



ZOO*3000 Comparative Histology

Fall 2019

Section(s): C01

Department of Integrative Biology

Credit Weight: 0.50

Version 2.00 - August 07, 2019

1 Course Details

1.1 Calendar Description

This course provides an introduction to the microscopic structure of the major organ systems of the vertebrate body. Beginning with an examination of epithelial, connective, muscular, and nervous tissues, the course then examines the comparative histology of the circulatory, nervous, digestive, integumentary, respiratory, excretory, reproductive, endocrine, and sensory systems of vertebrates.

Pre-Requisites: ZOO*2090

1.2 Course Description

Comparative Histology is primarily a content-driven course. The course provides a basic knowledge of the cell and tissue types of the vertebrate body, primarily concentrating on mammalian tissues. It is assumed that each student has a solid background in (a) the anatomy of the vertebrate body and (b) the physiology of its organs. Please review this material as it will only be briefly mentioned in lectures.

1.3 Timetable

Lectures: 10:00-11:20h Tuesday/Thursday. Room THRN 1307.

**First lecture Thursday September 5

Labs: 14:30-17:20h Monday/Tuesday Room SSC 2313

**First laboratory session Monday/Tuesday September 9/10

1.4 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Frederic Laberge
Email:	flaberge@uoguelph.ca
Telephone:	+1-519-824-4120 x56238
Office:	SSC 1465
Office Hours:	By appointment
Lab Co-ordinator:	Colin DeMill
Email:	cdemill@uoguelph.ca
Telephone:	+1-519-824-4120 x56557
Office:	SSC 2505

3 Learning Resources

Evaluation will be in the form of a short assignment on the topic of histology in the news or a histology technique, a mid-term exam and final lecture and laboratory exams. In all cases, you will be expected to write using complete sentences and proper grammar. Work should be presented in a well organized fashion.

The mid-term exam and final lab exam will be written during class and laboratory time, respectively. For part of the lab exam, labelled class slides will be provided and you will be required to demonstrate cells, primary tissues or components of organs and organ systems to the instructors. Questions, both short answer and longer essay types, will test **both** your control of the factual content of the course **and** laboratory content.

3.1 Required Resources

Histology. A Text and Atlas. (Textbook)

Ross, M.H., Pawlina, W. Histology. A Text and Atlas. 8th, 7th, 6th, 5th or 4th Ed. Lippincott, Williams & Wilkins, New York.

(OR other text approved by instructors)

ZOO*3000 Comparative Histology Laboratory Manual (Textbook)

(Sold in the first week of class, **\$10 in cash**)

3.2 Additional Resources

Course Resources (Notes)

"Lecture notes" will be provided on the course website. It is not necessary for students to use these lecture notes unless they feel they will be useful. It is essential to study the material covered in the laboratory sessions to acquire a basic understanding of histology. However, a personal perspective will only be developed by reading the required text. This reading should be done on a regular basis, should take at least one (1) hour per week, and should keep up with the lecture topics. As a general rule, students should spend as much time out-of-class each week reading and reviewing as they do in class: for this course, this means **on average** at least five (5) hours per week.

3.3 Campus Resources

If you are concerned about any aspect of your academic program:

Make an appointment with a program counsellor in your degree program.

<http://www.bsc.uoguelph.ca/index.shtml> or

<https://www.uoguelph.ca/uaic/programcounsellors>

If you are struggling to succeed academically:

There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>

If you are struggling with personal or health issues:

Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.

<https://www.uoguelph.ca/counselling/>

Student Health Services is located on campus and is available to provide medical attention.

<https://www.uoguelph.ca/studenthealthservices/clinic>

For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.uoguelph.ca/~ksomers/>

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Identify and name the four primary tissues of the vertebrate body and explain how the form and function of these tissues are related.
2. Identify and name the basic tissue constituents of the major organs and organ systems

- of vertebrates. Explain how their form and function are related.
3. Be able to assess the histology of the tissues of non-mammalian vertebrates by comparison with the mammalian model.
 4. Name the steps in fixation, staining, and histochemistry of tissues and explain the physical and chemical bases of these procedures.
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5 Teaching and Learning Activities

5.1 Lecture

Topics:

Lecture Topics

- Introduction, Intercellular Substances and Primary Tissues
- Epithelia
- Connective Tissue Proper
- Cartilage and Bone
- Blood and Hemopoiesis
- Muscle
- Blood Vascular System
- Lymph Vascular System
- Fixation and Staining
- Histochemistry
- Nervous System
- Digestive System
- Integuments
- Respiratory System
- Urinary System
- Reproductive Systems (male/female)
- Endocrine Systems
- Organs of Special Sense

5.2 Lab

Topics:

Laboratory Exercises

Sept. 9/10 Lab 1: The Microscope/ Epithelia/ Connective Tissue General

Sept. 16/17 Lab 2: Specialized Connective Tissue: cartilage, bone

Sept. 23/24 Lab 3: Blood and Bone Marrow/ Muscle

Sept. 30/Oct. 1 Lab 4: Blood Vascular System/ Lymph Vascular System

Oct. 7/8 Lab 5: Nervous System

Oct. 14/15 Holidays: No labs

Oct. 21/22 Lab 6: Digestive System: Digestive tract

Oct. 28/29 Lab 7: Digestive System: Associated glands/ Respiratory System

Nov 4/5 Lab 8: Integument/Organs of Special Sense

Nov. 11/12 Lab 9: Urinary System/Male Reproductive System

Nov. 18/19 Lab 10: Female Reproductive System/Endocrine System

Nov. 25/26 Final Lab Exam (in SSC 2313)

5.3 Important Class Days

First Class - 10:00h Thursday September 5 – Room THRN 1307

First Laboratory - 1430h Monday 9th or Tuesday 10th September – Room SSC 2313

LABS CANCELLED FOR WEEK OF October 14-18

6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Short Assignment	10
Midterm Exam	20
Final Lab Exam	30
Final Written Exam	40
Total	100

6.2 Assessment Details

Short Assignment (10%)

Date: Fri, Nov 1

Midterm Exam (20%)

Date: Thu, Oct 24, THRN 1307
In class - 10:00am

Final Lab Exam (30%)

Date: , SSC 2313
November 25th or 26th - 14:30h

Final Written Exam (40%)

Date: , Time and Place TBA

7 Department of Integrative Biology Statements

7.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

7.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

7.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work

through personal struggles that may be impacting their academic performance.

<https://www.uoguelph.ca/counselling/>

- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.selfregulationskills.ca/>

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

More information can be found on the SAS website

<https://www.uoguelph.ca/sas>

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community—faculty, staff, and students—to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>
