects of toxicology; they may serve as advisors for MSc students. Please consult the Toxicology (calendar.uoguelph.ca/graduate-calendar/collaborative-specializations/toxicology/) listing for a detailed description of the masters collaborative specialization.

Graduate Diploma Program

The diploma program is offered in four fields:

1. comparative pathology;
2. immunology;
3. veterinary infectious diseases; and
4. veterinary pathology.

The objective is to provide advanced practical training in a field of veterinary pathology to veterinarians working in industry, government or in private practice. The program emphasizes practical and course-based applied training in anatomic pathology, clinical pathology, avian medicine and pathology, laboratory animal science, or wildlife and zoo animal pathology. The Diploma program does not normally result in eligibility for specialty certification.

Admission Requirements

Applicants require a DVM (or equivalent) degree with acceptable academic standing. Admission requires the prior identification of a faculty advisor and a source of personal support for the student.

Program Requirements

The Graduate Diploma requires three semesters of full time study and completion of 1.5 credits of prescribed courses, including 0.5 credits in an applied course and no more than 0.5 credits in a Special Topics course. The remaining credits may be in the defined area of study, as prescribed by the faculty advisor. Diploma students must satisfactorily pass a final oral comprehensive examination on knowledge in their field of study. It will be conducted by faculty members in the Department of Pathobiology. There is no thesis, but students are required to write a paper that the advisor considers ready for submission to a peer reviewed scientific journal.

See also the Graduate Diploma Regulations of the Faculty of Graduate Studies.

