



BSC 426 Histology

Course Number: BSC 426; CRN: 21038 (lecture)

Co-requisite: BSC 426L; CRN: 21124 (lab)

COURSE SYLLABUS: Spring 2018

INSTRUCTOR INFORMATION

Instructor: Dr. Kodeeswaran Parameshwaran
Assistant Professor of Biomedical Sciences

Office Location: Science Building, STC 233
Office Hours: Tuesday: 10:00 am – 12:00 pm
Thursday: 10.00 am – 12.00 pm
or by appointment **only**

Office Phone: 903-468-8648
Office Fax: 903-886-5997

University Email Address: kparameshwaran@tamuc.edu

Preferred Form of Communication: Direct during class time or office hours
Communication Response Time: Less than 72 hours for emails (excluding weekends and holidays)

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

Histology-A Text and Atlas (sixth edition) By Michael M. Ross and Wojciech Pawlina

The lectures/discussions/microscopy observations will be related to materials covered in the Ross and Pawlina Text/Atlas. Chapters or parts of chapters will

The syllabus/schedule are subject to change.

be assigned for supplementary reading. This reading will be helpful in understanding and supplementing the materials covered in class.

Software Required: Please see technology requirements.

Optional Texts and/or Materials: NA

Course Description

Histology is a discipline which examines the structure and correlating functions of tissues and cells using light microscopy, electron microscopy and other specialized microscopic methods. The course will involve a study of general tissue characteristics and will explore histologically and ultrastructurally the different tissue types in the body including epithelial, connective, skeletal, blood/vascular, muscular, and neurological tissues as well as the various organ systems including cardiovascular, lymphatic, integumentary (skin), digestive, respiratory, urinary, endocrine, male and female reproductive, and special senses (eye and ear). While the course's emphasis will be a study of the appearance of normal cells and tissues, selected abnormal/diseased tissues will be examined as well (e.g., bone osteoporosis, heart myocardial infarctions, neurological diseases, etc.) and functional correlations will be made.

Student Learning Outcomes

Upon completing the course, students will be able to:

1. Demonstrate proficiency and expertise in the proper use of the light microscope in examining histological specimens on glass slides.
2. Understand the basic concepts of tissue fixation, dehydration, embedding, sectioning, staining and mounting of slides for histological examination, immunofluorescent staining and electron microscopy.
3. Recognize, identify and describe the characteristic structures of cells, tissues and organ systems of the body at the light microscope histologic level, and for selected tissues, at the electron microscopic ultrastructural level.
4. Know and understand the characteristics of tissues of the body (epithelium, connective, muscle, nerve) and their relationships in the various organ systems of the human body.
5. Understand the basic functions of cells and cellular organelles, tissues and organ systems of the body as correlated with their histological structures.

The syllabus/schedule are subject to change.

6. Identify and understand the histological features of selected tissues/organ systems resulting from disease processes (e.g., atherosclerosis, osteoporosis, pulmonary pneumonia, etc).

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Standard skills necessary to use web browsers to access course materials is required. Students should also be able to upload their work as necessary.

Instructional Methods

Formal lectures and labs will be supplemented with appropriate audiovisual materials, and home assignments. I will post announcements on the home page of the course (eCollege) for reminders of important due dates or announce them in the class, posted in eCollege or send email notifications.

Student Responsibilities or Tips for Success in the Course

Regular attendance

Submitting assignments before deadlines

If special accommodations need to be made notifying the instructor in advance

Checking both eCollege and emails for course related announcements

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

Assessments

You are expected to attend ALL scheduled lectures and labs and take the exams/quizzes as scheduled. There will be a 5 point credit for attendance. Excused absences as defined in the Student Handbook of the university will be accepted.

Methods of Assessment

The syllabus/schedule are subject to change.

There will be three types of assessments that will contribute to the grade.
These are:

1. Quizzes
2. Exams
3. Essay and Presentation

Distribution:

Quiz	= 25% (5 quiz; 5%/quiz)
Exams	= 30% (3 exams; 10%/exam)
Attendance, classroom participation and conductance*	= 5%
Essay and presentation	= 10%
Final Exam*	= 30%

* Practical grades will be added to the final. Students are expected to attend regularly and participate in the learning process. Use of cell phones or similar devices for checking social media or for any other non-course related activity will result in zero points.

Essay and Oral Presentation: A required 2-3 page typed (double spaced) essay will contribute 5%. Such activities as writing an essay on some histological concept, doing an in depth literature search on a disease process that is relevant to histology, writing a detailed description of a specialized histological technique and its use in research (e.g., immunofluorescent antibody staining; laser confocal microscopy; immunoelectron microscopy etc.), an essay on work done to develop a certain histological concept, the use of a selected histological technique(s) to analyze a clinical or research problem (e.g., how histology may be used to detect certain kinds of cancers or how histology is used to determine where specific proteins or nucleic acids are located in cells and tissues, etc.). A five minute oral presentation based on this essay will be made to the class followed by questions from the class.

