MAYVILLE STATE UNIVERSITY

Human Anatomy and Physiology 1
BIOL 220, 3 Credits
Spring 2013 Syllabus

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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 because of the hour or our availability, please email us, including a phone number and 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. It is recommended that you use the email account provided to you as an online Mayville State University student, rather than changing that communication tool in your personal profile in the Moodle learning management system. Mayville State University does not recommend the use of another email address or the forwarding of email to a personal email account, as this practice may compromise the security of your identity and personal information. If you find that you receive frequent emails which do not pertain to you, there are steps shown in the MASU DSO 100 - Distance Student Orientation course Outline Page accessed under "My Courses" in Moodle or at ,https://lms.ndus.edu/course/view.php?id=546, which can help to eliminate some of the incoming messages and manage those that you do in fact want to receive.

I. Course Description:
BIOL 220 ANATOMY AND PHYSIOLOGY I (CCN) 3 S.H.
Three hours lecture per week. The study of the anatomy and physiology of the human body will be studied as an integrated topic. This is the first course of a two-course sequence. Topics which will be considered include cellular anatomy and metabolism, the organization of cells into tissues, and the integumentary, skeletal and joint, muscular, nervous, and somatic and special senses. BIOL 111 or BIOL 150 or equivalent and CHEM 121 are recommended. Spring on campus; Fall, Spring, Summer online.

II. Purpose/Detailed Description of the Course:
During this semester, we will consider the increasing levels of complexity of the human body, beginning with the basic structure of atoms, and progressing to molecules and molecular processes; how the molecules are organized to form cellular organelles, how the organelles function together to form the smallest living unit – the cell; organization of cells into tissues which combine to form organs. We will begin our study of organ systems with the integumentary, skeletal, muscular, nervous and sensory systems. The topics covered by the course are listed below. The required assignments are listed, but there are also other optional activities such as practice quizzes of terminology and identification and crossword puzzles.

Course Content:

Ch 1 Introduction to Human Anatomy and Physiology (INTASC 1-6, 9)

- **Topics:** Introduction, Anatomy and Physiology, Levels of Organization, Characteristics of Life, Maintenance of Life, Organizations of the Human Body, Life-Span Changes, Anatomical Terminology
- **Assignments:** Study Guide, Chapter Mastery Quiz. **(INTASC 3, 4)**

Ch 2 Chemical Basis of Life (INTASC 1-6, 9)

- **Topics:** Structure of Matter, Chemical Constituents of Cells
- **Assignments:** Study Guide, Chapter Mastery Quiz, linked animations **(INTASC 3, 4)**

Ch 3 Cells (INTASC 1-6, 9)

- **Topics:** A Composite Cell, Movements Into and Out of the Cell, The Cell Cycle, Control of Cell Division, Stem and Progenitor Cells
- **Assignments:** Study Guide, Chapter Mastery Quiz, linked animations **(INTASC 3, 4)**

First Exam Ch 1, 2, 3 (INTASC 8)

Ch 4 Cellular Metabolism (INTASC 1-6, 9)

- **Topics:** Metabolic Processes, Control of Metabolic Reactions, Cellular Respiration, Nucleic Acids and Protein Synthesis, Changes in Genetic Information
- **Assignments:** Study Guide, Chapter Mastery Quiz, linked animations **(INTASC 3, 4)**

Ch 5 Tissues (INTASC 1-6, 9)

- **Topics:** Epithelial Tissues, Connective Tissues, Muscle Tissues, Nervous Tissues, Types of Membranes
- **Assignments:** Study Guide, Chapter Mastery Quiz **(INTASC 3, 4)**

- **Ch 6 Skin and the Integumentary System (INTASC 1-6, 9)**
- **Topics:** Skin and Tissues, Accessory Organs of the Skin, Regulation of Body Temperature, Skin Color, Healing of Wounds and Burns, Life-Span Changes.
- **Assignments:** Study Guide, Chapter Mastery Quiz **(INTASC 3, 4)**

Second Exam Ch 4, 5, 6 (INTASC 8)

Ch 7 Skeletal System (INTASC 1-6, 9)

- **Topics:** Bone Structure, Bone Development, Bone Function, Skeletal Organization, Skull, Vertebral Column, Thoracic Cage, Pectoral Girdle, Upper Limb, Pelvic Girdle, Lower Limb, Life-Span Changes
- **Assignments:** Study Guide, Chapter Mastery Quiz **(INTASC 3, 4)**

Ch 8 Joints of the Skeletal System (INTASC 1-6, 9)

