

Course Description: BIOL 22 Human physiology will introduce fundamental processes of how the human body functions and essential skills for higher education. This course is a prerequisite for students planning a career in health-related professions such as a nurse, physician’s assistant, nurse practitioner, laboratory technician, radiologist, nuclear medicine technologist, inhalation therapist, medical office assistant, medical record keeper, dental hygienist, physical therapist, surgical assistant, and also students in premedical, pre-dental, physical education, sports medicine, nutrition, and pre-chiropractic programs. This class is taught in a student-centered format in both nontraditional “lectures” and exploratory labs. Lectures will consist of PowerPoints interspersed with participation activities, in class quizzes, and group discussions. This being said, quizzes and class activities will not be available online, therefore, attendance is mandatory. Laboratory will be largely hands-on and team-based, utilizing a variety of resources including PowerPoint, online simulations, microscope work, models, and human and animal specimens. The course learning goals are focused around applying fundamental physiology, actively participating in a group, and presenting your ideas in writing, graphics, and oral presentations.

SYLLABUS FOR BIOLOGY 22, HUMAN PHYSIOLOGY	
(55143)	
Spring 2020	Reedley College
Lecture: Lecture Mon, Wed 06:15PM - 08:05PM, Life Science, Room 11. Lab Mon, Wed 08:15PM - 09:30PM, Life Science, Room 11	Instructor Name: Megan Cornel, M.S.
Course Number: 5 Units 4 Lecture hours, 3 Lab hours	E-Mail: megan.cornel@reedleycollege.edu

Learning with Canvas

Course content including all lecture PowerPoints and assignments are available and accessible through the Canvas Learning System. All course announcements, assignments, grades, rubrics, etc. will be available on Canvas. Check the Canvas site frequently for announcements, study help, and updates. Relying solely on online class lecture notes will not be enough since in class participation will award points for quiz scores, group activities, etc. Attending lecture is therefore mandatory.

Prerequisites: BIOL 20 and CHEM 3A or CHEM 1A, taken in the last five years. Eligibility for ENGL 125, 126, or 153; or ESL 67 and 68 recommended

ADVISORY: Eligibility for English 125 and 126 or English 153 or ESL 67 and 68 and Math 103 recommended. There are also required Textbooks and Materials.

Objectives: Throughout the course, content, assignments, and exams will require students to explore and integrate content from the following topics:

Course Outline

- A. The Study of Body Functions
- B. Chemical Composition of the Body
- C. Cell Structure and Genetic Control
- D. Enzymes and Energy

- E. Cell Respiration and Metabolism
- F. Interactions Between Cells and the Extra-cellular Environment
- G. The Nervous System: Neurons and Synapses
- H. The Central Nervous System
- I. The Autonomic Nervous System
- J. Sensory Physiology
- K. Endocrine Glands: Secretion and Action of Hormones
- L. Muscle: Mechanisms of Contraction and Neural Control
- M. Heart and Circulation
- N. Cardiac Output, Blood Flow, and Blood Pressure
- O. The Immune System
- P. Respiratory Physiology
- Q. Physiology of the Kidneys
- R. The Digestive System
- S. Regulation of Metabolism
- T. Reproduction
- U. Bone regulation and clinical applications

Lab Outline

- A. Homeostasis and Negative Feedback
- B. Colorimetry: Measurement of Plasma Glucose, Cholesterol and Protein
- C. Diffusion, Osmosis, and Tonicity
- D. Cell Transport Mechanisms and Permeability
- E. Endocrine System Physiology
- F. Neurophysiology of Nerves
- G. Cutaneous Receptors
- H. Skeletal Muscle Physiology
- I. Cardiovascular Physiology
- J. Cardiovascular Dynamics
- K. EKG Lab
- L. Blood Analysis
- M. Respiratory System Mechanics
- N. Renal System Physiology
- O. Acid/Base Balance
- P. Chemistry and Physiology of Digestion
- Q. Nutrition, metabolism and bone regulation
- R. Serological Testing
- S. Immunity

Internet Access: extremely important (see Materials on Canvas and Connect below)

Textbooks: Text:

- Connect Human Physiology by Stuart Ira Fox 15th Edition Online (includes eBook: **Required**)
- Custom Lab Manual Steward Fox ISBN-978-1-30-748439-7
- Scantron #882-E for lecture tests (x6)

Materials on Canvas:

- **Syllabus** will show you this document and schedule for lecture and lab
- **Modules** contains course material, lecture outlines, and Lecture Exam Reviews (Study guides) organized by unit topics and posted as we cover them.

