Mississippi Valley State University

Term & Year: Spring semester 2018

August 20 - December 07, 2018.

Department: Natural Sciences & Environ. Health **College:** Arts and Sciences

Course Prefix & No.: BI 421-01 BI 421L-01 **Course Name & Credit:** Vertebrate Histology 4 Cr. Hrs.

Instructor: DR. Julius. O. Ikenga **Class Days /Time/ Location:** MWF (Lec)/1-1:50 pm/ FLW 101 T (Lab)/1-3:40 pm/ STB 2207(2203) **Office Location:** STC 2252

Office Phone: (662) 254-3022 **E-mail:** jikenga@mvsu.edu **Office Hours:** MWF 8:00 – 9:50 a.m. and 2:00-4:00 p.m., T 8:00 a.m. -3:40 p.m.

Course Description. Study of the microscopic structure of tissues and organs of vertebrate animals.

Prerequisite: The *prerequisites are BI 111, 301, and 302; 4 Cr. Hrs Each.*

Purpose. To discuss the microscopic structure of tissues and some organs of a vertebrate animal, and correlate structural features with function.

Program Goals:

The overall course goals for BI 421 include:

1. Preparing of interested students for advanced study in biomedical sciences;
2. Preparing of students interested in pursuing medicine, dentistry, nursing, medical technology, physical therapy, and other allied health service professions; and
3. Availing the opportunity for students to become familiar with concepts and principles of natural sciences.

Expected Student Learning Outcomes:

Upon completion of BI 421 the student should be able to:

1. Articulate the structure & function of a biological membrane;
2. List and differentiate the main types of animal tissues;
3. Relate animal tissue structures to function; and
4. List and apply steps of tissue preparation for microscopic study.

Required Textbooks. (Both Texts are R e q u i r e d)

Mescher, L. Anthony (2016). Junqueira's Basic Histology: Text and Atlas, 14th Edition, McGrawHill/ LANGE, New York, NY.

BIOLOGY: Vertebrate Histology Laboratory Manual (Adapted from Wise, Eric (2008). Laboratory Manual to Accompany Saladin Human Anatomy, 3rd Edition, McGraw-Hill Primis Online, New York, NY.

Optional Text. **Stevens, Alan and James S. Lowe (2016). Human Histology. Sixth edition, Elsevier Mosby Publishing CO., St. Louis, MO.**

Course Content:

Major Areas of Concentration

I. Histology & Methods of Study
II. The Cell
III. Epithelial Cells
IV. Support Cells & EM
V. Blood Cells
VI. Contractile Cells
VII. Musculosketal
VIII. Liver
IX. Alimentary Tract
X. Skin & breast

LABORATORY EXERCISES:

BIOLOGY: Vertebrate Histology Laboratory Manual (Adapted from Wise, Eric (2008). Laboratory Manual to Accompany Saladin Human Anatomy, 3rd Edition, McGraw-Hill Primis Online, New York, NY.

(page numbers are located at the top right of each page). Turn in the indicated pages one week after the exercise is completion in the lab).

I. Student Preface	**p. 1-5**
II. Exercise One: Organ Systems	**p. 7-10, Turn in p.8-9**
III. Exercise Two: Microscopy	**p. 17-22, Turn in p. 23-25**
IV. Exercise Three: Cell Structure	**p. 27-33, Turn in p. 35-38**
V. Exercise Four: Tissues	**p. 39-55, Turn in p. 57-62**
VI. Exercise Six: Intro to Skeletal System	**p. 73-80, Turn in p. 81-83**
VII. Exercise Twenty: Blood Cells	**p. 147-152, Turn in p. 153-155**
VIII. Exercise Five: Integumentary System	**p. 63-68, Turn in p. 69-72**
IX. Exercise Twenty-One: Digestive System	**p. 179-192, Turn in p. 193-196**

Attendance Policy.

Each Student is required to:

1. **Attend class regularly on scheduled class days, unless there is a death in the family, or the student is under the care of a physician. In either case, a signed excuse from the Student VP office is required.**
2. **Complete all assigned readings from course text.**
3. **Turn in each homework & worksheets on announced due date.**
4. **Demonstrate knowledge of course content on each examination.**

5. **TYPE ALL ASSIGNMENTS before submission.**

Portfolio. Your Portfolio should have:

1. **A cover page with a title**
2. **A table of content with page #s**
3. **Labeled Drawings with dates completed**
4. **Portfolio Rubric given to you in class**
5. **All course Handouts**
6. **All Assignments**
7. **All Lab Worksheets with dates**

Other Course Requirements.

- ☺ **Take Content Examinations on Lecture & Lab**
- ☺ **Prepare & submit a Portfolio of Lab Exercises: *Portfolio will be graded based on C**ompleteness**, A**ccuracy**, & N**eatness.***
- ☺ **Label all Lab Drawings & worksheets & submit to the teacher when due. Folio should include lab assignments, worksheets, & ALL Handouts; *no lecture notes.***
- ☺ **Do the Lab Exercises as directed & submit to the teacher when due.**
- ☺ **Complete Lab Worksheets & Quizzes and turn in to the teacher when due.**
- ☺ **Make a MS power-point for Oral Presentation on Your assigned chapter or topic per schedule. Each student will have 15-25 minutes to present his/her topic in class. *No Topic will be approved one week before the Presentation date. All Topics must be approved by Teacher.***

Technology Infusion.

