# 2019-2020 Graduate Calendar

The information published in this Graduate Calendar outlines the rules, regulations, curricula, programs and fees for the 2019-2020 academic year, including the Summer Semester 2019, Fall Semester 2019 and the Winter Semester 2020.

For your convenience the Graduate Calendar is available in PDF format.

If you wish to link to the Graduate Calendar please refer to the Linking Guidelines.

The University is a full member of:

Universities of Canada

Contact Information:

University of Guelph Guelph, Ontario, Canada N1G 2W1 519-824-4120

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May 1, 2019	Initial Publication
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September 2, 2019	Revision 2
December 10, 2019	Revision 3
January 28, 2020	Revision 4



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# Disclaimer

The Office of Graduate and Postdoctoral Studies has attempted to ensure the accuracy of this on-line Graduate Calendar. However, the publication of information in this document does not bind the university to the provision of courses, programs, schedules of studies, fees, or facilities as listed herein.

# Limitations

The University of Guelph reserves the right to change without notice any information contained in this calendar, including any rule or regulation pertaining to the standards for admission to, the requirements for the continuation of study in, and the requirements for the granting of degrees or diplomas in any or all of its programs.

The university will not be liable for any interruption in, or cancellation of, any academic activities as set forth in this calendar and related information where such interruption is caused by fire, strike, lock-out, inability to procure materials or trades, restrictive laws or governmental regulations, actions taken by the faculty, staff or students of the university or by others, civil unrest or disobedience, Public Health Emergencies, or any other cause of any kind beyond the reasonable control of the university.

The University of Guelph reaffirms section 1 of the Ontario Human Rights Code, 1981, which prohibits discrimination on the grounds of race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, handicap, age, marital status or family status.

The university encourages applications from women, aboriginal peoples, visible minorities, persons with disabilities, and members of other under-represented groups.

# **Collection, Use and Disclosure of Personal Information**

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90f31 e.htm. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes. Certain personal information is disclosed to external agencies, including the Ontario Universities Application Centre, the Ministry of Advanced Education and Skills Development, and Statistics Canada, for statistical and planning purposes, and is disclosed to other individuals or organizations in accordance with the Office of Registrarial Services Departmental Policy on the Release of Student Information. For details on the use and disclosure of this information call the Office of Registrarial Services at the University at (519) 824-4120 or see https://www.uoguelph.ca/registrar/

# **Statistics Canada - Notification of Disclosure**

For further information, please see Statistics Canada's web site at http://www.statcan.gc.ca and Section XIV Statistics Canada.

## Address for University Communication

Depending on the nature and timing of the communication, the University may use one of these addresses to communicate with students. Students are, therefore, responsible for checking all of the following on a regular basis:

## **Email Address**

The University issued email address is considered an official means of communication with the student and will be used for correspondence from the University. Students are responsible for monitoring their University-issued email account regularly.

## Home Address

Students are responsible for maintaining a current mailing address with the University. Address changes can be made, in writing, through Registrarial Services.

# Name Changes

The University of Guelph is committed to the integrity of its student records, therefore, each student is required to provide either on application for admission or on personal data forms required for registration, their complete, legal name. Any requests to change a name, by means of alteration, deletion, substitution or addition, must be accompanied by appropriate supporting documentation.

# Student Confidentiality and Release of Student Information Policy Excerpt

The University undertakes to protect the privacy of each student and the confidentiality of their record. To this end the University shall refuse to disclose personal information to any person other than the individual to whom the information relates where disclosure would constitute an unjustified invasion of the personal privacy of that person or of any other individual. All members of the University community must respect the confidential nature of the student information which they acquire in the course of their work.

Complete policy at https://www.uoguelph.ca/secretariat/office-services/university-secretariat/university-policies.

