

**University of Guelph
College of Biological Sciences
Department of Integrative Biology**

**COURSE OUTLINE
COMPARATIVE HISTOLOGY (ZOO*3000)
FALL 2015**

Teaching Team

Professor Nicholas Bernier, Office SCIE 3467, nbernier@uoguelph.ca, ext. 56093
Office hours: by appointment

Lab Instructor Colin DeMill, Office SCIE 3511, cdemill@uoguelph.ca, ext. 56557

Teaching Assistant TBA

Course Schedule

Lectures: 10:00-11:20h Tuesday/Thursday. Room MCKN 117
 **First lecture Thursday September 10th

Labs: 14:30-17:20h Monday/Tuesday Room SCIE 2313
 **First laboratory session Monday/Tuesday September 14/15

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.

Learning Outcomes

By the end of this course, students 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.

Resources

"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 topics covered in these lecture notes and 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.

Texts:

- required Pawlina, W. Histology. A Text and Atlas.
7th Ed (2016), 6th Ed (2011) or 5th Ed (2006).
Wolters Kluwer Health (7th Ed) and Lippincott, Williams & Wilkins (5th & 6th Ed)
(OR other text approved by instructors)

- required ZOO*3000 Comparative Histology Laboratory Manual
(sold in the first week of class, **\$10 in cash**)

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

Laboratory Exercises

Sept. 14/15 Lab 1. The Microscope/ Epithelia/ Connective Tissue General
Sept. 21/22 Lab 2. Specialized Connective Tissue: cartilage, bone
Sept. 28/29 Lab 3. Blood and Bone Marrow/ Muscle
Oct. 5/6 Lab 4. Blood Vascular System/ Lymph Vascular System
Oct. 12/13 Holiday, no labs
Oct. 19/20 Lab 5. Nervous System
Oct. 26/27 Lab 6. Digestive System: Digestive tract
Nov. 2/3 Lab 7. Digestive System: Associated glands/ Respiratory System
Nov. 9/10 Lab 8. Integument/Organs of Special Sense
Nov. 16/17 Lab 9. Urinary System/Male Reproductive System
Nov. 23/24 Lab 10. Female Reproductive System/Endocrine System
Nov. 30 / Dec. 1 Final Lab Exam (in SCIE 2313)

Review of Lab Material: As the laboratory component of the course is worth a substantial amount of the final grade, it is expected that students will attend laboratories and use the full time allotment of 3 hours. The laboratory room is used by other courses and alternate times to use the laboratory are limited. Extra time for review will be available by **APPOINTMENT ONLY** (see Instructor). Please note that the laboratory **WILL NOT** be available on weekends or evenings. Do not leave your study of the laboratory material to the weekend or evening before the laboratory exams as the laboratory will not be open! It is up to you, the student, to use effective time management skills and to use the laboratory resources in the scheduled time slots.

Methods of Evaluation

Evaluation will be in the form of a short assignment on the topic of histology in the news, 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.

Important Class Days

First Class - 10:00h Thursday September 10th – Room MCKN 117
First Laboratory - 14:30h Monday 14th or Tuesday 15th September – Room SCIE 2313
LABS CANCELLED FOR WEEK OF October 12-16

Exam Schedule

Short assignment	-Due October 30 th	
Mid-term exam	-10:00h, October 22 nd in class	- Room MCKN 117
Final lab exam	-14:30h, Nov. 30 / Dec. 1	- Room SCIE 2313
Final written exam	- Date and Room TBA	

Mark Allocation

Short assignment	10%
Mid-term exam	20%
Final lab exam	30%
Final written exam	40%

Important Policies and Procedures

When You Cannot Meet a Course Requirement

Students who are absent from classes during the semester will be expected to make up for missed lecture and lab material on their own. Students who do not write the mid-term or final lab exam for medical or other authorized reasons will **not** be assigned a separate test, but will have their final mark based on a proportionate adjustment of their completed term work. When, for legitimate reasons, an exam is missed, **make sure** that you have given the instructor supporting documentation in writing, with your name, id#, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration:

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

Drop Date

The last date to drop one-semester courses, without academic penalty, is November 6th, 2015.

For regulations and procedures for Dropping Courses, see the Undergraduate Calendar:

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

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.

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment.

Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Academic Misconduct

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 discourages misconduct. 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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Recording of Materials

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

Academic Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs:
<http://www.uoguelph.ca/registrar/calendars/index.cfm?index>