

BIOL 22 – HUMAN PHYSIOLOGY

SPRING 2023

REEDLEY COLLEGE

SECTION: 51025

INSTRUCTOR: KAREN MARKS

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LECTURE: M/W 9:00AM – 10:50AM IN PHY 76 **LAB:** F 9:00AM – 11:50AM IN LFS 11

Course Description: Primarily for students majoring in health-related professions, this course is a prerequisite for the Nursing and Physical Therapy program satisfies a major requirement for those students majoring in Kinesiology or Public Health and satisfies other major requirements for Biology majors. Prerequisites: BIOL 20, grade of C or better OR BIOL 1A AND CHEM 1A/1AL (or 3A*), grade of C or better.

Course Objectives

1. Assess the results of laboratory experiments and demonstrations.
2. Illustrate the cell membrane, its electrical activity, and the conduction of action potentials.
3. Compare the autonomic system and the endocrine system.
4. Analyze the cardiovascular system by performing an EKG and monitoring blood pressure.
5. Evaluate lung and kidney function using computer simulations.
6. Demonstrate knowledge of metabolic and physiological disorders of the major organ systems

Course SLOs

1. Describe the function of each human organ and organ system
2. Explain the cell membrane potential and how it becomes an action potential.
3. Describe the cell-to-cell communication.
4. Demonstrate the use of the electrocardiograph and identify the components of a normal reading
5. Describe the interactions of the respiratory and excretory systems.
6. Demonstrate critical thinking in the evaluation of homeostasis.
7. Be able to obtain desired information about human structures, functions, or pathology using common references: have the foundation of knowledge needed for further studies in physical therapy, pharmacology, pathology, pathophysiology, and medicine.

COURSE MATERIALS

This course uses free, open-access materials. While you may choose to pay for a physical copy of the book or for paper copies of the lab, neither is required. The textbook is found in a free format and can be accessed directly through Canvas, with the appropriate sections linked in their respective modules. You can also access the entire book online without Canvas. Lab documents will be found on Canvas and can be either printed or completed electronically. Safety equipment for the labs will be provided in class.

Textbook Title: OpenStax Anatomy and Physiology 2e.

Textbook Link: <https://openstax.org/details/books/anatomy-and-physiology-2e>

Exam Supplies: 882-E scantrons x 6

ATTENDANCE-RELATED POLICIES

Dropping the Class: Attendance is especially important at the beginning of the semester. All students are expected to attend the first day of class and lab to establish an intention to attend the class for the semester. Students who do not attend the first lecture or the first lab may be dropped for non-attendance. Additionally, students who miss more than two class meetings in the first three weeks may be dropped as well. After the first three weeks, students will be responsible for dropping the class if they choose to no longer attend.

Adding the Class: Students hoping to add the class should attend the first day of class. Previous systems required an “add code”. These are no longer used. Instead, if you wish to add the class, you must obtain permission from the instructor, who will add that permission to Self-Service. Then, you may log in to Self-Service and add the class. Students must add the class within 3 days of obtaining permission. Students who fail to add the class on Self-Service in a reasonable timeframe will have permission revoked.

Lab Attendance: In this section, labs are UNGRADED. However, attendance in the lab is still REQUIRED. Students who miss too many lab meetings will face grade-related consequences. See the lab section on the syllabus as well as the general policies outlined on Canvas for details.

Important Dates

Last Day to Add: 1/29/2023

Drop without a W: 1/29/2023

Last Day to Drop (W): 3/10/2023

COMMUNICATION POLICIES

Email/Canvas: I generally respond to emails within 24 hours on weekdays, with potentially slower responses over weekends. Please allow that time for a response before sending a follow-up email. In emails (especially when not using the Canvas messaging system) please include the class/section you are in to add clarity to your message.

In-Person/Office Hours: TBA

LECTURE POLICIES

General Lecture Statement: This course meets for almost four hours of lecture per week. Attendance in lectures is key to success in the class, as lectures will help you decipher dense, difficult material through traditional lectures, discussions, and activities. Attendance in lectures will not be actively monitored, but poor attendance is tightly linked with poor grades. Students will be expected to come to the lecture prepared to participate in activities to gain the most from the time allotted.

Lecture Exams: There are five module exams and one cumulative final exam in this course. These exams are paper exams and will require you to bring an 882-E scantron. Scantrons will not be available in class on the day of the exam so please bring your own. ***Make-up exams will NOT be readily offered without the instructor's permission.*** You MUST take them on the scheduled day and time unless other arrangements (such as DSP&S proctoring) have been made. If you have a known conflict from a college-sponsored event (such as a sporting match), you MUST contact the instructor in writing at least 1 week in advance to make arrangements. Emergency situations will be handled on a case-by-case basis, at the instructor's discretion.

Case Studies: Case studies are assignments that involve the research and presentation of information on a specific condition. Students will complete one for each module, with the lowest score dropped at the end of the semester. Some time in lectures and/or labs will be available to work on these, but students should expect to conduct most of the work on case studies outside of regular class time.

Extra Credit: Extra credit is generally not offered in this class. Students will have other opportunities to improve their grade by demonstrating the knowledge they have missed previously. Requests for personal extra credit are not ethical, as it robs other students of the same opportunity, and so requests for extra credit will be ignored.

LAB POLICIES

Lab Safety: Lab safety is essential in class. Students will be required to sign a lab safety sheet during the first lab and given access to a copy to keep. In physiology, substances that can cause harm will be present, including but not limited to various chemicals, blood, saliva, and urine. Students are required to follow all safety rules given in class, such as no food or drink in the lab and proper lab attire requirements. Students who fail to adhere to proper lab safety rules will be asked to correct the issue or leave the classroom.

