

**MAYVILLE STATE UNIVERSITY**  
**Human Anatomy and Physiology 2 Lab**  
**BIOL 221L 1 Credit**  
**Spring 2014 Syllabus**

**Human Anatomy and Physiology 2 Lab January 13 - May 16, 2014)**  
<https://lms.ndus.edu/course/view.php?id=6138>

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**Office Hours:** See the “Where we are...” section in of the course home page.

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You are welcome to call us any time if there is a situation requiring an immediate solution. If it is possible, please call during the office hours shown on the course home page. Also check the home page for our location, as we will be available at different locations at different times. We do not have or use voicemail since we are available extended hours. If you cannot reach us by phone, please email us, including a phone number/s and times when you can be reached and we'll reach you as soon as we can. . It is important that we communicate about the course and about the life situations which have an impact on your participation in it. Use of your Mayville State email account guarantees the confidentiality of communication and your information.

**I. Course Description:**

BIOL 221L ANATOMY AND PHYSIOLOGY II LAB (CCN) 1 S.H.

An average of the equivalent of: Two hours of lab per week. Laboratory topics to be covered are designed to complement the materials studied in BIOL 221. Possible materials include activities related to the endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary, and reproductive systems. Microscopic specimens will be examined as appropriate. Animal specimens will be dissected, and activities related to the study of human physiology are also included. Fall on campus; Fall, Spring, Summer online.

**II. Purpose/Detailed Description of the Course:**

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 turned in 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 heart, a kidney, a pregnant white rat and a fetal pig for dissection included in the material in the lab kit you need to purchase. For labs, which normally would involve microscopy, the digital images will be provided, with procedures modified to concentrate on interpretation of the visual information. If a lab quiz is part of the assignment, you may take it twice, with the highest score being recorded for grading purposes. A scoring guide or rubric is available 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 photographs in which all required structures are clearly visible and labeled. Answer all parts of each question to be able to earn full credit. .Instructions including “[Information about creating a digital graph](#)” and “[How to label digital photos](#)” are found under “[Student Information/Resources](#)” on the course home page to assist you in fulfilling lab report requirements

### **III. List of Lab Activities to be Submitted** (and graded), (INTASC 1-5, 7, 8),(see addendum 1 at end of syllabus)

All work should be submitted by the due dates found on the course home page under the lab schedule link found near the top of the course home page.

1. Endocrine Glands and Hormones Lab Quiz 13
2. Cardiovascular System and Heart Dissection (15)
  - a. Heart Lab Photo Report.15
  - b. Cardiovascular System Lab Quiz 15
3. Lymphatic and Immune System Lab Quiz 16
4. Digestive System Lab Quiz 17
5. Respiratory Lab Quiz and Report 19
6. Urinary System (20)
  - a.) Kidney Dissection Photo Lab Report 20
  - b.) Urinary System Lab Quiz 20
7. Reproductive Systems (22)
  - a. Reproductive Lab Quiz 22A
  - b. Dissection of Pregnant White Rat Photo Lab Report 22B
8. Fetal Pig Dissection 23
  - a. Photo Lab Report 23
  - b. Fetal Pig Lab Quiz 23
9. Introduction to Human Genetics Lab Quiz 24A
10. DNA Lab Extraction Photo Lab Report 24B

### **IV. Goals and Objectives (Student Learning Outcomes):**

To successfully complete this lab course, you must be able to

- A. identify the organs found primarily, but not only, within the abdominopelvic cavity, the systems to which they belong, and their functions.
- B. explain the overall homeostatic functions of the organs and their systems within our bodies.
- C. apply your knowledge of general chemical procedures and reactions to the specific activities carried out by the organs and organ systems studied
- D. compare the similarities and differences of the animal specimens dissected with those found within the human body.

### **V. Student Learning Outcomes**

The entire Academic Student Learning Outcomes (SLO) document can be found in your Moodle course shell. The document has an index so you can quickly find the degree you are pursuing.