Exams and quizzes consist of multiple choice questions. Questions are drawn from the same test pool. Therefore some questions may be repeated. Students will take exams and quizzes in the classroom. There will be practicals during lab time. These scores will be added to the final exam.

Important information:

1. There will not be any additional points extra credits. A student's grade will come only from the points he/she earns in the three types of assessments.
2. All assignments should be submitted before the deadlines. Late submissions will automatically receive ZERO points.
3. No requests to open the exams or quizzes earlier will be accepted.
4. All requests for make-up exams/quizzes must accompany supporting documents (e.g. a doctor's note). Such requests should be made within two

The syllabus/schedule are subject to change.

days after missing the exam/quiz. The reasons for not taking an exam/zero within the designated should be acceptable, as outlined in your student handbook. Forgetting to take the exam/quiz will not be an acceptable reason. 5. It is the students' responsibility to check emails and eCollege for exam/quiz dates and assignment postings & deadlines.

TECHNOLOGY REQUIREMENTS

This section is a comprehensive description. In most cases a good computer with MS Office, updated web browser and a secure internet connection is all what students will need.

- To fully participate in online courses you will need to use a current Flash enabled internet browser. For PC and Mac users the suggested browser is Mozilla Firefox.
- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required courses are heavily video intensive
 - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a:
 - Sound card, which is usually integrated into your desktop or laptop computer
 - Speakers or headphones.
 - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.
- Run a browser check through the Pearson LearningStudio Technical Requirements website. [Browser Check http://help.ecollege.com/LS_Tech_Req_WebHelp/en-us/#LS_Technical_Requirements.htm#Browsset](http://help.ecollege.com/LS_Tech_Req_WebHelp/en-us/#LS_Technical_Requirements.htm#Browsset)

Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.
JavaScript is enabled.
Cookies are enabled.

The syllabus/schedule are subject to change.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - [Adobe Reader](https://get.adobe.com/reader/) <https://get.adobe.com/reader/>
 - [Adobe Flash Player](https://get.adobe.com/flashplayer/) (version 17 or later) <https://get.adobe.com/flashplayer/>
 - [Adobe Shockwave Player](https://get.adobe.com/shockwave/) <https://get.adobe.com/shockwave/>
 - [Apple Quick Time](http://www.apple.com/quicktime/download/) <http://www.apple.com/quicktime/download/>
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.
- For additional information about system requirements, please see: [System Requirements for LearningStudio](https://secure.ecollege.com/tamuc/index.learn?action=technical) <https://secure.ecollege.com/tamuc/index.learn?action=technical>

ACCESS AND NAVIGATION

Pearson LearningStudio (eCollege) Access and Log in Information

This course will be facilitated using Pearson LearningStudio, the learning management system used by Texas A&M University-Commerce. To get started with the course, go to [myLeo](#) and from the top menu ribbon select eCollege. Then on the upper left side of the screen click on the My Courses tab. <http://www.tamuc.edu/myleo.aspx>

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: It is strongly recommended you perform a “Browser Test” prior to the start of your course. To launch a browser test login to Pearson LearningStudio, click on the My Courses tab, and then select the Browser Test link under Support Services.

Pearson LearningStudio Student Technical Support

Texas A&M University-Commerce provides students technical support for the use of Pearson LearningStudio.

Technical assistance is available 24/7 (24 hours, 7 days a week).

The syllabus/schedule are subject to change.

If you experience LearningStudio (eCollege) technical problems, contact the LearningStudio helpdesk at 1-866-656-5511 (toll free) or visit [Pearson 24/7 Customer Support Site](http://247support.custhelp.com/) <http://247support.custhelp.com/>

The student help desk may be reached in the following ways:

- **Chat Support:** Click on '*Live Support*' on the tool bar within your course to chat with a Pearson LearningStudio Representative.
- **Phone:** 1-866-656-5511 (Toll Free) to speak with Pearson LearningStudio Technical Support Representative.

Accessing Help from within Your Course: Click on the '*Tech Support*' icon on the upper left side of the screen inside the course. Then you will be able to get assistance via online chat or by phone.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

Policy for Reporting Problems with Pearson LearningStudio

Should students encounter Pearson LearningStudio based problems while submitting assignments/discussions/comments/exams, the following procedure must be followed:

1. Students must report the problem to the help desk. You may reach the helpdesk at 1-866-656-5511.
2. Students must file their problem with the helpdesk and obtain a helpdesk ticket number
3. Once a helpdesk ticket number is in your possession, students should email me to advise me of the problem and provide me with the helpdesk ticket number.
4. I will call the helpdesk to confirm your problem and follow up with you

PLEASE NOTE: Your personal computer and internet access problems are not a legitimate excuses for filing a ticket with the Pearson LearningStudio Help Desk. Only Pearson LearningStudio based problems are legitimate reasons to contact the Help Desk.