# **Graduate Degree Learning Outcomes**

On May 27, 2013, the University of Guelph Senate approved the following five University-wide Learning Outcomes as the basis from which to guide the development of graduate degree programs, specializations and courses:

- 1. Critical and Creative Thinking
- 2. Literacy
- 3. Global Understanding
- 4. Communication
- 5. Professional and Ethical Behaviour

These learning outcomes are also intended to serve as a framework through which our educational expectations are clear to students and the broader public; and to inform the process of outcomes assessment through the quality assurance process (regular reviews) of programs and departments.

An on-line guide to the learning outcomes, links to the associated skills, and detailed rubrics designed to support the development and assessment of additional program and discipline-specific outcomes, are available for reference on the Learning Outcomes website

# **Critical and Creative Thinking**

Critical and creative thinking is a concept in which one applies logical principles, after much inquiry and analysis, to solve problems with a high degree of innovation, divergent thinking and risk taking. Those mastering this outcome show evidence of integrating knowledge and applying this knowledge across disciplinary boundaries. Depth and breadth of understanding of disciplines is essential to this outcome. At the graduate level, originality in the application of knowledge (master's) and undertaking of research (doctoral) is expected. In addition, Critical and Creative Thinking includes, but is not limited to, the following outcomes: Independent Inquiry and Analysis; Problem Solving; Creativity; and Depth and Breadth of Understanding.

## Literacy

Literacy is the ability to extract information from a variety of resources, assess the quality and validity of the material, and use it to discover new knowledge. The comfort in using quantitative literacy also exists in this definition, as does using technology effectively and developing visual literacy.

In addition, Literacy includes, but is not limited to, the following outcomes: Information Literacy, Quantitative Literacy, Technological Literacy, and Visual Literacy.

## **Global Understanding**

Global understanding encompasses the knowledge of cultural similarities and differences, the context (historical, geographical, political and environmental) from which these arise, and how they are manifest in modern society. Global understanding is exercised as civic engagement, intercultural competence and the ability to understand an academic discipline outside of the domestic context.

In addition, Global Understanding includes, but is not limited to, the following outcomes: Global Understanding, Sense of Historical Development, Civic Knowledge and Engagement, and Intercultural Competence.

## Communication

Communication is the ability to interact effectively with a variety of individuals and groups, and convey information successfully in a variety of formats including oral and written communication. Communication also comprises attentiveness and listening, as well as reading comprehension. It includes the ability to communicate and synthesize information, arguments, and analyses accurately and reliably.

In addition, Communication includes, but is not limited to, the following outcomes: Oral Communication, Written Communication, Reading Comprehension, and Integrative Communication.

#### **Professional and Ethical Behaviour**

Professional and ethical behaviour requires the ability to accomplish the tasks at hand with proficient skills in teamwork and leadership, while remembering ethical reasoning behind all decisions. The ability for organizational and time management skills is essential in bringing together all aspects of managing self and others. Academic integrity is central to mastery in this outcome. At the graduate level, intellectual independence is needed for professional and academic development and engagement.

In addition, Professional and Ethical Behaviour includes, but is not limited to, the following outcomes: Teamwork, Ethical Reasoning, Leadership, Personal Organization and Time Management, and Intellectual Independence.

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#### 137

IX. Graduate Programs, Pathobiology 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 Interim 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** Jessie Beer (Stewart Building, Room 2509, Ext. 54725) pathgrad@uoguelph.ca

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

# **Graduate Faculty**

John R. Barta

BSc, PhD Toronto - Professor

Janet Beeler-Marfisi

BA, DVM, BSc, DVSc Guelph, Diplomate ACVP - Assistant Professor **Dorothee Bienzle** 

DVM, MSc Guelph, PhD McMaster, Diplomate ACVP - Professor

Patrick Boerlin

DVM, PhD Bern - Associate Professor

Byram Bridle

BSc, MSc, PhD Guelph - Associate Professor

Jeff Caswell

DVM, DVSc Guelph, PhD Saskatchewan, Diplomate ACVP - Professor and Graduate Program Coordinator

Robert A. Foster

BVSc (Hons) Queensland, PhD James Cook Univ. of North Queensland, MANZCVS, Diplomate ACVP - Professor

