Mayville State University

BIOL 220L – Anatomy and Physiology Lab

Dr. Joseph Mehus

Spring 2023

1 credit

Before starting this online course, students need to check with their current and future programs to determine if this course will be accepted for credit in their programs/universities

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Contact Information: Joseph Mehus, Ph.D., Joseph.mehus@ndus.edu, 218-281-8252

Hours of Availability: 11am-noon; MWF

Instruction Mode: Online Asynchronous

Time Zone: All times indicated throughout the syllabus and course materials reflect Central Standard Time. All deadlines are set at 5pm CST on all due dates, NOT MIDNIGHT.

How to address your instructor: Dr. Mehus; Professor Mehus

Meeting Times and Location: Online/Email

Course Description

Two laboratory hours per week. Laboratory topics to be covered are designed to complement the materials studied in BIOL 220. Topics include activities related to cellular structure, micro and macroscopic observations and interpretations of cellular, tissue, integument, skeletal, muscular, cardiac system structures and tissues, and dissection of animal specimens. Activities related to the study of physiology are also included.

Pre-/Co-requisites: Most students will also need BIOL 220. This is dependent upon student need.

Purpose of the Course

This course will provide content in the areas related to maintenance of homeostasis within the human body. We will start by covering basic biological concepts such as reviewing terminology. The second and third labs will cover cell organelles and cell processes. Lab four material will be based on cell chemistry, lab five histology and study of tissues and the identification of those tissues. Additional labs will discuss the epidermis and accessory organs in addition to their functions. We will also cover bone identification. Muscles will be discussed in terms of physical structure and mode of operation through an exploratory rat dissection. Production and function of blood cells will be discussed in correlation to immunity. The course will finish by discussing the cardiovascular system to include vessels

and path of blood through the body including the pulmonary circuit. These pages/chapters may differ upon which edition of the text is used.

Course Objectives

- Understand the organization of the human body and anatomical terminology
- Understand the chemical basis of life, cell structure and organization
- Understand the characteristics of the four tissue types.
- Understand the organization and function of the skeletal system.
- Be able to identify the bones of the body.
- Be able to identify the major muscles found in the body.
- Understand the organization and function of the circulatory system, including tracing the path of blood through the heart.
- Understand the organization and function of the lymphatic system and its role in the immune system.
- Understand the inner workings of the immune system and the function of the different cell types.
- Understand the organization and function of the respiratory system in relation to cardiovascular system.

Program Student Learning Outcomes (SLOs) Addressed in This Course (required)

The Academic Program Student Learning Outcomes document can be found in your course shell. It contains all learning outcomes pertaining to Essential Studies courses and all majors and minors. The document has an index, so you can quickly find the degree you are pursuing.

As part of Mayville State's effort to demonstrate continuous improvement in achieving student learning outcomes, this course:

☒ introduces SLO #	☒ introduces SLO #	☒ introduces SLO #	☒ introduces SLO #
☐ reinforces SLO #	☐ reinforces SLO #	☐ reinforces SLO #	☐ reinforces SLO #
☐ masters SLO #	☐ masters SLO #	☐ masters SLO #	☐ masters SLO #
For Major / Minor:	For Major / Minor:	For Major / Minor:	For Major / Minor:
Biology	Biology	Biology	Biology

As part of Mayville State's effort to demonstrate continuous improvement in achieving Essential Studies Learning Outcomes, this course will assess

ELO # ☒1 ☐2 ☐3 ☐4

as part of the Essential Studies and Capstone Courses. As part of Mayville State University's Essential Studies curriculum, this course seeks to prepare students for twenty-first century challenges by gaining: 1) Knowledge of human cultures; 2) Intellectual and practical skills; 3) Personal and social responsibility; 4) Integrative and applied learning.

Course Improvements Based on Most Recent Assessment Findings

During previous offerings of this course, students have done well. Even though students have met expectations in the course, I will be spending more time explaining diagrams that are pertinent to the education of students. I would

prefer to see structure identification and function scores to be higher. In addition, oral communication skills of students were assessed for content knowledge, vocabulary, presentation skills and preparation. Students exceled in oral communication if they took the time to use their own words to explain terminology.

This course will be assessed in the future (based on the 2019-2025 assessment curriculum map) and the findings will be reported in this syllabus.