Courses

PABI*6000 Bacterial Pathogenesis Fall Only [0.50]
An overview of key concepts in bacterial pathogenesis with emphasis on veterinary and zoonotic pathogens.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6030 Applied Clinical Pathology I Summer, Fall, and Winter [0.50]
Introduction to laboratory procedures and interpretation of data arising from hematology, cytology, clinical chemistry, urinalysis and hemostatis analysis of clinical material. Intended for students training in clinical pathology and DVM graduates licensed by CVO.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6040 Applied Clinical Pathology II Unspecified [0.50]
A continuation of PABI*6030 with greater depth in the interpretation of data and increased understanding of ancillary diagnostic methods applied in clinical case material. Intended for students in training in clinical pathology and DVM graduates licensed by CVO.
Prerequisite(s): PABI*6030
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6041 Applied Clinical Pathology III Unspecified [0.50]
A continuation of PABI*6040 with independent and comprehensive interpretation of diagnostic test results, and analysis of laboratory quality assurance quality control procedures. Intended for students training in clinical pathology and DVM graduates licensed by CVO.
Prerequisite(s): PABI*6030 and PABI*6040
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6050 Applied Avian Pathology I Fall Only [0.50]
Examination and interpretation of gross and microscopic lesions of domestic poultry. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6060 Applied Avian Pathology II Winter Only [0.50]
A continuation of PABI*6050, emphasizing seasonal differences in diseases as well as diseases more commonly associated with winter conditions. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Prerequisite(s): PABI*6050
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6070 Applied Avian Pathology III Summer Only [0.50]
A continuation of PABI*6060, emphasizing seasonal differences in diseases as well as diseases more commonly associated with summer conditions. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Prerequisite(s): PABI*6050 and PABI*6060
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6080 Diagnostic Pathology I Summer, Fall, and Winter [0.50]
An introductory course of diagnostic pathology, including all body systems but emphasizing diseases affecting the whole body and respiratory, urinary and digestive (including liver and pancreas) systems. Intended for students in training in anatomic pathology and Veterinarians licensed by CVO, engaged in applied anatomic pathology training.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6090 Diagnostic Pathology II Summer, Fall, and Winter [0.50]
An intermediate course that builds on the skills acquired in PABI*6080 and further enhances diagnostic veterinary pathology skills to include diseases of the nervous, endocrine and musculoskeletal systems. Intended for students training in anatomic pathology and Veterinarians licensed by CVO, engaged in applied anatomic pathology training.
Prerequisite(s): PABI*6080
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6091 Diagnostic Pathology III Summer, Fall, and Winter [0.50]
An advanced course that builds on the skills acquired in PABI*6090 and further enhances diagnostic veterinary pathology skills to include diseases of all organ systems. Intended for students training in anatomic pathology and Veterinarians licensed by CVO, engaged in applied anatomic pathology training.
Prerequisite(s): PABI*6080and PABI*6090
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6100 Immunobiology Fall Only [0.50]
Major areas of immunology, including initiation, regulation, receptors, genetics, immune system development and function.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6104 Mechanisms of Disease Winter Only [0.50]
Molecular, cellular and tissue processes involved in the pathogenesis of adaptive, degenerative, inflammatory, infectious, proliferative and neoplastic diseases.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6190 Topics in Immunology Winter Only [0.50]
Aspects of immune and non-specific host resistance, diagnostic immunology and immune-mediated disease.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6221 Comparative Veterinary Pathology I Unspecified [0.50]
Pathological changes associated with diseases of amphibia, reptiles, wild and captive non-domestic birds, and wild mammals including fur-bearers. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Offering(s): Offered in even-numbered years.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6222 Comparative Veterinary Pathology II Unspecified [0.50]
Pathological changes associated with diseases of poultry and pet birds, fish and various laboratory animals.
Offering(s): Offered in even-numbered years.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6300 Clinical Pathology I Unspecified [0.50]
Principles and applications of veterinary hematology and cytology, with emphasis on the hematopoietic systems. Veterinarians licensed by CVO.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6320 Clinical Pathology II Winter Only [0.50]
In depth study of principles and applications of biochemical tests to evaluate the function of selected organ systems, including the renal, hepatic, pancreatic and endocrine systems. Veterinarians licensed by CVO.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6330 Viral Diseases Fall Only [0.50]
A study of important viral diseases of animals, with emphasis on etiology, host responses, diagnosis and control.
Offering(s): Offered in odd-numbered years.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6350 Molecular Epidemiology of Bacterial Diseases Fall Only [0.50]
This is a basic introduction to molecular epidemiology of bacterial diseases. It provides an understanding of molecular epidemiology methodologies and of their use for improving our understanding of infectious diseases epidemiology and control. Lab component requires WHIMIS certificate.
Prerequisite(s): STAT*2040
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6430 Academic and Professional Skills in Pathobiology Summer and Fall [0.00]
Students will be introduced to fundamental elements of scientific research and communication and to various academic skills through lectures, seminars, and completion of in class activities. Throughout the course, relevant ethical, and regulatory issues will be discussed.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6440 MSc Seminar in Pathobiology Summer, Fall, and Winter [0.50]
Students registered in the MSc program will develop a written critical review of the literature and plan for their thesis research. This material will also be presented in the form of a public seminar. Students are also required to provide oral and written critical reviews of thesis plan presentations.
Prerequisite(s): PABI*6430
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6450 Doctoral Seminar in Pathobiology Summer, Fall, and Winter [0.50]
Students registered in the PhD or DVSc programs will develop a written critical review of the literature and plan for their thesis research. This material will also be presented in the form of a public seminar. Students are also required to provide oral and written critical reviews of the thesis plan presentations of other students.
Prerequisite(s): PABI*6430
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6500 Infectious Diseases and Public Health Fall Only [0.50]
Prevention and control of infectious diseases is an important aspect of public health. This course will involve detailed discussion of selected infectious diseases of public health concern, excluding zoonotic diseases. Relevant aspects of microbiology, epidemiology, clinical presentation, diagnosis and treatment will be covered, with additional emphasis on prevention and control.
Restriction(s): Restricted to Public Health students.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6550 Epidemiology of Zoonoses Winter Only [0.50]
Characterization and distribution of diseases common to people and animals.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6560 Principles and Practice of Antimicrobial Therapy Unspecified [0.50]
This course will cover antimicrobial therapy in veterinary medicine, encompassing microbial, pharmacological and clinical aspects of prudent and effective antimicrobial use. Students should hold a DVM degree or equivalent.
Offering(s): Offered in alternate years.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6630 Applied Comparative Pathology I Unspecified [0.50]
Introductory course in the diagnostic pathology of mammals, birds, reptiles, amphibians, and fish. Cases may be restricted by animal taxa or context (e.g., free-ranging Canadian wildlife, zoological collections, aquaculture). The three-semester course in Applied Comparative Pathology builds in expected level of accomplishment. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6640 Applied Comparative Pathology II Unspecified [0.50]
Intermediate course in the diagnostic pathology of mammals, birds, reptiles, amphibians, and fish. Cases may be restricted by animal taxa or context (e.g., free-ranging Canadian wildlife, zoological collections, aquaculture). The three-semester course in Applied Comparative Pathology builds in expected level of accomplishment. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Prerequisite(s): PABI*6630
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6650 Applied Comparative Pathology III Unspecified [0.50]
Advanced course in the diagnostic pathology of mammals, birds, reptiles, amphibians, and fish. Cases may be restricted by animal taxa or context (e.g., free-ranging Canadian wildlife, zoological collections, aquaculture). The three-semester course in Applied Comparative Pathology builds in expected level of accomplishment. Intended for students training in anatomic pathology and Veterinarians licensed by CVO.
Prerequisite(s): PABI*6630 and PABI*6640
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6700 Laboratory Animal Science Unspecified [0.50]
Basic information on various aspects of laboratory animal science, including IACUC function, regulatory oversight, ethics, historical review of animal research, animal models and alternatives, experimental design and considerations, biology, management and uses of common species in research.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6710 Applied Laboratory Animal Science I Unspecified [0.50]
This course will emphasize practical aspects of laboratory animal science including research protocol review, writing and reviewing standard operating procedures, animal monitoring, pathology procedures, and case management.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6720 Applied Laboratory Animal Science II Unspecified [0.50]
Continuation of I with emphasis on biohazard and personnel safety, monitoring for disease, quality control and diagnostic procedures.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6730 Applied Laboratory Animal Science III Unspecified [0.50]
Continuation of I and II, with emphasis on a comparison of programs and procedures in other facilities in Canada, nonhuman primate medicine, and surgical, clinical and necropsy procedures.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6740 Avian Diseases Unspecified [0.50]
Detailed study of recent concepts of preventive medicine, diagnosis and therapeutics as applied to clinical recognition and control of avian diseases.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph

PABI*6960 Special Topics in Pathobiology Summer, Fall, and Winter [0.50]
In-depth independent study of subjects related to student's principal area of interest. Major paper(s), laboratory studies, and/or written and oral examination, with or without seminar preparation.
Restriction(s): Instructor consent required.
Department(s): Department of Pathobiology
Location(s): Guelph