- **Topics:** Classification of Joints, General Structure of a Synovial Joint, Types of Synovial Joints, Types of Joint Movements, Examples of Synovial Joints, Life-Span Changes
- **Assignments:** Study Guide, Chapter Mastery Quiz **(INTASC 3, 4)**

Ch 9 Muscular System (INTASC 1-6, 9)

- **Topics:** Structure of a Skeletal Muscle, Skeletal Muscle Contraction, Muscular Responses, Smooth Muscles, Cardiac Muscle, Skeletal Muscle Actions, Major Skeletal Muscles, Life-Span Changes
- **Assignments:** Study Guide, Chapter Mastery Quiz, Interactive Physiology CD, linked animations **(INTASC 3, 4)**

Third Exam Ch 7, 8, 9 (INTASC 8)

Ch 10 Nervous System I (INTASC 1-6, 9)
- **Topics:** General Functions of the Nervous System, Classification of Neurons and Neuroglial Cells**,** Cell Membrane Potential, Synapses, Impulse Processing
- **Assignments:** Study Guide, Chapter Mastery Quiz, Interactive Physiology CD, linked animations **(INTASC 3, 4)**

Ch 11 Nervous System II (INTASC 1-6, 9)
- **Topics:** Meninges, Ventricles and Cerebral Spinal Fluid, Spinal Cord, Brain, Peripheral Nervous System, Autonomic Nervous System, Life Changes
- **Assignments:** Study Guide, Chapter Mastery Quiz, linked animations, Interactive Physiology CD. **(INTASC 3, 4)**

Ch 12 Somatic and Special Senses (INTASC 1-6, 9)
- **Topics:** Receptors and Sensations, Somatic Senses, Special Senses, Life-Span Changes
- **Assignments:** Study Guide, Chapter Mastery Quiz, linked animations **(INTASC 3, 4)**

Comprehensive Final Exam: 50% of the exam covers Chapters 1-9, 50% of the exam covers Chapters 10-12. **(INTASC 8)**

III. Goals and Objectives (Student Learning Outcomes):

Unit 1 Levels of Organization Chapters 1-4: Students who have completed this unit should be able to:
- understand the scope of studies in anatomy and physiology and be able to use and understand descriptive anatomical and directional terminology.
- explain the basic concept of homeostasis and how homeostatic mechanisms apply to body systems.
- describe the different molecules of which the body is composed, the processes which form those molecules, and the release and use of energy from nutrients.
- identify cellular structures and explain their respective function

Unit 2 Support and Movement Chapters 5-8: Students who have completed this unit should be able to:
- describe the basic tissues of the body and their location and explain their functions.
- identify and describe the major gross and microscopic anatomical components of the integumentary system and describe the functions of the system.
- identify and describe the major gross and microscopic anatomical components of the skeletal system and explain their functional roles in osteogenesis, repair, and body movement.
- identify and describe the major gross and microscopic anatomical components of the muscular system and explain their functional roles in body movement, maintenance of posture, and heat production.

Unit 3 Integration and Coordination Chapters 9-12: Students who have completed this unit should be able to:

- identify and describe the major gross and microscopic anatomical components of the nervous system and explain their functional roles in communication, control, and integration.
- identify and describe the major gross and microscopic anatomical components of the eye and ear and explain their functional roles in vision, hearing and equilibrium. Students should also be able to identify and locate the receptors responsible for olfaction and gustation and briefly describe the physiology of smell and taste.

IV. 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.

V. Materials Required

- **Text:** Hole's Human Anatomy and Physiology 12th or 13th Ed.; Shier, Butler, & Lewis, McGraw-Hill Publishing
- **Interactive physiology CD: The A.D.A.M. 10-module interactive physiology CD is required** and is available from the University Bookstore as well as other sources. It will be shown in the Course Materials area in the bookstore website. It will provide the basis for a number of questions in the examinations. **You should order the text and interactive physiology CD as soon as you register for the course. (**www.maillestatebookstore.com, 800-437-4104 ext 34823)

We will utilize the Moodle learning management system accessed through http://lms.ndus.edu/ or https://lms.ndus.edu/course/view.php?id=2296 to distribute study guides, and other printed materials. Moodle will also be used to administer chapter mastery quizzes, exams, and practice quizzes. **Note**: 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 approximately $120 for a PC and $150 for a MacIntosh. (It's REALLY worth the price!) We will utilize Moodle to electronically distribute study guides, laboratory procedures and other printed materials. Microsoft Works can also be used. One other good option is to download the OpenOffice suite (http://www.openoffice.org) , which is **free** and very similar to Office.