Required/Recommended Materials

Lab Protocols will be provided to students via Blackboard. Lab kits need to be purchased from **Mayville State University Bookstore**. It is VERY beneficial to have the textbook (Visual Anatomy and Physioloy, Martini,Ober, Nath 3rd ed) when filling out lab materials, worksheets, and quizzes. Online sources should be used to fill out lab assignments. Printer, Webcam, 24/7 internet access, computer that meets the university standards (Mac users may have issues, this is a PC campus), and Microsoft Office (Mac programs such as Pages cannot be opened by instructor, MS Office is required and a free copy can be downloaded through the MSU Technology website (link below). Students may be using alternative versions of the text, and this is ok, but just keep in mind that if page numbers are referenced, they may be different. The content is the same in all versions of the text, students just need to locate the material in the text pertinent to the chapter/context discussed. **Not having course materials is NOT an acceptable reason for not completing the assignments and no credit will be awarded.** Late enrolling students may miss points that WILL NOT be made up and could negatively affect their grade. If you enroll after the first date of the course you accept these terms.

By continuing on with this course, student acknowledges text differences may be discovered.

http://www.mayvillestate.edu/msu-online/msu-online/getting-started).

http://www.mayvillestatebookstore.com/home.aspx

Instructional Strategies

We will use the following methods to assist you in your learning anatomy and physiology. **(INTASC 1, 2, 3, 4, 8)**

- Direct instruction
- Indirect instruction
- Interactive instruction
- Experimental learning
- Guided and independent study
- Cooperative learning activities
- Class Discussions
- Chapter Exams
- Application
- Inquiry approach
- Simulations
- Questioning skills
- Case Studies
- Instructional strategies

Learning Experiences

- Read all chapters/lab protocols prior to completing labs or do appropriate research online, including chapters as noted, research articles, etc. Students who are not enrolled in the lecture portion may be at a

disadvantage as they do not get lecture content. By continuing with the course, students acknowledge and accept this.

- Assignments will be given in through Blackboard.
- Quizzes in Blackboard are required to be completed on or before designated due dates.
- It is important for you to check your grades in Blackboard. If you find that the instructor has made a mistake while entering your grade, you have one week to bring it to the attention of the instructor. After a ONE WEEK PERIOD, grades will be locked in Blackboard.
- Please refrain from requesting extensions as they will not be granted. Please not this before starting the course and refrain from leaving negative feedback in you miss a deadline and are not granted an extension. Please do not feel disrespected if your request does not receive a reply, by continuing in the course, you accept this rule. This is your formal notification about requests for extensions. **If requesting an extension, you need to have a university excused absence and include DOCUMENTATION in your initial email.**

Instructional Technologies Utilized in this Course

- Blackboard Ally
- Blackboard Collaborate Ultra
- Blackboard Learn
- Teams
- Zoom
- MS Office Suite
- Yuja

Expectations/Protocols

Labs: Labs are distributed via Blackboard. Labs need to be completed and submitted before the due date listed in the schedule below. A printer and camera are required for the labs. Labs will vary. Some will consist primarily of material intended to introduce you to the structure and function of organs and/or organ systems. These will be "dry" labs, written exercises in which you will complete online quiz-like activities that will be computer-graded. Quizzes may also include "essay-type" questions. Dissections or "wet" Labs may require Lab Reports, Lab Quizzes, or both. Where required, Lab Reports must be completed and submitted with required photos to the digital drop box. There may also be long-answer questions or data tables, which you will complete and include in the online report. Some labs will use materials found within the home, and there will be a white rat, pig heart included in the lab kit you must purchase, which will be dissected. For labs, which would normally involve microscopy, the digital images will be provided, with procedures modified to concentrate on interpretation of the visual information. **Lab quizzes may be part of some labs, and when labs are completed, the quiz must be taken. Both labs and lab quizzes have the same due dates/times. So, waiting until the last minute will NOT work for you!!! You will need to finish the lab early so that you can take the lab quiz that may follow.** A scoring guide or rubric may be provided for each wet lab, which will help you to understand what is expected in the lab report, and to do well in the lab. The rubric should be reviewed before completing the lab procedure. It is essential that you follow procedures carefully, submit all required photograph in which all required structures are clearly visible and labeled as specified, and answer all parts of all questions. **Any labs that contain crossword puzzles (CWPs) need to be printed and filled out by hand, then either photographed/scanned with student name and date of completion written on the document.**

Instructor/Student Communication

- Students are accountable for all academic communications sent to their Mayville State University e-mail address. **Students should not use outside email.** Instructor is not responsible for emails not received (by instructor themselves or by students) if outside email is used.

