

BIOLOGY
SC/BIOL 4220 4.0 HISTOLOGY

Fall 2012

Calendar description: Structure and function of tissues in the vertebrates, with special emphasis on human histology. The laboratory deals with general histological and histochemical techniques, such as tissue fixation, sectioning and staining, and the localization of enzymes.

Objectives and Expected Outcomes of this Course:

Histology is the science of tissues (Greek; *Histos* means web or tissue and *logia* means branch of learning). Using various techniques, histology establishes connections between microscopic structure of cells and tissues and their functions. The main objective of this course is to provide students with theoretical and practical knowledge in Histology. At the end of this course, students are expected to have a solid understanding of microanatomy of various cells, tissues and organs in normal humans and some understanding of abnormal (pathological) conditions. In the lab component, students will be able to perform various fixation and staining procedures and use a microscope to analyze the microstructure of tissues. In addition, a computer assisted, electron/ordinary micrographs based training to identify histology and histopathology of tissues is included in the lab component.

Prerequisites: SC/BIOL 2020 4.0 and SC/BIOL 2021 4.0.

Course Director: Dr. Rodney A. Webb
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(email will be answered, where possible, within 36 hrs). Responses to email enquiries for materials available in the course outline/lecture schedule will be terse.

Office Hours: General Office hours and location will be announced.

Assignments and Number Grades:

| | |
|------------------------|-------------|
| Mid-Term Exam | 20% |
| Lab Assignments | 25% |
| Lab Exam (Final) | 10% |
| Final Exam | 45% |
| ----- | |
| TOTAL | <u>100%</u> |

The final exam is not cumulative, and will focus on all topics covered post-midterm exam.

Grading, Assignment Submission, Lateness Penalties and Missed Tests

Grading: The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.)

(For a full description of the York grading system see the York University Undergraduate Calendar - http://calendars.registrar.yorku.ca/pdfs/ug2004cal/calug04_5_acadinfo.pdf)

Late submissions- Lab exams must be submitted by the due date – they will not be accepted after the due date..

Missed Exams and Lab Assignments: Any student who is absent from the mid-term or lab exam will receive a grade of zero for the missed exam.

Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., detailed doctor's letter) may request accommodation from the Course Instructor. Submission of documentation does not mean accommodation will automatically be provided.

Further requests for accommodation will require students to submit a formal petition to the Faculty

Lectures: Tuesdays and Thursdays, 1:00 – 2:30 pm, 105 LSB

Labs: Location: Room 204, Farquharson Life Sciences Building (FRQ 204).

Lab 01: Tuesday 2:30 – 5:30 pm

Lab 02: Wednesday 2:30 – 5:30 pm

Lab 03: Thursday 2:30 – 5:30 pm

Lab 04: Monday 2:30 – 5:30 pm (Held in reserve – this lab will not be filled).

Lab attendance is mandatory.

You must bring a safety glass and a lab coat to all lab sessions or you will not be allowed into the lab.

Prepared slides and electron micrographs must not be removed under any circumstances from the lab.

THE LAB COMPONENT IS VERY HEAVY AND REQUIRES SELFDIRECTED INDEPENDENT WORK OUTSIDE THE REGULAR LAB HOURS.

Textbook: *Histology – A Text and Atlas*
Authors: Michael H. Ross and Wojciech Pawlina
Publisher: Lippincott, Williams and Wilkins
Sixth Edition (*available in the York bookstore*)

(The majority of the course content will be based on this textbook, and students can buy this from the bookstore. Purchase of the textbook is not mandatory. A number of additional books and resources can be consulted for specific topics – see below.)

Important Dates (for FALL 2012 courses):

Last date to enroll in the course without instructor's permission: September 15

Last date to enroll in the course with instructor's permission: October 2

Last date to drop courses without receiving a grade: November 9

Fall classes end: December 3

Fall exams begin: December 5

Fall exams end: December 21

IMPORTANT COURSE INFORMATION FOR STUDENTS

- All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (see Reports, Initiatives, Documents) - http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm
- York's Academic Honesty Policy and Procedures/Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities - Students with physical, learning or psychiatric disabilities who require reasonable accommodations in teaching styles or evaluation methods should discuss this with the Course Director immediately so that appropriate arrangements can be made.

·Student Conduct Standards

·Religious Observance Accommodation

Accessibility - I welcome feedback on any aspect of the course at any time, including any comments you may have on accessibility

Students are also expected to know the lecture and lab schedule, deadlines for lab assignments, and lab and lecture exam dates – below:

Tentative Lecture Schedule: see separate document.

Note: The course director will attempt to post some of the lecture materials online in the course website (available in Moodle) before 12 noon prior to the lectures.

Reference Books (mainly intended for lab reports and supplementary reading):

The following books will be placed on RESERVE in the Steacie Science Library, and will serve as a good reference source for the lectures as well as labs. Borrowing privileges will be revoked if the reference materials are abused.

1. From Cells to Organs: A Histology Textbook and Atlas Alfons T.L. van Lommel (2003)
2. Histology: A Text and Atlas; Michael H. Ross and Wojciech Pawlina Fifth Edition (2007)
3. Atlas of Functional Histology; Jeffrey B. Kerr (1999)
4. Wheater's Functional Histology: A Text and Colour Atlas Barbara Young (2000)
5. Bloom and Fawcett's Concise Histology Dawn W Fawcett and Ronald P. Jensch (2002)
6. Color Textbook of Histology Leslie P. Gartner and James L. Hiatt
7. Di Fiore's Atlas of Histology with Functional Correlations Victor P. Eroschenko (2000)
8. Theory and Practice of Histological Techniques John D. Bancroft and Marilyn Gamble (2002)
9. Microscopy and Histology for Molecular Biologists: A User's Guide J.A. Keirnan and I. Mason (2002)
10. Enzyme Histochemistry J.D. Bancroft and N.M.Hand (1987)
11. Histochemistry- Theoretical and Applied – Volumes I (1980) and II (1985) A.G. Everson Pearse
12. Histochemistry: The Widening Horizons of Its Applications in the Biomedical Sciences; Peter J. Stoward and Julia M. Polak (1981)
13. Atlas of Human Histology; Mariano S.H. Di Fiore (1981)
14. Synthetic Dyes in Biology, Medicine and Chemistry; Edward Gurr (1971)
15. The Rationale of Dyes in Biology and General Staining Methods; Edward Gurr (1965)
16. An Introduction to Histochemical Techniques; J.D. Bancroft (1967)
17. Staining: Practical and Theoretical; Edward Gurr (1962)
18. Principles of Biological Microtechniques: A Study of Fixation and Dyeing John Randal Baker (1958).