## Claire Jardine

BSc Guelph, MSc British Columbia, DVM, PhD Saskatchewan - Associate Professor Brandon N. Lillie

DVM, PhD Guelph, Diplomate ACVP - Associate Professor

John S. Lumsden

BSc, DVM, MSc, PhD Guelph, MANZCVS, Diplomate ACVP - Professor

**Bonnie A. Mallard** BSc, MSc, PhD Guelph - Professor

## Andrew S. Peregrine

BVMS, PhD, DVM (Hons.) Glasgow, Diplomate EVPC, Diplomate ACVM - Associate Professor

**Brandon L. Plattner** 

BSc, DVM Kansas State, PhD Iowa State, Diplomate ACVP - Associate Professor

#### Nicole Ricker

BSc Guelph, MSc, PhD Toronto - Assistant Professor

#### Shayan Sharif

DVM Tehran, PhD Guelph - Professor and Associate Dean, Research and Innovation, Ontario Veterinary College

#### Leonardo Susta

DVM Perugia, PhD Georgia, Diplomate ACVP - Assistant Professor

# J. Scott Weese

DVM, DVSc Guelph, Diplomate ACVIM - Professor January 28, 2020 BSc, PhD Guelph - Associate Professor Associated Faculty Moussa Sory Diarra PhD Laval - Research Scientist, Agriculture and Agri-Food Canada, Guelph Christopher Dutton BSc Bristol, MSc London - Head of Veterinary Services, Toronto Zoo

DVM Guelph, PhD Toronto, DVSc Guelph - Associate Professor

Vahab Farzan

# DVM Tehran, MSc PhD Guelph - Research Associate, Population Medicine, University of Guelph

DVM Prince Edward Island, DVSc Guelph, Diplomate ACVP - Associate Professor

# Billy Hargis

**R. Darren Wood** 

Geoffrey A. Wood

K. Sarah Wootton

M.S. University of Georgia, DVM, PhD University of Minnesota - Professor, Department of Poultry Science, University of Arkansas, Fayetteville

#### Khalil Karimi

DVM Shiraz, PhD Utrecht - Research Associate, Department of Pathobiology, Guelph Ravi Kulkarni

MSc Izatnagar, PhD Guelph - North Carolina State University

#### Janet I. MacInnes

BSc Victoria, PhD Western Ontario - Professor (retired), Pathobiology, University of Guelph

#### Craig Mosley

BSc, DVM, MSc Guelph - Clinical Veterinarian Anesthesiologist, VCA Canada, Newmarket

Eva Nagy DVM, PhD, DSc Budapest - Professor (retired), Pathobiology, University of Guelph

#### Nicole Nemeth

DVM, PhD Colorado State University - Assistant Professor, Pathology, University of Georgia

## Nicholas Ogden

BVSc Liverpool, DPhil Oxford - Senior Research Scientist, Public Health Agency of Canada

#### John Prescott

BA, MA, VETMB, PhD Cambridge - University Professor Emeritus, Pathobiology, University of Guelph

## Dale A. Smith

DVM, DVSc Guelph - Professor Emerita, Pathobiology, University of Guelph

#### **Durda Slavic**

DVM Zagreb, MSc, PhD Guelph - Veterinary Bacteriologist, Animal Health Laboratory, University of Guelph

#### Patricia Turner

BSc McMaster, MSc Dalhousie, DVM, DVSc Guelph, Diplomate ACLAM, Diplomate ABT - Charles River Laboratories

#### Csaba Varga

DVM Cluj Napoca, MSc Cluj Napoca and Guelph, PhD Guelph - Lead Veterinarian Poultry Diseases, OMAFRA, Guelph

# 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 a 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. The Academic and Professional Skills in Pathobiology course PABI\*6430 and the MSc Seminar in Pathobiology course PABI\*6440 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 the Academic and Professional Skills in Pathobiology course PABI\*6430 and the Doctoral Seminar in Pathobiology course PABI\*6450, 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 the course PABI\*6450, Graduate Seminar in Pathobiology. 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 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 listing for more information.