### **VI. Materials Required:**

**A Human Anatomy and Physiology Textbook:** Hole’s Human Anatomy and Physiology 12<sup>th</sup> or 13<sup>th</sup> Ed.; Shier, Butler, & Lewis, McGraw-Hill Publishing, is the text used for the lecture course. This specific text is not required for the lab course alone, but having this text available is highly recommended by us and by previous students, who have done the course without it.

**Interactive physiology CD:** The A.D.A.M. 10-module interactive physiology CD is available from the University Bookstore and will be shown in the Course Materials area of the bookstore’s site. It is not required if you are taking only the labs, but is very highly recommended. Its approach to explaining how many of the body’s systems function will

greatly improve your overall understanding of human physiology and likely your performance in this course! It is required if you are also taking the lecture portion of the course, and will provide the basis for a number of questions in the examinations

If you choose to purchase the text and /or Interactive Physiology CD, you should order it/them text and interactive physiology CD as soon as you register for the course.

([www.mayvillestatebookstore.com](http://www.mayvillestatebookstore.com)), 800-437-4104 ext 34823)

**Camera:** A digital camera with good, sharp definition is required to record lab activities including dissections. The photo documentation and illustration is required in order for you to receive credit for any part of “wet” lab activities as stated above. Some cell phone cameras will work; some will not. If the instructors cannot clearly see the structures that are required to be identified in your photographs credit cannot be given.

**Lab Materials-A&P 2 Lab Kit:** Specimens and other materials needed for lab activities must be purchased from the MSU Book Store in the A&P 2 Lab kit and will be shipped to you at the beginning of the semester along with the text book and the Interactive Physiology if you’ve purchased it from our bookstore. If you have obtained the book from some other source, you will still need to contact the bookstore for the required lab materials. If you live at a significant distance from Mayville, ND the shipping cost can be relatively high. Please, check on the shipping cost so you are aware of it ahead of time. .

Lab specimens do not require refrigeration if they can be stored in a relatively cool area. If you live in a warm climate and don’t have another cool area to store the specimens in, they should be refrigerated to prevent deterioration and to make your dissection experiences more pleasant and successful.

We will utilize the Moodle learning management to distribute lab procedures and other printed materials. It will also be used to administer lab quizzes and the exams. Lab procedures, which you will download from the Moodle website, have primarily been written using Microsoft Word. If you have Word on your computer, you should be able to work on the documents with no difficulty. If you use another word-processing program, which does not have the translator for Word documents, the instructor will attempt to provide you with the documents in a form, which you can use. As a student, you are eligible to purchase the Microsoft Office Suite (Educational Version) for MacIntosh or PC for approximately \$150. It’s REALLY worth the price! One other option is to download the OpenOffice suite (<http://www.openoffice.org>) , which is **free** and very similar to Office.

**VII. Instructional Strategies:** The following instructional strategies will be employed to help you learn the material.

Direct instruction

Indirect instruction

Interactive instruction

Experimental learning

Guided and independent study

Lab Quizzes

Practice Quizzes

Inquiry approach

Simulations

Questioning skills

Downloaded animations

Application

Crossword puzzles

**VIII. Learning Experiences:**

Integrated Laboratory Activities-

A series of lab activities have been designed which will allow you to experience some of the activities available to on-campus students. Some of the materials needed for dissections or other activities will be sent from the bookstore (lab kit). Other materials will be things commonly found in your kitchen.

We'll provide specific instructions in their use in the content area of MOODLE, so there'll be no need to purchase a lab manual. For a few lab activities, we will send photomicrographs taken in our lab for you to interpret.

Depending on the specific lab, there will be written lab reports and/or lab quizzes to be completed. Use the lab report forms provided for the photo lab reports. Compress all photos submitted. Instructions on how to compress the photos are provided under Student Information/Resources found near the top of the course home page. Submit the lab reports, with photos as required to the drop-boxes (i.e. the Pregnant White Rat Lab Report and Photo Box) for evaluation and grading. Lab quizzes are completed online using the quizzing tools in Moodle and must be completed individually. See below for information about completing labs with a partner. A few lab quizzes have questions or sections that must be manually graded and the grades for those lab quizzes will not be available until those questions have been graded by us. You will however be able to see within the quiz, the scores for all the other questions, after submission of the quiz.