Technology is integrated into the course to enhance and facilitate learning and understanding. Type of technology used includes but not limited to:

1. **Dissecting and light compound microscopes with color monitor;**
2. **Color transparencies and overhead projector;**
3. **Computer and LCD projector, videos, 16 mm films & projector, and charts;**
4. **Computerized library search with EBSCO Host Databases;**
5. **Use of Internet searches for aspects of lecture & lab materials and for homework assignments; virtual lab projects, and**
6. **Computer applications for collecting, analyzing, and displaying data.**

Websites: **www.cdc.org**
www.anbg.gov/anbg
www.mhhe.com
http://biology.brookscole.com

Teaching & Learning Strategy. The main instructional model for this course is collaborative learning. The instructor will set course content, course objectives, and methods of classroom assessment. The course will incorporate the following instructional strategies: class discussion, online activities, assigned readings, and/or individual projects. Students are encouraged to actively participate in activities, ask questions, and contribute comments for discussion. Students are also encouraged to offer input regarding instructional strategies and assignments. Most importantly, students are expected to be active learners and to ask for clarification when they have questions. In order to be successful in the class, it is important that students, read the assigned material, and submit assignments and be prepared to discuss what they have read. The goal of this approach is to develop active learning environment that addresses a variety of learning styles, promotes critical thinking, and fosters creativity.

Make-up Policy. **Makeup examination will not be given unless the student has a legitimate excuse for failing to take one on the scheduled day and time. Such a student must make arrangements with Dr. Ikenga for a makeup examination within 5 days from the missed exam date.**

Evaluation Methods: **Lecture grades will be determined by dividing the total points that you have earned in the lecture by the total semester points for lecture (770) and then multiply by 100. The lab grade will be determined by dividing the total lab points that you have earned by the total semester points for lab (250) and then multiply by 100.**

Points Breakdown

☺	**Lab Tests**	**200**
☺	**Lab Worksheets**	**200**
☺	**Pre- & Post-Tests**	**20**
☺	**Oral Presentation with Power-point**	**25**
☺	**Portfolio**	**50**
☺	**Home works**	**50**
☺	**Efforts**	**50**
☺	**Content Examinations (Lectures)**	**500**
	Totals	**1020**

Grading Scale: **A = (90 and above), B = (80-89), C = (70-79), D = (60-69), and F = (below 60).**

Students with Special Needs.
Students having any special needs (i.e., disabilities, handicaps, problems, or any other factors that may affect their performances in class) or who require special instructional strategies should make these special needs known to the instructor during the first week of the course.

Cheating & Plagiarism: **Cheating in any fashion is not tolerated, including but not limited to plagiarizing. The University has implemented *Turnitin* to fight plagiarism and improve reading, writing, and research skills. *Turnitin* is a comprehensive plagiarism prevention system that lets faculty quickly and effectively check all students' work. Results are based on exhaustive searches of billions of pages from both current and archived instances on the Internet. Plagiarism will result in at least a failing grade for the assignment(s) and/or course. Cheating of any kind is absolutely NOT allowed. Students caught cheating run the risk of loosing several points to all the points allowable for that particular examination or quiz.**

Office Hours: **The office hours on this syllabus are reserved for you. You should come in and ask questions on lecture or lab materials that you have not already mastered, or use the time to explore aspects of science, careers, academic advisements, etc., that may be of particular interest to you.**

Services for Students with Disabilities (SSD): **Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester. If you are determined to be eligible**

after your confidential consultation, you will be provided with a Memo of Accommodations that must be submitted to each of your instructors.
For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005 or billy.benson@mvsu.edu.

References.

Bauman, R. (2017). Microbiology with Diseases by Body System, 5th ed., Pearson Publishing, N.Y.

Brooker, J. Robert, Eric P. Widmaier, Linda E. Graham, and Peter D. Stiling 2017. Biology, 14th Edition, McGraw-Hill Publishing, New York, N.Y.

Kardong, V. Kenneth 2006. Vertebrates: Comparative Anatomy, Function, & Evolution, 4th ed., McGraw Hill Publishers, Dubuque, IA.

Leboffe, J. Michael 2013. A Photographic Atlas of Histology, 2nd Edition, Morton Publishing, Englewood, CO.

Mader, S. S. and M. Windelspecht (2017). Inquiry Into Life, Relevancy update, 15.1th ed., McGraw-Hill Publishing, N.Y.

Madigan, M. T., J. M. Martinko, K. S., Bender, D. H.Buckley, and D. A. Stahl (2014). Brock Biology of Microorganisms, 14th ed., Pearson Publishing, Boston, MA.

Solomon, E. P., L. R. Berg, and D. W. Martin 2008. Biology, 8th ed., Thompson Brooks/cole Publ., USA

Stevens, Alan and James S. Lowe 2005. Human Histology. Third edition, Elsevier Mosby Publishing CO., St. Louis, MO.

Vodopich, D. S. and R. Moore (2017). Biology: Laboratory Manual, 11th ed., McGraw-Hill Publishing, NY, NY.

As the instructor, I reserve the right to make any changes to this syllabus as found necessary. Further, this document does NOT constitute a contract with the University. It contains only guidelines for this course.