## Toxicology

The Department of Pathobiology participates in the masters 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 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*6630 Applied Comparative Pathology I U [0.50]		
General		Introductory course in the diagnostic pathology of mammals, birds, reptiles, amphibians,		
PABI*6430 Academic and Professional Skills in Pathobiology S.F [0.00]		and fish. Cases may be restricted by animal taxa or context (e.g., free-ranging Canadian wildlife, zoological collections, aqueoutrue). The three comparison is Applied		
Students will be introduced to fundamental elements of scientific research and		Comparative Pathology builds in expected level of accomplishment.		
communication a	and to various academic skills through lectures, seminars, and completion	Restriction(s):	Veterinarians licensed by CVO. Students who are not DVM students	
of in class activities be discussed.	ties. Throughout the course, relevant ethical, and regulatory issues will	Donartmont(s);	and/or do not have a protective rabies titre need instructors permission.	
Department(s):	Department of Pathobiology	Department(s):	Jied Comparative Pathology II U [0.50]	
PABI*6440 MSc Seminar in Pathobiology S,F,W [0.50]		PABI*6640 Applied Comparative Pathology II U [0.50]		
Students register	red in the MSc program will develop a written critical review of the	and fish. Cases n	have be restricted by animal taxa or context (e.g., free-ranging Canadian	
literature and plan for their thesis research. This material will also be presented in the		wildlife, zoological collections, aquaculture). The three-semester course in Applied		
form of a public seminar. Students are also required to provide oral and written critical reviews of thesis plan presentations.		Comparative Pathology builds in expected level of accomplishment.		
Prerequisite(s):	PABI*6430	Restriction(s):	Veterinarians licensed by CVO. Students who are not DVM students	
Department(s):	Department of Pathobiology		and/or do not have a protective rabies titre need instructors permission.	
PABI*6450 Doc	ctoral Seminar in Pathobiology S,F,W [0.50]	Department(s):	Department of Pathobiology	
Students register	red in the PhD or DVSc programs will develop a written critical review	PABI*6650 Applied Comparative Pathology III U [0.50]		
the form of a pub	blic seminar. Students are also required to provide oral and written critical	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		
reviews of the th	esis plan presentations of other students.	wildlife, zoolog	ical collections, aquaculture). The three-semester course in Applied	
Prerequisite(s):	PABI*6430	Comparative Pat	hology builds in expected level of accomplishment.	
Department(s):	Department of Pathobiology	Prerequisite(s): Restriction(s):	PAB1*0630 PAB1*6640 Veterinarians licensed by CVO Students who are not DVM students	
rABI*0900 Spe	cial topics in Pathodiology F, W, 5 [0.50]	icon renon(s).	and/or do not have a protective rabies titre need instructors permission.	
paper(s), laborate	ory studies, and/or written and oral examination, with or without seminar	Department(s):	Department of Pathobiology	
preparation.		PABI*6700 Lab	oratory Animal Science U [0.50]	
Restriction(s):	Instructor consent required.	Basic information	on on various aspects of laboratory animal science, including IACUC	
Department(s):	Department of Pathodology	and alternatives,	experimental design and considerations, biology, management and uses	
Comparative		of common spec	ies in research.	
PABI*6050 App	blied Avian Pathology I F [0.50]	Restriction(s):	Instructor consent required.	
Examination and	Interpretation of gross and microscopic resions of domestic poulity.	Department(s):	Jied Laboratory Animal Science LU [0.50]	
Kestriction(s).	who are not DVM students and/or do not have a protective rebies titra	radi <sup>.</sup> 0/10 App	neu Laboratory Annnai Science I U [0.50]	
	who are not DV W students and/or do not have a protective rables three	This course will	emphasize practical aspects of laboratory animal science including	
D ()	need instructors permission.	This course will research protoco	emphasize practical aspects of laboratory animal science including review, writing and reviewing standard operating procedures, animal	
Department(s):	need instructors permission. Department of Pathobiology	This course will research protoco monitoring, path	l emphasize practical aspects of laboratory animal science including l review, writing and reviewing standard operating procedures, animal ology procedures, and case management.	
Department(s): <b>PABI*6060</b> App	need instructors permission. Department of Pathobiology Died Avian Pathology II W [0.50]	This course will research protoco monitoring, path <i>Restriction(s):</i>	emphasize practical aspects of laboratory animal science including review, writing and reviewing standard operating procedures, animal ology procedures, and case management. Instructor consent required. Department of Pathobiology	
Department(s): <b>PABI*6060 App</b> A continuation of diseases more co	who are not by W students and/of do not have a protective rables three need instructors permission.         Department of Pathobiology <b>blied Avian Pathology II W [0.50]</b> of PABI*6050, emphasizing seasonal differences in diseases as well as permonly associated with winter conditions.	This course will research protoco monitoring, path <i>Restriction(s):</i> <i>Department(s):</i> <b>PABI*6720 App</b>	<ul> <li>emphasize practical aspects of laboratory animal science including</li> <li>l review, writing and reviewing standard operating procedures, animal</li> <li>ology procedures, and case management.</li> <li>Instructor consent required.</li> <li>Department of Pathobiology</li> </ul>	
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# Veterinary Infectious Diseases