Internet: Connect Online is required:

Go through the link in the canvas course only.

Contains **homework and IRAT Quizzes**, available only at certain times of the course, which is required. If you bought a used book or did not buy the bundle through the bookstore there may be an additional cost to access Connect.

You are required to use your student ID code to register for Connect in case there are other students with your same name. **It is YOUR RESPONSIBILITY to check online to see when the “homework” is due and TURN IT IN ON TIME.** I WILL NOT CHANGE THE DUE DATES or give individual student’s work special consideration. **At the end of the course I will take your overall percentage for all of the homework and apply it to the total credit points.**

Examinations and Major Assignments

Description	Possible Points
4 Lecture Exams	400 points
13 Lab Assignments (Lab Report, Physio-ex @ 8 pt each)	105 points
5 Vernier Worksheets @ 5pt each	25 points
15 Lab Discussion @ 5 pt each	75 points
Participation, Attendance, and Discretionary	20 points
20 Learn Smart Assignments	200 points
18 Irat Quizzes @ 10 pt each	180 points
Case Study Presentation	100 points
Lecture Final	200 points

Total points **1305**

To calculate your grade, total the points earned and divide that number by the total points available (1,229). **Course grades are non-negotiable; Instructor reserves the right to curve individual tests and/or assignments. FINAL GRADES WILL NOT BE CURVED... ALSO, I DO NOT round up your grades to the next letter grade.**

The final course grade is based on:

Lecture Exams:

Four midterms and one comprehensive final will cover the topics listed in the schedule below. The questions are multiple-choice, true/false, or matching with some essay questions. The comprehensive portion of the final will only be 20% of that exam; the other 80% will cover the final topics in last unit. Study guides will be posted (or not) at my discretion and should ONLY be used as a study guide, not as an indication of the exact questions on the tests. The stations will have several questions (2 to 4, depending on the exam) and you will be allowed 30 seconds per question; the exam dates are listed on the schedule below. You will be asked to identify structures or answer questions based on laboratory exercises; you will pick the answer from a given list and fill in the ovals on your scantron.

Lab Reports (LR):

Study questions are given at the close of most exercises in your lab manual. The following Schedule lists the questions that you are responsible to answer for lab reports (see column on the right). Lab reports are **due at the end of the lab period each class**. Only a portion of the Lab Reports will be graded, but **there will be a 50% penalty if the entire assignment (see Schedule) is not complete**

LearnSmart & IRAT:

Outside of class, reading and practice questions will give points for how much content and critical thinking you learn using McGraw-Hill Connect, accessed through Canvas. MH Connect scores will be based on participation and completion and posted in the Canvas gradebook. IRAT quizzes will occur on dates specified on the course schedule outside of class time. IRAT quizzes are given through Connect website and will only be open for a set period. If you are late your quiz will still be collected automatically when the time is up. Material may include any combination of multiple-choice, true-false, matching, fill in the blank, and short answer questions. Learn Smart assignments will be due before the start of the next lecture week as listed in the schedule.

Case Study:

During the course, a Case Study booklet will be uploaded to Canvas with eight physiological case studies. You will be sitting in the lab in eight groups of three people each; I will assign each group one of the eight case studies and you will use the prompts below to create an oral presentation.

- Presentations will take place during the final lab sessions.
- Use a minimum of **three** peer reviewed article sources, to research the questions in the Case Study. The sources must be written within the last 10 years and be published in a journal. Other sources (such as your book) are encouraged but will not count towards your 3 journal sources.
- The presentation should be approximately 10 minutes in length and each member of the group must participate. Although a PowerPoint or other video presentation is preferred, you may use other methods; however, you will be graded on the professionalism of your presentation.

Attendance, Participation, and Discretionary:

These points have been collected throughout the labs where your score falls between 0 and 20 points. These points come from:

- Lab Attendance (staying the full period and being on time)
- Participation in experiments, activities, and discussions (sharing with other groups, every member participates, and writing answers on board to labs where we averaged class data or used cumulative results) This includes labs where each group did some parts of procedures and other groups did other procedures).
- Doing your own lab report with unique answers (this is where I deducted points for identical homework or answers word-for-word copied from introductions, or lab reports not being done individually).

Extra Credit:

Extra credit may be assigned during lab times and lecture.