You strongly are encouraged to check for your internet browser compatibility **BEFORE** the course begins and take the Pearson LearningStudio tutorial offered for students who may require some extra assistance in navigating the Pearson LearningStudio platform.

The syllabus/schedule are subject to change.

myLeo Support

Your myLeo email address is required to send and receive all student correspondence. Please email helpdesk@tamuc.edu or call us at 903-468-6000 with any questions about setting up your myLeo email account. You may also access information at [myLeo](https://leo.tamuc.edu).
<https://leo.tamuc.edu>

Learner Support

The [One Stop Shop](http://www.tamuc.edu/admissions/onestopshop/) was created to serve you by providing as many resources as possible in one location. <http://www.tamuc.edu/admissions/onestopshop/>

The [Academic Success Center](http://www.tamuc.edu/campusLife/campusServices/academicSuccessCenter/) provides academic resources to help you achieve academic success.

<http://www.tamuc.edu/campusLife/campusServices/academicSuccessCenter/>

FREE Mobile APPS

The Courses apps for phones have been adapted to support the tasks students can easily complete on a smaller device. Due to the smaller screen size course content is not presented.

The Courses app is free of charge. The mobile Courses Apps are designed and adapted for different devices.

	App Title:	iPhone – Pearson LearningStudio Courses for iPhone Android – LearningStudio Courses - Phone
	Operating System:	iPhone - OS 6 and above Android – Jelly Bean, Kitkat, and Lollipop OS
	iPhone App URL:	https://itunes.apple.com/us/app/pearson-learningstudio-courses/id977280011?mt=8
	Android App URL:	https://play.google.com/store/apps/details?id=com.pearson.lsphone

Once downloaded, search for Texas A&M University-Commerce, and it should appear on the list. Then you will need to sign into the myLeo Mobile portal.

The Courses App for Android and iPhone contain the following feature set:

- View titles/code/Instructor of all Courses enrolled in online
- View and respond to all discussions in individual Courses
- View Instructor Announcements in individual Courses
- View Graded items, Grades and comments in individual Courses
- Grade to Date
- View Events (assignments) and Calendar in individual Courses
- View Activity Feed for all courses
- View course filters on activities

The syllabus/schedule are subject to change.

- View link to Privacy Policy
- Ability to Sign out
- Send Feedback

LearningStudio Notifications

Students can be alerted to course activities via text on their mobile phones or up to two email addresses.

Based on their preferences, students can automatically receive a push notification with every new: course announcement, threaded discussion post, grade, and/or assignment without having to login to the course. Enrolled students will automatically receive email notifications for announcements and can opt out of this feature. To receive text notifications, students must opt in.

To begin setting up notifications, go into your course in LearningStudio and click on the bell-shaped Notifications icon on the main menu ribbon.

By default the student's university email address will appear. This cannot be changed in LearningStudio. Additional email addresses may be added by clicking the Add button. After all of the other selections are completed be sure to click the Save and Finish button.

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement

Response time to any questions sent by email regarding the course will be within 72 hours. However, students are encouraged to interact with the instructor directly during the class time and office hours, if necessary. Exceptions such as widespread internet outage apply.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

You are expected to attend ALL scheduled lectures and labs and take the exams/quizzes as scheduled. There will be a 5 point credit for attendance. Excused absences as defined in the Student Handbook of the university will be accepted.

The syllabus/schedule are subject to change.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

The syllabus/schedule are subject to change.

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: Rebecca.Tuerk@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

The syllabus/schedule are subject to change.

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Week 1	Introduction; Histology Methods.
Week 2	Cell - cytoplasm, nucleus, ultra structure and function.
Week 3	Tissues; epithelial tissues and glands
Week 4	Connective tissue, cartilage
Week 5	Bone; Adipose tissue; Blood
	Exam I
Week 6	Muscle tissue
Week 7	Nerve tissue
Week 8	Cardiovascular system
Week 9	Lymphatic system
Week 10	Digestive system
Week 11	Respiratory system
	Exam II
Week 12	Urinary system; Endocrine organs
Week 13	Male reproductive system
Week 14	Female reproductive system
	Exam III
Week 15	Eye and ear; essay and presentation
Week 16	Comprehensive Final Exam

* This schedule is approximate and might change based on the amount of time spent for each topic. Quizzes will be scheduled based on the amount of material covered. Date and time of quizzes will be announced in class.

The syllabus/schedule are subject to change.

Week 1 starts on 01/16/2018. Last day of class (Week 15) will be 05/11/2018.

Final Exam: TBD

*** Please check the academic calendar (<https://ems.tamuc.edu/MasterCalendar/>) for details on holidays and start and end dates of the current semester.**

*** ALL DATES AND CHAPTERS COVERED ARE TENTATIVE AND SUBJECT TO CHANGE.**

The syllabus/schedule are subject to change.