

COMPARATIVE VERTEBRATE HISTOLOGY
ZOO 4756c
Syllabus for Fall 2022

Instructor: Frank T. Logiudice
Office: Biology Building, Room 202c
Office Phone Number: (407) - 823-2495
Email Address: Frank.Logiudice@ucf.edu
Prerequisites: ZOO 3713c or equivalent
Recommended Text: *Comparative Veterinary Histology with Clinical Correlates*
by Aughey and Frye, 1st Edition
ISBN-13: 978-1840761481 and ISBN-10: 1840761482

Website: See UCF Webcourses

Course Description: Comparative vertebrate histology is a study of vertebrate anatomy on the tissue level. It is a microscopic examination of vertebrate cells, tissues, organs, and organ systems. The course will focus on the diversity of histology across vertebrate classes within organ systems and in its functional and evolutionary significance.

Grades: The student's grade will be determined by three lecture exams (worth 100 points each) and three lab exams (also worth 100 points each).

Total points available is 600.

Grading Scale:

A = 600 - 540

B = 539 - 480

C = 479 - 420

D = 419 - 360

F = 359 - 0

Note: +/- grades are not used in this class.

Academic Honesty:

Refer to the UCF Golden Rule which will be rigidly adhered to.

Attendance:

Due to the volume of material presented during this course good attendance is essential! You alone are responsible for all missed work.

Make - Up Policy:

Lab exams will not be made up under any circumstances.

Lecture exams may be made up at the instructor's discretion. (Note: Such is a rare event.)

Preparation:

You are expected to be prepared for every class. That includes reading all assigned materials before each lecture and lab session.

Important Dates:

Add Deadline - Aug. 26

Drop Deadline – Aug. 26

Withdrawal Deadline – Oct. 28

Office Hours:

MWF 12:00-2:00 or by appointment

Week	Topics	Text Material
----- UNIT 1 -----		
Aug 21	Introduction to Histology	Ch 1
Aug 28	Epithelial Tissue	Ch 2
Sep 4	Connective Tissues	Ch 3
Sep 11	Special Connective Tissues	Ch 3 & 4
Sep 18	Muscle Tissue	Ch 5
----- UNIT 2 -----		
Sep 25	Nervous Tissue and Nervous System	Ch 13
Oct 2	The Circulatory System	Ch 6
Oct 9	The Lymphatic System	Ch 15
Oct 16	The Respiratory System	Ch 7
Oct 23	The Digestive System	Ch 8
----- UNIT 3 -----		
Oct 30	The Integument	Ch 16
Nov 6	The Urinary System	Ch 9
Nov 13	The Reproductive System	Ch 11 and 12
Nov 20	The Endocrine System	Ch 10
Nov 27	The Special Senses: The Eye and the Ear	Ch 16

Tentative Lecture and Laboratory Exam Schedule

	Lecture Exam Date	Laboratory Exam Date
Unit 1:	23 September	22 September
Unit 2:	4 November	3 November
Unit 3:	5 December (10:30-11:30)	1 December

NOTE: The dates for these exams may need to be changed as the semester progresses. If such becomes necessary, you will be notified at the earliest possible time.