# PABI\*6000 Bacterial Pathogenesis F [0.50]

An overview of key concepts in bacterial pathogenesis with emphasis on veterinary and zoonotic pathogens.
Department(s): Department of Pathobiology
PABI\*6330 Viral Diseases F [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.

*Offering(s):* Offered in odd-numbered year *Department(s):* Department of Pathobiology

### PABI\*6350 Molecular Epidemiology of Bacterial Diseases F [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.

Prerequisite(s):	STAT*2040 Statistics I
Restriction(s):	Lab component: limited number of participants and WHIMIS certificate
	compulsory.

Department(s): Department of Pathobiology

### PABI\*6550 Epidemiology of Zoonoses W [0.50]

Characterization and distribution of diseases common to people and animals. *Department(s):* Department of Pathobiology

#### Veterinary Pathology

## PABI\*6030 Applied Clinical Pathology I F,W,S [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.) *Restriction(s):* Veterinarians licensed by CVO.

Department(s): Department of Pathobiology

# PABI\*6040 Applied Clinical Pathology II U [0.50]

A continuation of PADI\*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).

Prerequisite(s):PABI\*6030Restriction(s):Veterinarians licensed by CVO.Department(s):Department of Pathobiology

### PABI\*6041 Applied Clinical Pathology III U [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)

Prerequisite(s):PABI\*6030 and PABI\*6040Restriction(s):Veterinarians licensed by CVO.Department(s):Department of Pathobiology

### PABI\*6080 Diagnostic Pathology I S,F,W [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.)

 Restriction(s):
 Instructor consent required. Veterinarians licensed by CVO, engaged in applied anatomic pathology training

 Department(s):
 Department of Pathobiology

Department of Fathology

# PABI\*6090 Diagnostic Pathology II S,F,W [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.)

Prerequisite(s):	PABI*6080			
Restriction(s):	Veterinarians licensed by CVO, engaged in applied anatomic pathology			
	training			
Department(s):	Department of Pathobiology			
DADI*6001 Diagnostia Dathology III S E W [0 50]				

PABI\*6091 Diagnostic Pathology III S,F,W [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.) Prerequisite(s): PABI\*6080and PABI\*6090 Restriction(s): Veterinarians licensed by CVO, engaged in applied anatomic pathology

*Department(s):* Department of Pathobiology

Principles and applications of veterinary hematology and cytology, with emphasis on the hematopoietic systems.

*Restriction(s):* Veterinarians licensed by CVO. *Department(s):* Department of Pathobiology

PABI\*6104 Mechanisms of Disease W [0.50]

## PABI\*6320 Clinical Pathology II W [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. *Restriction(s):* Veterinarians licensed by CVO.

Department(s): Department of Pathobiology