Grading

To calculate your grade, total all points earned and divide that number by the total points available (1,229). Course grades are non-negotiable; because extra credit points, exam curves, and low score replacement are offered the grading scale will not be adjusted; I DO NOT ROUND UP your grades to the next letter grade. **The final course grade is based on:**

<i>Percent Range</i>	<i>Grade</i>
90-100	A
80-89.99	B
70-79.99	C
60-69.99	D
Less than 60	F

Safety and Classroom Rules

Please respect other students, the laboratory materials, and the classroom. No food, phones, or distracting objects. I am aware that emergencies arise but place your electronics on vibrate as to not distract me or others.

You will be given a Safety Rules sheet to sign in the lab, which describes further safety procedures that you MUST follow. The lab is shared with other sections and classes so be respectful of other class models and materials and clean your area before leaving. Do not use pencils or fingers to point out structures on the models, please use provided pointers when possible. Damaged models, missing materials, or messy lab areas will result in groups or entire sections to lose points.

No food or beverages allowed. A warning will be given to you but further offenses will cause point deductions and you will be asked to leave class or dispose of the safety hazards immediately.

Regular cell phone use will not be tolerated in this class, if you insist on using your phone more than occasionally during lecture then do not attend as you will be distracting me and fellow students. Some activities will encourage social discussions and online access so internet capable devices will be allowed only during these activities. Other than these activities, turn off, silence, or turn on vibrate all cell phones prior to class. You can use devices to record audio and/or notes but do not video record during lectures. Web or internet posting of recorded lecture materials are not allowed.

College Policies

The college has several policies that you will be expected to adhere to in my course. The **Policy on Students with Disabilities, the University Honor Code, the Policy on Cheating and Plagiarism, a statement on copyright, and the university computer requirement**, portions of which are below, can all be found in the University Catalog (Policies and Regulations) and Class Schedule.

ATTENDANCE AND DROP/ADD POLICY

Your success in this course requires that you be ***on time and participating*** for each lecture and lab. Excuses for absences will be honored at my discretion. Most announcements will be placed on Canvas but find a “buddy” in class to inform you of any announcements that might be made during your absence. I will drop students (both enrolled and waitlisted) based on the following policy:

- Student does not attend the first lecture.
- Student does not attend the first lab.
- Student misses a cumulative 7 hours (lecture or lab) in the first two weeks.
- Student misses 8 hours (lecture or lab) up to drop date without providing an excuse.

HOWEVER, you are responsible for dropping yourself from the class if you wish to do so. Do not rely on my paperwork skills should you decide to no longer attend the course, and I will be forced to give you a grade (usually an “F”) if you stop attending after the 9 week drop date.

Cheating and Plagiarism: I DO NOT TOLERATE CHEATING. PERIOD. This includes copying others lab reports, homework, case study presentations, etc. Many assignments are social or group assignments where working together is encouraged, but unless specified as a group activity, all work is individual and unique. If identical work is submitted, all individuals involved will receive 0 points for the assignment and be penalized based on the offense. Most of you are entering into the health care field and could harm or seriously injure other human beings if you do not know the basic information in this course. The University policy reads, "Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it includes any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means.

Any student caught cheating or plagiarizing will be subject to the Reedley College disciplinary procedures (review the Reedley College catalog section on academic dishonesty). Electronics of any kind are not permitted during exams and will result in an automatic zero for that exam. Allowing someone else to cheat off your work will also be considered cheating and you will be penalized the same as the individual/s using your work.

Students with diagnosed disabilities should contact the Disabled Students Programs and Services’ (DSP&S). Please give me a copy of the letter you receive from DSP&S detailing class accommodations you may need. If you require accommodation for test-taking, please make sure I have the letter no less than three days before the test. If you have a need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible so that I can work with you to make sure you do not miss out on anything.

Teaching Philosophy and Course Expectations

I teach this class with a non-traditional style of lecture where the “lectures” are divided into short segments interspersed with activities and Kahoot quizzes. The purpose of this is to keep the class student centered and following an active learning style. The lab portions will be largely group based learning but require individual lab reports to be written up and discussions to be broken up between different members of the group. This encourages communication skills, leadership skills, and teamwork. This course is not just a grade, it is a step towards your career in which the content you learn will be built upon and applied. The skills used to practice, discuss, and present the content are also important for you further education and careers and so will also be incorporated into your grade. This includes working with others, communicating with me and peers, learning new concepts, finding and citing credible sources, and critically thinking.

Students with Disabilities/Special Accommodations: Any student in need of an accommodation due to a disability is encouraged to provide the instructor with their notification of authorized services form from DSP&S and consult with the instructor immediately so that arrangements can be made.