Lab	Topics
----- UNIT 1 -----	
Aug 25	<p>Introduction to Histology</p> <p>ML 1442</p> <ul style="list-style-type: none"> • Salamandra, t.s. through thorax and forelegs of larva <p><i>Plus other slides showing appropriate features</i></p>
Sep 1	<p>Epithelial Tissue</p> <p>ML 1443</p> <ul style="list-style-type: none"> • Squamous epithelium, isolated cells <p>ML 1444</p> <ul style="list-style-type: none"> • Ciliated epithelium of mammal • Columnar epithelium of mammal • Mammary gland of cow, t.s. • Parotid gland of cat, t.s. <p><i>Plus other slides showing appropriate features</i></p>
Sep 8	<p>Connective Tissues</p> <p>ML 1443</p> <ul style="list-style-type: none"> • Adipose tissue of mammal, fat stained • Fibrous connective tissue, w.m. from pig mesentery <p>ML 1444</p> <ul style="list-style-type: none"> • Mucous tissue, t.s. of navel string • Red bone marrow of cow, sec. or smear • White fibrous tissue, l.s. of tendon of cow <p><i>Plus other slides showing appropriate features</i></p>
Sep 15	<p>Special Connective Tissues</p> <p>ML 1442</p> <ul style="list-style-type: none"> • Gallus, chicken, blood smear, with nucleate red corpuscles • Rana, frog, blood smear, with nucleated corpuscles <p>ML 1443</p> <ul style="list-style-type: none"> • Blood smear, human • Compact bone of cow, t.s. • Hyaline cartilage of calf, t.s. <p>ML 1444</p> <ul style="list-style-type: none"> • Bone development, l.s. of fetal finger. • Elastic cartilage, sec. stained for elastic fibers <p><i>Plus other slides showing appropriate features</i></p>
Sep 22	<p>Muscle Tissue</p> <p>ML 1443</p> <ul style="list-style-type: none"> • Smooth muscles of cat, t.s. and l.s. • Striated muscles of cat, l.s. • Striated muscle of cat, t.s. <p><i>Plus other slides showing appropriate features</i></p>

----- UNIT 2 -----

- Oct 6 Nervous Tissue and Nervous System
ML 1443
• Motor nerve cells, smear from spinal cord
• Nerve fibers isolated, Ranvier's nodes
• Spinal cord of cat, t.s.
• Cerebellum of cat, t.s.
• Cerebrum of cat, t.s.
ML 1444
• Brain of mouse, entire organ l.s.
• Cerebellum, t.s. silver stained for Purkinje cells
• Peripheral nerve of cat or rabbit, l.s.
• Sympathetic ganglion, t.s. multipolar nerve cells
- Oct 13 The Circulatory System and the Lymphatic System
ML 1442
• *Gallus*, chicken, blood smear, with nucleate red corpuscles
• *Rana*, frog, blood smear, with nucleated corpuscles
ML 1443
• Blood smear, human
• Artery of cat or rabbit, t.s.
• Vein of cat or rabbit, t.s.
ML 1444
• Heart of mouse, sagittal l.s.
• Heart muscle of cat, l.s. and t.s.
• Lymph gland of cat or rabbit, t.s.
• Red bone marrow of cow, sec. or smear
• Spleen of cat, t.s.
• Thymus gland of cow, t.s. with Hassall bodies
• Vermiform appendix of rabbit, t.s.
- Oct 20 The Respiratory System
ML 1442
• *Gallus*, chicken, lung t.s.
• *Rana*, frog, lung t.s., a simple bag-like lung
ML 1443
• Lung of cat, t.s.
ML 1444
• Olfactory region of dog or rabbit, t.s.
• Trachea of rabbit, t.s.
- Oct 27 The Digestive System
ML 1442
• *Cyprinus*, carp, small intestine t.s.
• *Cyprinus*, carp, liver t.s.
• *Gallus*, glandular stomach t.s.
• *Rana*, frog, large intestine t.s., with goblet cells
• *Rana*, frog, liver t.s. showing bile ducts
• *Rana*, frog, stomach t.s.
ML 1443

- Tongue of cat, t.s. with cornified papillae
- Fibrous connective tissue, w.m. from pig mesentery
- Stomach of cat, fundic region t.s.
- Small intestine of cat or rabbit, t.s.
- Liver of pig, t.s.
- Pancreas of pig with islets of Langerhans t.s.

MS 1444

- Tooth, t.s. through root or crown
- Parotid gland of cat, t.s.
- Esophagus of rabbit, t.s.
- Large intestine (colon) of rabbit, t.s.
- Gall bladder of rabbit, t.s.
- Taste buds in tongue of rabbit (*Papilla foliata*), t.s.

UNIT 3

Nov 10

The Integument

ML 1442

- *Cyprinus*, carp, skin t.s..
- Fish scales, cycloid, ctenoid and placoid scales w.m.
- Gallus, chicken, skin with developing feathers t.s. or l.s.
- Gallus, chicken, unfeathered skin of foot t.s.
- Gallus, chicken, wing and down feathers w.m.
- Lacerta, lizard, skin with scales, sagittal l.s.
- Rana, frog, skin t.s. showing glands
- Salamandra, skin with poison glands t.s.