- Faculty response time can be up to 72 hours during the work week if a specific question is asked (most emails are answered within 24 hours during the week). If no questions is explicitly asked, a response may not be deemed necessary. Emails will not be checked on the weekends. An email sent on a Friday afternoon may not be responded to until the following Tuesday (or longer if there is a holiday). Please plan accordingly. Any request for an extension REQUIRES a university excused absence and documentation in the initial email. Do not email asking for an extension without including your documentation.

Method of Evaluation/Grading

1) Grades for labs, quizzes, lab practical's can be anticipated within 2 weeks of the due date. Turning an assignment in early does not mean grading will be done early. Sometimes, a set of assignments will take longer to grade, especially if the assignment is heavy in text (some labs may fall into this category) and may take an additional week.

2) In regard to late submissions, they are not accepted. Make-up practicals missed labs/quizzes are ONLY permitted if there is a UNIVERSITY EXCUSED ABSENCE AND THERE IS DOCUMENTATION. Being busy, over sleeping, taking an extra shift, or general issues are NOT university excused absences. Please do not ask for extensions based upon these issues. If a university excused absence is in place with documentation, the student has 1 (one) week to complete the activity. This is one week from the day of the due date, NOT a week from when the student returns or contacts the instructor. After 1 (one) week, no points will be awarded. Determination of a university excused absence is based upon being sick and having gone to a medical professional (who can provide documentation), university sporting event in which you are actively participating in (which documentation is required), death in the immediate family (grandparent, parent, sibling, child, aunt/uncle for which you can provide documentation), military deployment (which documentation can be provided for), or legal (such as a court date that documentation can be provided for). Moving or travel is NOT a university excused absence. In terms of attendance and/or participation points, please see section above.

Grades will be TENTATIVELY based on two exams, lab assignments and lab quizzes. ***There will be no make-ups for lab practical exams, except under extreme circumstances (medical, legal or military). You can only make up one exam during the semester and it must be during the exam week. You must take both lab practicals to pass the course.*** The grading scale is the typical 90% = A, 80%=B, 70%=C, 60%=D, <60%=F. **IT IS IMPORTANT FOR YOU TO CHECK YOUR GRADES ON BLACKBOARD. IF YOU FIND THAT I HAVE MADE A MISTAKE WHILE ENTERING YOUR GRADE YOU WILL HAVE ONE WEEK TO BRING IT TO MY ATTENTION, AFTER THAT GRADES ARE LOCKED IN BLACKBOARD.**

Practical Exams	100 (2 worth 50 points)
Assignments	220 points (11 worth 20 points, some labs may be split into 2 sections)
Total	**320 points**

Grades (%):	90-100	A
	80-89	B
	70-79	C
	60-69	D
	< 60	F

Lecture and lab for BIOL 220 are NOT combined. They are two unique courses. These limits are hereby preset and by continuing in the course, you recognize these limits and will abide by these limits. Please refrain from sending emails about submitting late work or "redoing" or "reopening" assignments/quizzes/study guides/exams in order to get extra points at the end of the semester. Those requests will be denied and may not warrant a response by the instructor.

Enrollment Verification

The U.S. Department of Education requires instructors of online courses to provide an activity which will validate student enrollment in this course. The only way to verify that a student has been in this course is if he or she takes an action in the LMS, such as completing an assignment or a taking a quiz. Logging into the LMS is **NOT** considered attendance. Please see the enrollment verification activity and complete it by the date indicated. If it is not complete your enrollment in this course will be at risk.

Proctor Notification

The lab practicals are open resource. No proctor is needed. Yuja recordings are not necessary.

Late Arrivals

The grading system for students adding this course after the first day of instruction will not be modified. The student will be graded on the activities that transpired from the beginning of the course. Students will be penalized for missed assignments and the student is still responsible for learning the course material that was covered during their initial absence.