All Lab Reports, Lab Quizzes and Lab Exams must be completed by the scheduled due dates as listed on the course schedule posted on the course Moodle site. Activities will be turned off as of 11:55 pm on those due dates and no credit will be available for those activities after the due dates. If an emergency situation occurs, which affects your participation in this course, contact us immediately. Be prepared to provide proof. Being busy is not an emergency. For the purposes of this course an emergency situation is an unexpected, unpreventable and significant occurrence, which realistically prevents you from completing required coursework by its due date. You are expected to be aware of due dates and manage the required coursework within your personal schedule and obligations. For example, not submitting any coursework for 3 weeks and then not being able to submit it during week 4 because of an emergency that week is not acceptable.

All "wet" labs where a dissection or other lab procedure is completed by you require the submission of specified digital photos taken during the lab procedure. The photos will include required "portraits" of you with your lab specimen at the beginning of the lab and later during the lab process as directed in the lab procedure. These portraits are to be full-face photos of you, of such clarity that you, the specimen, and structures required to be identified, are clearly visible and identifiable. No credit for any part of a "wet" lab will be given without the submission of the required photos. The score for a lab quiz associated with a wet lab will not be included in the course grade if the associated wet lab is not completed

When doing a wet lab: **1.** Read the lab procedure thoroughly before performing a dissection or other "wet lab". **2.** Make sure that you take all required photos. **3.** Check that each required photo is focused and structures clear before moving on with your dissection. Credit cannot be given for what we cannot see. **4.** Keep your specimen until your report has been graded and you are sure you will not need it again. If you are unable to find a requested structure, explain why you think you could not find it, where you would expect to find it, and what you would expect it to look like

After completing the lab activities, look at the lab directions and at your recorded results. It is important to state what your actual results are. This will tell us a great deal, including whether or not our instructions are clear. You will be expected to be able to explain what happened and why. The preparatory materials and activities should give you an understanding of what would be a normally expected result in a lab activity. If you do not think that your results are what they should be, state that in the report. Explain what you think should have happened and why. Problem-solve and attempt to understand and explain what may have happened to cause your results to differ from the expected results. It is possible to get the wrong result and still receive significant credit if you provide this information. .

Complete assignments in the order in which they are listed in the course schedule whenever possible. Submit coursework including exams as soon as completed and no later than the designated due dates. After you have submitted coursework, check to see that they have been uploaded to the Moodle course site where they are available to the instructors. . If you have difficulty in submitting coursework, please contact an instructor or instructional technology services. Complete at least one attempt with a passing grade for each required assignment. Verify that you have submitted all required assignments and that they have been successfully uploaded in Moodle where they are available to the instructors.

**IX. Lab Partners:** “Wet” lab (primarily dissection) activities may be completed with a partner and a lab kit may be shared. If you plan to do this, you **MUST** email your name, your lab partner’s name, the date that you order your lab kit from the bookstore and the name that it is ordered in, to john.lankow@mayvillestate.edu and to nancy.lankow@mayvillestate.edu. The dissection tasks must be shared. If a Lab Report is required, the reports must be individually written and submitted by each lab partner; the objective data would be the same, while the questions would be individually answered showing your individual understanding and interpretation of the data. You will certainly want to discuss results and their interpretation with your lab partner, but the write-up is part of the learning process for each of you. You may wish to include a brief discussion of any differences of opinion and the reasoning involved. A photo must be taken of both students together holding the specimen at the beginning of the lab, prior to any dissection, and together again in the second required portrait for each lab, indicating with a probe the location of the structure as required by the lab procedure. All other required pictures for the lab must also be taken and submitted in the lab report by each person

## **X. Lab Examinations**

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 the respiratory system, 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 as well as applications associated with the structures and systems studied. Identification of structures in photographs and line art is included in the exams.