ML 1443

- Scalp, human, l.s. of hair follicles

ML 1444

- Mammary gland of cow, t.s.
- Nail development of embryo, sagittal l.s.
- Scalp, human, t.s. of hair follicles
- Skin of human palm, t.s

Nov 17

The Urinary System and the Reproductive System

ML 1442

- *Cyprinus*, carp, kidney t.s.
- *Cyprinus*, carp, testis t.s. showing spermatozoa
- Gallus, chicken, ovary with developing eggs t.s.
- Rana, frog, kidney t.s.
- Rana, frog, testis t.s. to show spermatogenesis

ML 1443

- Kidney of cat, t.s
- Ovary of rabbit, t.s., developing follicles
- Testis of mouse, t.s., spermatogenesis

ML 1444

- Kidney t.s., vital stained with trypan blue showing storage
- Penis of rabbit, t.s.
- Epididymis of rabbit, t.s.
- Ovary with corpus luteum t.s.
- Fallopian tube of pig, t.s.
- Placenta of rabbit, t.s.
- Prostate gland of pig, t.s.
- Sperm smear of bull

- Ureter of rabbit, t.s.
- Urinary bladder of rabbit, t.s.
- Uterus of rabbit, t.s.
- Uterus of rat, containing embryo t.s.
- Vagina of rabbit, t.s.

The Endocrine System, the Eye and the Ear

ML 1443

- Pancreas of pig with islets of Langerhans t.s.

ML 1444

- Adrenal (suprarenal) gland of rabbit, t.s.
- Hypophysis (pituitary body) of cow or pig, l.s.
- Cochlea (internal ear) of Guinea pig, l.s. shows organ of Corti
- Epiphysis (pineal body) of cow or pig, t.s.
- Eye of cat, anterior part with cornea t.s.
- Eye of cat, posterior part with retina t.s.
- Thymus gland of cow, t.s. with Hassall bodies
- Thyroid gland of cow, t.s.

Note: Other slides may be added to the list as appropriate. In particular, for the four basic tissues classes organ system slides can be used to illustrate the various tissue types (ex; the cat lung can be used to show simple squamous epithelium, simple cuboidal epithelium, hyaline cartilage, and smooth muscle).

Required Statement Regarding COVID-19

To protect members of our community, everyone is required to wear a facial covering inside all common spaces including classrooms (<https://policies.ucf.edu/documents/PolicyEmergencyCOVIDReturnPolicy.pdf>). Students who choose not to wear facial coverings will be asked to leave the classroom by the instructor. If they refuse to leave the classroom or put on a facial covering, they may be considered disruptive (please see the [Golden Rule](#) for student behavior expectations). Faculty have the right to cancel class if the safety and well-being of class members are in jeopardy. Students will be responsible for the material that would have been covered in class as provided by the instructor.

Depending on the course of the pandemic during the semester, the university may make changes to the way classes are offered. If that happens, please look for announcements or messages in Webcourses@UCF or Knights email about changes specific to this course.

COVID-19 and Illness Notification – Students who believe they may have a COVID-19 diagnosis should contact UCF Student Health Services (407-823-2509) so proper contact tracing procedures can take place.

Students should not come to campus if they are ill, are experiencing any symptoms of COVID-19, have tested positive for COVID, or if anyone living in their residence has tested positive or is sick with COVID-19 symptoms. CDC guidance for COVID-19 symptoms is located here: (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>)

Students should contact their instructor(s) as soon as possible if they miss class for any illness reason to discuss reasonable adjustments that might need to be made. When possible, students should contact their instructor(s) before missing class.

In Case of Faculty Illness – If the instructor falls ill during the semester, there may be changes to this course, including having a backup instructor take over the course. Please look for announcements or mail in Webcourses@UCF or Knights email for any alterations to this course.

Course Accessibility and Disability COVID-19 Supplemental Statement –

Accommodations may need to be added or adjusted should this course shift from an on-campus to a remote format. Students with disabilities should speak with their instructor and should contact sas@ucf.edu to discuss specific accommodations for this or other courses.