VI. 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
- Chapter Quizzes
- Practice Quizzes
- Inquiry approach
- Simulations
- Questioning skills
- Downloaded animations
- Application
- Crossword puzzles

VII. Learning Experiences:
Our study of Human Anatomy and Physiology involves a number of different types of learning activities including required study guides and chapter mastery quizzes, which are done at your computer wherever you are able to work and submitted online, and exams. Please note however, that you are not allowed to take your exams in your home or your proctor's private home or residence. You must take your exam at a professional office; school, college or university, library; or other business or public institution. There are no requirements for on-campus visits. Recommended supplementary activities including practice quizzes, and crossword puzzles are also provided, which you are able to complete an unlimited number of times.

The course material is divided into four segments or quarters; chapters 1-3, 4-6, 7-9, and 10-12. An initial assignment is due on January 12th. All other assignments and quizzes are due on the exam dates for each course quarter. If you are taking one Anatomy and Physiology lecture course during the semester, your goal should be to complete an average of one chapter every 9-10 days. This will mean completion of the study guides and chapter mastery quizzes, the appropriate exams, and if you are also taking the lab course, the lab activities associated with each chapter. Some chapters are relatively short and can be mastered in a short time, while others will present some significant challenges so the time to complete a particular chapter may vary. You'll also need to allow for review time prior to completing the examinations. It is important to work on the material for shorter periods on a daily basis rather than to do a single "cramming" session. You will learn much more of the material, do better on the exams, and retain more of the material for use in your work career and personal life.

Read each chapter prior to completion of the assignments for that chapter. Complete assignments in the order in which they are listed in the course schedule whenever possible, i.e. complete SG 1 and CMQ 1 prior to starting Chapter 2 activities, and take each exam as soon as possible after completing its prerequisite activities. View and use animations in the study guides to help to complete the pertinent questions in the study guide. Submit coursework including exams as soon as completed and no later than the designated due dates. **Complete at least one attempt with a passing grade for each required assignment found in the chapter topic areas before taking the exam covering the material in that chapter.** Contact your proctor early to schedule each exam date, assuring that you can take it by its due date. Verify that you have submitted all required assignments and 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.

Study Guides
The first activity in each chapter to be completed is a written study guide (SG) in a Microsoft Word format, which is downloaded from the course home page. This is an open-book activity, in which you may use any resource available to determine the correct answers. Remember however that the SGs as well as the CMQs are based on the materials required for the course: the text, the quick links found in course materials, and the Interactive Physiology CD. There are a few assignments when other resources, such as a web search, are specifically required for an assignment. There are a number of activities associated with the SGs intended to assist you in your understanding of the material. The study guides consist of three different areas. They are:

- A short summary or introduction to the chapters in the text.
- A list of the major learning objectives for the chapter.
- A series of questions that will help you learn essential materials and will give you the opportunity to demonstrate your understanding of concepts or principles addressed in the chapter.

When you've completed the study guide and are satisfied that answers provided are correct, submit it to us in the Moodle course shell using the submission boxes (SG1 Drop box, etc.). The Study Guides are to be completed as individual work and may be revised based on instructor comments or scores and resubmitted. If resubmitting a study guide file, change the file name to include RESUBMITTED in capital letters before doing so

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Chapter Mastery Quizzes:

When you've submitted the study guide, a chapter mastery quiz (CMQ) is next. The CMQs are also open book activities. When the CMQ is submitted, the computer will grade the quiz and give you a score. You will be able to determine which questions are incorrect or partially correct by looking at the points awarded for each question. It will not give you the correct answer. You may then study the material further and retake the quiz. A total of three attempts may be made on each quiz. All components of the CMQs are to be completed as individual work.

You are not required to complete all available attempts of every chapter mastery quiz, but completing as many of them as you are able to will help you learn the material, review the material for exams, provide the highest score possible towards your course grade and apply the material to your educational or career purpose. You will receive the highest grade earned on an attempt for a particular chapter mastery quiz.

Proctored objective Examinations:

Four proctored examinations are required in this course.

Prerequisites: In order to take an exam, you must complete at least one attempt of every **required** course activity found in the pertinent chapter topic areas. You are encouraged to do as well as possible in all course activities, but students must achieve at a minimum a passing grade in the three chapter mastery quizzes required for an exam. **If you have difficulty in achieving this percentage in a specific activity, please contact an instructor for assistance.**

Exams will consist of multiple-choice, matching, or other types of objective questions, which will be available by logging into the Moodle course site. Some of the multiple-choice questions will include images you will demonstrate your acquired knowledge of human anatomy. Your proctor will be sent the passwords for each exam. These exams are **not** open-book/open notes exams. They are monitored, closed book exams and are intended to be taken in the same way as any normal "on-campus" exams where your only resource is your personal knowledge. The computer server will send the exam to your location for you to complete **online** and submit. It will grade the exam and allow you to view your score immediately. The three exams plus a comprehensive final exam will be available to you when you are ready for them, *having submitted the prerequisite study guides and chapter mastery quizzes.*

