MLSCI 250 - Human Histology and Histotechnology

Overview / General information

MLSCI 250 (Human Histology and Histotechnology) is meant to serve as an introductory course for the study of normal human histology and histotechnique. The course also includes some basic pathology and application of histological techniques to aid in recognition of diagnostic features of various human disease processes.

The goals of the course, in general, are to have students review and understand concepts such as the structure and functions of cells, and building on this, the functions and components (tissue structure) of the organ systems. The students will be expected to recognize tissues and their distinctive features and to have some exposure to cell/tissue recognition by electron microscopy. Roughly 40% of the time is dedicated to preparation of the tissue materials, including learning about tissue preservation and fixation, processing, and staining.

The course experience is based on blended learning, which in this case encompasses on-line resources (eClass), face to face (lecture), individual, and laboratory based experiences. Lectures are utilized to illustrate the basic principles, including some anatomy and physiology as well as histological aspects. The ability to recognize tissues and their distinguishing features will occur primarily in the laboratory sessions with support provided by the lectures. Students are expected to gain detailed knowledge about the subject from both a theoretical and practical standpoint.

Your participation in eClass is an important part of the course, as are the lectures and labs. Your microanatomy pre-lab questions are to be completed in eClass or written form, prior to the appropriate laboratory sessions. If you have any questions about using eClass or if you encounter any user issues please do not hesitate to ask. There are other learning tools which you are encouraged to use throughout the course, such as Histoquest. Histoquest will also be available to you throughout your MLS program.

Course Coordinator / Instructor(s)

Microanatomy Coordinator:       Histotechnique Coordinator:
Roberta Martindale              Amanda VanSpronsen
5-413 ECHA                    5-399 ECHA
(780) 492-0990                (780) 492-0989
roberta.martindale@ualberta.ca amanda.vanspronsen@ualberta.ca

Course Competencies

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<tr>
<td>A</td>
<td>To apply lecture material of structure and function to the microscopic appearance of tissues. (3.14)</td>
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<td>B</td>
<td>To learn to recognize tissue microarchitecture at the level of the light microscope. (3.01, 3.14, 3.24)</td>
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<td>C</td>
<td>To develop a concept of normal tissue patterns. (3.14)</td>
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<td>D</td>
<td>To become technically able to create stained microscope slides of tissue sections. (4.20, 4.20.01, 4.21, 4.21.01, 4.22)</td>
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<td>E</td>
<td>To be able to troubleshoot common problems encountered at all stages of histotechnology, including fixation, processing, embedding, microtomy, and staining. (4.20.02, 4.21.02, 6.08, 6.09)</td>
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<td>To become aware of other diagnostic techniques, including electron microscopy, special histochemical stains, and immunohistochemistry.</td>
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<td>To gain an appreciation for the safety considerations needed for the chemical, physical, and biological hazards of the histology lab (1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.07)</td>
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<td>H</td>
<td>To develop the ability to apply concepts of professionalism, such as resource stewardship and critical thinking, to the working histology laboratory (6.05, 5.02, 6.03, 6.06, 7.01, 8.06)</td>
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Methods of Instruction

The course follows a blended learning experience. Students will attend lectures and laboratory sessions and are expected to utilize online resources such as eClass and Histoquest. While some material is provided to the students in terms of lectures, handouts, manuals etc., they are expected to also source information for themselves and demonstrate self-directed learning skills.

Students are encouraged to ask questions in both lectures and laboratory sessions to facilitate their learning. The microanatomy laboratory sessions will begin with a short slide review in the Phase 1 laboratory. Students should review the podcasts in eClass before the labs as well. Some labs may require podcast review prior to the session. The instructors and teaching assistants will be present in the labs and serve as technical and knowledge resources and will evaluate the students’ practical work.

IMPORTANT:

An average mark of 60% or better in the lab component is required for successful completion of this course. The components of this mark are the following: Microanatomy Quizzes and the Final Practical Exam (see below)

Distribution of Marks

Abbreviations are not accepted on examinations and quizzes. For example, ensure you know the stain names in full; Luxol Fast Blue would be accepted, LFB would not. Spelling counts- marks will be deducted for incorrect spelling.

Lecture 60%
- Histotechnology on-line quizzes 5%
- Midterm Exam - cumulative 20%
- Final Exam - cumulative 35%

Laboratory 40%
- Microanatomy 10%
  - Cumulative, 2 minutes per numbered question (questions may have more than one part) beginning September 27th - 4 in total *There is a practice quiz on September 20th. The practice quiz does NOT count for marks.
  - Final Practical Exam 30%
    - Cumulative, November 30th, (2.5 minutes per numbered question, questions may have more than one part)

*The weekly participation and professionalism assessment, as part of the laboratory evaluation form, is based on student attendance and performance in laboratory sessions and participation, as well as timely completion of any pre-lab questions or assignments in eClass or in written format. Other factors considered focus on professionalism including punctuality, communication, and interpersonal behavior.*

Student Behaviour

Student behaviour at the University of Alberta is guided by the Code of Student Behaviour, available at: http://www.governance.ualberta.ca/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx

This document clearly describes what constitutes inappropriate behaviour, outlines possible sanctions, student rights, and the appeal process. Ignorance of the contents of this document is never an excuse – students are fully responsible for all details, and it should be reviewed at an early occasion. In addition, as MLS is a Professional Program, students are also bound by the profession’s Code of Ethics (CMLTA) and the Code of Professional Conduct (CSMLS) respectively; http://cmlta.org/wp-content/uploads/2012/05/CodeofEthics.pdf and http://csmls.org/About-Us/Who-We-Serve/Code-of-Conduct.aspx
In short, our expectation is that students are honest and respectful. Disruptions that interfere with the learning process of other students, or the instruction of the course, will be addressed promptly.

“The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.” § 23.4(2)a, xii University of Alberta Calendar

"Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s)”. § 23.4(2)e University of Alberta Calendar

One way of communicating with the course instructors is via email. E-mail is the official communication medium outside of class and lab time. Students are responsible for reading ALL email pertaining to MLSCI 250 from the instructors. Check your ualberta email frequently so that important messages are not missed. The instructors will check for students’ emails Monday to Friday during work hours.

Policy about course outlines can be found in Course Requirements, Evaluation Procedures and Grading of the University Calendar. http://calendar.ualberta.ca/content.php?coid=6&navoid=806#course-requirements,-evaluation-procedures-and-grading-a

**Attendance**

Attendance in the laboratory sessions is mandatory! Should you not be able to attend a laboratory session due to significant issues/ difficulties or illness, you MUST notify the MLS office at 492-6601 or the appropriate instructor (see phone numbers above) prior to the laboratory session. **If a student fails to give notification, this may result in a grade of zero on laboratory assignments during the missed laboratory session.**

The student is responsible for ensuring that they review and learn the missed material. If a quiz is missed, the weighting will be transferred to the final practical exam.