## **XI. As a student you are expected to:**

- Begin the lab course when the semester begins.
- Check your lab kit for all enclosed items when it arrives. Contact the MSU Bookstore immediately if all items are not present and intact
- 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.
- Check your Mayville State email and the ANNOUNCEMENTS section on the course home page a minimum of three times weekly to remain current on course information and changes.
- Contact course instructors by phone or email about questions or concerns, using the contact information found in the “Where we are ...” section of the course home page.
- Contact an instructor promptly about an unexpected and unpreventable event, which significantly affects your participation in the course preventing the submission of coursework, including exams, by scheduled due dates as discussed above in VIII. Learning Experiences.

## **XII. As a student you can expect that:**

- Lab reports and lab quiz answers needing to be manually graded will routinely be graded within two work weeks of the submission deadline, excluding holidays. Comment areas of corrected coursework, and emails will be used to provide additional feedback on some assignments. Students may be requested to contact an instructor by email or phone to improve student learning or to clear up instructor questions, assuring that the student will receive appropriate credit for work completed and knowledge learned on an assignment.
- Instructors will use the **ANNOUNCEMENTS** section near the top of the course home page to communicate course information, problems encountered and changes or corrections required.
- You can reach the instructors by phone or email as stated in the “Where we are ... “ section of the course home page for a response on course questions and concerns, or to set up a phone appointment.
- You can access resources on grammar and composition from the **MSU Writing Center** to assist in completion of course assignments. Access this help through the MASU DSO 100 - Distance Student Orientation course (Topic 6). They are available to online students by making an appointment. Online “Additional Resources” such as the Harvard Guide for “Tips on Grammar, Punctuation, and Style” are also found in the DSO 100 course.

### **XIII. Schedule of completion:**

A list of required course activities is provided, with due dates for each exam and its prerequisite activities. You are encouraged to save this schedule on your computer and schedule your own target dates for the prerequisite assignments based on your personal schedule; work, home obligations, available study time, learning style, etc. It is recommended that you complete the chapters in sequence as shown on the course schedule where possible. **Course activities will not be available after their due dates.**

### **XIV. Evaluation/grading:**

Your individual scores will be visible in the grades area. The lab reports are worth 30% and the lab quizzes are worth 30% of your total grade, with the two lab exams each constituting 20% of your grade. In order to get an A, you should achieve an overall percentage of 85%, a B, 75%, a C 65%, and a D 55% of the available points.

Grades are available as an unofficial transcript after being entered by the Office of Academic Records after submission at the end of the semester. Current and former students with Campus Connection access (includes all students who attended Mayville State University from Fall 2003 to present) may view and print an “unofficial” transcript free of charge by logging into [Campus Connection](#) and clicking on Self Service, Academic Records and then View Unofficial Transcript. To order a transcript, log into the [National Student Clearinghouse](#) and follow the step-by-step instructions. To request a transcript if you do not have a credit/debit card and/or valid e-mail address, complete the [Transcript Request Form](#) and send it along with payment to:

Mayville State University  
Office of Academic Records  
330 Third St. NE  
Mayville, ND 58257

### **XV. Important Student Information**

- “Important student information” can be found in your Moodle course shell.
  - English Proficiency and Other Academic Concerns
  - Students with Disabilities

- Academic Honesty
- Emergency Notification
- Continuity of Academic Instruction for a Pandemic or Emergency
- Family Educational Rights and Privacy Act of 1974 (FERPA)

**Addendum 1, Biology 221 Lab Syllabus, INTASC Principles**

<b>INTASC PRINCIPLES</b>	
<b>1</b>	The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he/she teaches and can create learning experiences that make these aspects of subject matter meaningful for the student.
<b>2</b>	The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social, and personal development.
<b>3</b>	The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to the diverse learner.
<b>4</b>	The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking problem solving, and performance skills.
<b>5</b>	The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.
<b>6</b>	The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
<b>7</b>	The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
<b>8</b>	The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.
<b>9</b>	The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.
<b>10</b>	The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.