Note: You will need to arrange for a proctor for your exams. Your proctor needs to be established with the Distance Education Office at MSU, by the third week of class, so that your proctor is in place when you need to take your first exam, preventing a crisis from developing. **It takes time to locate and establish a qualified proctor so start this process immediately**. Information about proctors and proctored exams is available on the Outline page of the MASU DSO 100 - Distance Student Orientation course referenced in the second paragraph of this syllabus. Proctors must be present for the entire duration of all Exams. Passwords will not be provided to a student outside of the monitored exam setting. **All questions about proctors and exam locations should be addressed to Office of Extended Learning at 1-800-437-4104 ext: 34667.**

VIII. As a student you are expected to:

- Begin immediately to locate a qualified individual willing and able to proctor your exams and establish this proctor with the Office of Extended Learning as above.

- Answer questions appropriately: Some study guides answers may be given without full sentence structure where appropriate to the questions asked, but must clearly answer 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 Mayvillle State email and course home page **Latest News and ANNOUNCEMENTS** a minimum of twice weekly, but preferable daily to remain current on course information and changes.
- Contact course instructors by phone or email about course, 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.**

IX. As a student you can expect that:

- Items needing to be manually graded will routinely be graded within one workweek 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 forum and the Latest News feature near the top of the course home page to communicate course information, problems encountered and changes or corrections required.
- You can contact 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.

X. Schedule of completion:
A list of required course activities is accessed near the top of the course home page, with due dates for each exam and its prerequisite activities. You are encouraged to save this schedule on your computer and to schedule your own target dates for the prerequisite assignments based on your personal schedules; work, home obligations, available study time, learning style, etc.

XI. Evaluation/grading:
Your grades will be based upon the following four types of activities. Each type of activity is worth a distinct percentage of the total grade for the course (see C below). The values of each activity are shown in the grade book of the website.

A. Study Guides and Chapter Mastery Quizzes:
Study guides will be reviewed for completion and grades entered in the study guide portion of the grade book. They are the primary instrument, which you will use to learn the material. These study guides make up 20% of your course grade.

When you've completed the study guide, you may then proceed to the Chapter Mastery Quiz (CMQ). You may take the chapter mastery quiz up to three times, with the best score being recorded. The answers to any short answer or essay questions must be "manually" graded by an instructor and your

score will not reflect the points earned in the quiz until these questions have been graded. Chapter Mastery Quizzes count as 20% of the total grade.

B. Exams and Final Exam

Proctored Examinations:

Four examinations will be given during the course. The first exam will be provided when you have completed the introductory material, an introduction to chemistry, and cell structure. The second exam will cover material associated with cellular metabolism, tissues, and the integumentary system. The third exam will cover the skeletal and joint system and the muscular system. The final exam, which is cumulative, is described below.

These objective exams will consist of multiple-choice questions, matching, drop-down lists, or fill-in-the-blank questions, which will be available through the course Moodle website. Some of the matching questions will include images where you will demonstrate your acquired knowledge of human anatomy. The questions will be based upon material found within the text, and on materials found in the study guides, chapter mastery quizzes, and interactive physiology CD.

Passwords, which will allow you access to the exams will be sent to the proctor, who you have established through the Office of Extended Learning. All exams will be cumulative, and will contain questions related to material previously covered in the course. **Prior to taking an exam students are to submit at least one valid attempt for all assignments, which are scheduled for completion before taking the exam.**

Final Exam:

Approximately half of the material in the final will be devoted to topics related to Chapters 1-9. The remainder will be taken from all other materials examined during the course in Chapters 1-12. The final exam will consist of questions covering all material studied during the semester. It will have approximately 150 questions.

Exams 1-3 each make up 23% of the exam category grade and the final exam makes up 31% of the exam category grade. The exam category makes up 60% of your total grade

C. Final Grade: Final course grades will be assigned based upon qualitative and quantitative work. Qualitative: the amount of effort you put forth (see Instructional Strategies). You must satisfactorily complete study guides as indicated. Quantitative: the number of points, which you earn compared to the number possible. Your grades will be based upon the study guides (20%) and chapter mastery quizzes (20%), and examinations (60). Your individual scores will be visible in the grades area. 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 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

XII. 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 Syllabus, INTASC Principles

	INTASC PRINCIPLES
1	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.
2	The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social, and personal development.
3	The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to the diverse learner.
4	The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking problem solving, and performance skills.
5	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.
6	The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
7	The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
8	The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.
9	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.
10	The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.