Lab Attendance: Even though labs are UNGRADED, attendance is still required. The following is the attendance policy for labs:

- Missing more than **3 labs** will result in dropping ONE entire letter grade.
(Highest grade possible = B)
- Missing more than **6 labs** will result in dropping TWO entire letter grades.
(Highest grade possible = C)
- Missing more than **9 labs** will result in AUTOMATIC FAILURE of the course.

ACADEMIC INTEGRITY

Academic Integrity Policy: You're expected to demonstrate your best work in the course. That means maintaining academic integrity. What is academic integrity? It's when you are accurately and honestly demonstrating your knowledge of the course material. Violations of this are called academic dishonesty AKA cheating. Cheating can be obvious, such as looking at your neighbor's test answers. But it can also be more insidious, such as copying answers from Google or Chegg. Students caught cheating will receive a "0" on the assignment and may be referred to the Dean.

"Cheating" can include but is not limited to:

- Copying someone else's work (plagiarism)
- Possessing/using test banks
- Lying to get extensions/exemptions
- Copying from sources without providing a citation (like Google or Chegg)
- Paying for/getting paid to complete someone else's work

Remember that many of you want to go into healthcare or something similar. You'll have classes that come after this that build on what you learn here. You may need to take special exams to get accepted into a program or obtain a license. You'll also have the well-being of others in your hands. That means you should know your stuff!

GENERAL COLLEGE POLICIES

Accommodations for Students with Disabilities: If you have a verified need for an academic accommodation or materials in alternate media (e.g., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact your instructor as soon as possible and provide a copy of the specific accommodations.

SCCCD Nondiscrimination Statement: SCCCDCD complies with all federal and state rules and regulations and does not discriminate on the basis of national origin, religion, age, sex (gender), race, color, medical condition, ancestry, sexual orientation, marital status, physical or mental disability, or because he or she is perceived to have one or more of the foregoing characteristics.

This holds true for all students who are interested in participating in educational programs and/or extracurricular school activities. Harassment of any employee/student with regard to national origin, religion, age, sex (gender), race, color, medical condition, ancestry, sexual orientation, marital status, physical or mental disability, or because he or she is perceived to have one or more of the foregoing characteristics is strictly prohibited.

Inquiries regarding compliance and/or grievance procedures may be directed to the college's Title IX Officer and Section 504/ADA Coordinator.

GRADING

General Grading Statement: Students will be graded based on their demonstration of knowledge in class. Attendance, participation, or other non-academic activities will not count for points toward final grades. Ungraded assignments may be submitted for feedback to make improvements. Grades are not rounded and are non-negotiable and may only be adjusted in the rare case of an error.

Points Breakdown: Here is the breakdown of assignments that have a point value. In addition to the graded assignments, students will also have quizzes, activities, and labs to use to study.

Graded Item	Points
Module Exams (5 x 100 pts)	500
Final Exam	100
Case Studies (4 x 50 pts)	200
<i>Total:</i>	800

Grading Scale: Here is the grading scale used to calculate final grades. Final grades will not be rounded and requests to round or deviate from this grading scale will be ignored.

Letter Grade	Percentage
A	90%+
B	80-89.9%
C	70-79.9%
D	60-69.9%
F	<60%

TENTATIVE SCHEDULE

Week	Lecture	Lab
Week 1 (1/9-1/13)	Ch 1: Intro to A&P Ch 2: Biochemistry	Intro to Physio Labs Lab Safety Intro to Case Studies
Week 2 (1/16-1/20)	<i>Monday -- No Lecture (MLK Day)</i> Ch 3: Cells	Homeostasis and Metric
Week 3 (1/23-1/27)	Ch 24: Metabolism	Biochemistry and Cells
Week 4 (1/30-2/3)	Ch 5: Skin Unit 1 Exam (Wednesday)	Metabolism and Enzymes
Week 5 (2/6-2/10)	Unit 1 Case Study Due Monday Ch 6/9: Bones and Joints Ch 10: Muscle	Skin and Bones
Week 6 (2/13-2/17)	Ch 10: Muscle	Muscles
Week 7 (2/20-2/24)	<i>Monday -- No Lecture (Pres. Day)</i> Unit 2 Exam (Wednesday)	Nervous System and Reflexes
Week 8 (2/27-3/3)	Unit 2 Case Study Due Monday Ch 12: Nervous Tissue Ch 14: Somatic NS	The Senses
Week 9 (3/6-3/10)	Ch 15: Autonomic NS Ch 17: Endocrine System	Endocrine System
Week 10 (3/13-3/17)	Ch 18: Blood Unit 3 Exam (Wednesday)	Blood
Week 11 (3/20-3/24)	Unit 3 Case Study Due Monday Ch 19: The Heart Ch 20: Blood Vessels	The Heart -- Electrical Activity

Week 12 (3/27-3/31)	Ch 20: Blood Vessels Ch 21: The Lymphatic and Immune Systems	The Heart -- Pressure and Rate
SPRING BREAK 4/3 -- 4/7		
Week 13 (4/10-4/14)	Ch 21: The Lymphatic and Immune Systems Ch 22: Respiratory System	Respiratory System
Week 14 (4/17-4/21)	Ch 23: Digestive System Unit 4 Exam (Wednesday)	Digestive System
Week 15 (4/24-4/28)	Unit 4 Case Study Due Monday Ch 25: The Urinary System Ch 26: Fluid, Electrolyte, pH Balance	Urinary System
Week 16 (5/1-5/5)	Ch 27: Reproductive System	Reproductive System
Week 17 (5/8-5/12)	Unit 5 Exam (Monday) Final Review	Final Review
Week 18 (5/15-5/19)	Unit 5 Case Study Due Monday Final Exam -- TBD	