X. TENTATIVE SCHEDULE

Please bring a Kahoot accessible device (phone, tablet, ipad, or laptop) to every lecture (or find a group where at least one person has a device) and your lab manual to every lab. Additions or changes will be announced in class and posted on Canvas.

- Lab Reports are due at the end of each assigned lab.
- 50% penalty of points will be accrued if due past the lab.

Week	Dates	Lecture (Book Chapter)	Lab (Manual Chapter)
1	1/13-1/15	Syllabus Study of Body Function (1) Chemical Composition of Body (2) Chapter 1 and Chapter 2 (Due 1/21) 2 IRATs (1/21)	Lab 1: Introduction to Anatomy & Physiology and Microscopes ➤ Lab Report: Homeostasis Worksheet ➤ Introduction to Vernier Systems (Graded in discretionary)
2	1/22	MLKJ holiday no class 1/20 Cell structure and Genetic Control (3) Chapter 3 (Due 1/26) IRAT (1/26)	Lab 2: Examination of Tissue and Organs ➤ Tissue slides and drawings
3	1/27-1/29	Enzymes and Energy (4) Chapter 4 (Due 2/2) IRAT (2/2)	Lab 3: Diffusion, Tonicity, and Osmosis ➤ Lab Report: 2.6 PG 83 Q: 1-9
4	2/3-2/5	Cell Respiration and Metabolism (5) Chapter 5 (Due 2/9) IRAT (2/9)	Lab 4: Endocrine ➤ Vernier Systems Yeast Worksheet ➤ Physio-Ex Worksheet (Start on it)
5	2/10-2/12	Cells and Extracellular Environment (6) Endocrine (11) Chapter 6 and 11 (Due 2/18) 2 IRATs (2/18)	Lab 5: Endocrine Glands ➤ Physio-Ex Worksheet
6	2/19	Washington Day Holiday 2/17 no class Neurons and Synapses (7) Chapter 7 (Due 2/23) IRAT (2/23) Exam #1	Lab 6: Reflex Arc ➤ Lab Report: 3.3 Q: All ➤ Vernier Systems Reflex Worksheet
7	2/24-2/26	The Central Nervous System (8) Autonomic Nervous System (9) Chapter 8 and 9 (3/1) 2 IRATs (3/1)	Lab 7: Cutaneous Receptors and Referred Pain ➤ Lab Report 3.4 Q: 1-17
8	3/2-3/4	Sensory Physiology (10) Chapter 10 (Due 3/8) IRAT (3/8)	Lab 8: Nervous ➤ Physio-Ex Worksheet (Start on physio-Ex)
9	3/9-3/11	Muscle (12) Chapter 12 (Due 3/15) IRAT (3/15)	Lab 9: Sensory ➤ Lab report: 3.6
10	3/16-3/18	Blood, Heart, and Circulation (13) Chapter 13 (3/22)	Lab 10: Muscle (@ RC gym) ➤ RC Gym field trip

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		IRAT (3/22) Exam #2	➤ Vernier Systems Muscle Worksheet
11	3/23-3/25	CO, BF, and BP (14) Chapter 14 (Due 3/29) IRAT (3/29)	Lab 11: Electrocardiogram ECG ➤ Lab Report 7.3 Q:1-12 ➤ Vernier Systems ECG Worksheet
12	3/30-4/1	Respiratory (16) Chapter 16 (Due 4/12) IRAT (4/12)	Lab 12: Effects of Exercise on Heart ➤ Lab Report 7.6 Q: 1-17 ➤ Daphnia Necklace Worksheet (Not graded)
13	4/13-4/15	4/6-4/10 Spring Recess no class Physiology of Kidney (17) Chapter 17 (Due 4/19) IRAT (4/19)	Lab 13: Measurement of Pulmonary Function ➤ Vernier Systems Lung Worksheet
14	4/20-4/22	Immune System (15) Chapter 15 (Due 4/26) IRAT (4/26) Exam #3	Lab 14: Renal Regulation & Blood Lab ➤ Lab Report 9.3 Q: 1-12 ➤ Blood typing Kit
15	4/27-4/29	Digestive System (18) Metabolism (19) Chapter 18 and 19 (Due 5/3) IRAT (chapter 18 only (5/3))	Lab 15: Digestion of Carb, Protein, and Fat ➤ Lab Report: 10.2 Q:1-13 (Due)
16	5/4-5/6	Reproduction (20) Case study prep Chapter 20 (Due 5/10) Exam #4	➤ No lab
17	5/11-5/13	Review	Case Study Presentation
Finals	5/18	Final Exam: (Cumulative)	