Important Student Information

Navigate to Blackboard > MaSU tab > Student Resources tab to find a document entitled, "Important Student Information," which includes information about:

- ✓ Academic Grievance Concerns and Instructor English Proficiency
- ✓ Starfish - Student Success System
- ✓ Students with Documented Disabilities
- ✓ Academic Honesty
- ✓ Emergency Notification
- ✓ Continuity of Academic Instruction for a Pandemic or Emergency
- ✓ Family Educational Rights and Privacy Act of 1974 (FERPA)
- ✓ Diversity Statement

Course Timeline/Schedule

Course Schedule:

NOTE: This is a **tentative** schedule. It may change as needed by the instructors.

Lab Topic	Due Dates
Lab 1 - Enrollment Verifications	**1/18/23**
Lab 2 – Overview of Anatomy & Microscopy	**1/28/23**
Lab 3 – Chemistry & Water, Electrolytes, and Acid-Base Balance	**2/7/23**
Lab 4 – Cell Membranes/Transport	**2/17/23**
Lab 5 – Cell Structures and Histology Part I	**2/27/23**
Lab 6 – Histology Part II **Once Lab 6 is submitted, Lab Practical 1 Opens, Labs 1-6 (Due Date 3/11/23 5pm CST)**	**3/9/23**
Lab 7 – Integumentary System	**3/19/23**
Lab 8 – Axial/Appendicular Skeleton Part I	**3/29/23**
Lab 9 – Axial/Appendicular Skeleton Part II	**4/8/23**
Lab 10 – Organization of Muscle Tissue	**4/18/23**
Lab 11 – Cardiac System/Heart Dissection **Once Lab 11 is submitted, Lab Final Opens, Labs 7-11 (Due Date 5/1/23 5pm CST)**	**4/28/23**

Lab Practicals

Two open-book exams must be completed during the semester. The first will be associated with materials covered in the labs up to and including tissues, and the final exam will cover the remaining labs. Materials to be considered in writing the exams will include both objective materials learned during the labs, and applications associated with the structures and systems studied. Identification of structures in photographs and line art is included in the exams. **You do NOT need to make a Yuja recording for Lab Exams**.

As a student you are expected to:

- Begin the lab course when the semester begins.
- Order your lab kits from the MSU Bookstore BEFORE the course starts. Check your lab kit for all enclosed items when it arrives. **Contact the MSU Bookstore immediately if all items are not present and intact. Instructor does not put together, nor accommodate for missing lab components, check your kits.**
- Answer questions appropriately: Some lab report answers may be given without full sentence structure where appropriate to the questions asked, but must clearly answer all parts for the question, contain correct spelling and display appropriate grammar and word usage. Answers to other questions, such as essay questions or short answer questions, which ask students to "explain", "compare" or "describe", should display

appropriate sentence structure and logical development of thought. **Every single answer needs to be put into your own words. Copy and paste is plagiarism and will receive a score of ZERO.**

- Check your Mayville State email and the ANNOUNCEMENTS forum on the course home page a minimum of once daily to remain current on course information and changes.

Additional Information: This classroom is a place where you will be treated with mutual respect, and the course instructors welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible or nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. MSU is committed to providing a safe learning environment, free of harassment and discrimination as articulated in our university policies located on our website at http://www.mayvillestate.edu/about-msu/consumer-information/title-ix/. MSU's policies require me as a faculty member to share information about incidents of gender-based discrimination and harassment with MSU's Title IX coordinator, regardless of whether the incidents are stated to me in person or shared by students as part of their coursework.

Starfish Statement:

This class will participate in Starfish Early Alert and Connect, which promotes student success through coordination and communication among students, instructors, advisors, and campus support service departments. If I observe that you are experiencing difficulties in the course (attendance concerns, low test scores or participation, in danger of failing, etc.), I may send an email to your mayvillestate.edu email account through the Starfish system. My message will tell you about my concerns and the next steps to take to resolve the issue. Your advisor, the Director of Student Success, and/or I will work with you to create success strategies to address any difficulties you are having. In addition, if I observe that you are doing well in my course, you may also receive "kudos" from me acknowledging your efforts.

Starfish may involve taking advantage of various campus support services, such as academic tutoring or advising. If I recommend that you use campus support services, I, your advisor, or the Director of Student Success will redirect you to that support office so they will be better prepared to assist you. Starfish provides essential notices by email, so please check your mayvillestate.edu account frequently and respond quickly if you receive an email from Starfish.

Please see the Starfish webpage for additional details: https://mayvillestate.edu/academics/starfish/.