

**Course Description**

The field of human biology is among the most exciting in modern science. The purpose of this course is to help you develop an understanding of fundamental processes that form the basis of biological life. Primarily for students majoring in health-related professions, this course is a prerequisite for the Biol 20 (Human Anatomy) and Biol 22 (Human Physiology). It is taught in a traditional lecture and laboratory format in combination with additional online content; lectures will utilize PowerPoint and a variety of multimedia presentations. Laboratory will be largely hands-on and team-based, utilizing a variety of resources including PowerPoint, multimedia, prepared microscope slides, models, and human and animal specimens. The course outcomes are designed to help you *understand and apply* (not just memorize) cell biology concepts, and to help you think in an analytical and critical way about contemporary cellular issues. Due to the rapid rate of new discoveries, it will not be possible to cover the entire field of cell biology during this (or any) course, so we will concentrate on essential areas of study.

Syllabus for <b>BIOLOGY 5 HYBRID, HUMAN BIOLOGY</b> <b>(51031)</b>	
SUMMER 2019	Reedley College
Office Number: TBA	Instructor Name: Joseph Lin
Units: 4 units, 3 hybrid-lecture hours, 3 lab hours	E-Mail: <a href="mailto:joseph.lin@reedleycollege.edu">joseph.lin@reedleycollege.edu</a>
Lectures: Lab: Monday, Tuesday, Wednesday, Thursday, Friday 10:15 AM – 12:20 PM	Telephone: 559-638-0300 Lin: Ext. <b>3407</b>
Location: Lectures: Web (Online) Labs: LFS Room C	Office Hours: M-Th 9:15-10:15 (location upon request) Lin: LINE and upon request (24-hour notice)

**Learning with Canvas**

Additional course resources including all lecture notes and assignments are available and accessible through the Canvas Learning System. All course announcements, assignments, rubrics, etc will be available so there should be no confusion on what is expected or how your performance will be evaluated. Check the Canvas site **daily** so that you are aware of any course changes. The Canvas Learning System is accessed at <https://sccd.instructure.com/>

**Prerequisites:** None, eligibility for ENGL 125, 126, or 153; or ESL 67 and 68 recommended. This is an introductory hybrid course using the principles approach to general biology which satisfies the general science requirements focused on students entering health or science careers. It is a prerequisite for all advanced science courses (Human Anatomy, 20; Human Physiology, 22; Human Anatomy and Physiology, 24; Microbiology, 31).

**ADVISORY:** Eligibility for English 125 and 126 or English 153 or ESL 67 and 68 and Math 103 recommended. Required Textbooks and Materials

**Student Learning Outcomes: Upon completion of this course, students will be able to:**

1. demonstrate knowledge regarding the process of science and society, microscopy, and the cell
2. identify human body levels of organization and homeostatic mechanisms
3. demonstrate knowledge of the chemical basis of life
4. evaluate scientific literature and current biological achievements
5. apply the principles of genetics to humans and understand the outcome of normal and abnormal DNA
6. describe the basic cellular, molecular and gross anatomy of tissues, organs and organ systems and explain the basic function of those tissues and organs that relate to the integument, circulation, digestive, respiratory, urinary, skeletal, muscular, nervous, endocrine, reproduction, genetics, and evolution
7. identify and recall fundamental structures from anatomical models and slides using correct nomenclature and language

**Course Objectives: In the process of completing this course, students will:**

1. read, analyze, evaluate, and discuss scientific method, the cell, and human levels of organization
2. learn the periodic table of the elements, the chemistry of the carbon atom, and the chemical structure of humans
3. analyze and interpret data on the homeostatic mechanisms within the human body
4. learn the cell's structure, function, and the cell cycle in relation to the multicellular human body
5. observe and document the structure and function of the human body by examining human body systems including: circulatory, digestive, respiratory, urinary, skeletal, muscular, nervous, sensory, endocrine, and reproduction
6. review classical and molecular genetics and learn the processes of replication, transcription, and translation
7. perform experiments, observe, and record data
8. study evolution
9. discuss social issues between humans and science
10. develop a vocabulary to effectively communicate information related to anatomy and physiology.
11. summarize the levels of structural organization important to the human anatomy

**Internet Access:** REQUIRES as this is a hybrid course.

**Textbooks:**

**Lecture:** Mader, Sylvia S. and Michael Windelspecht, Human Biology, 15th edition. 2017. (You don't need a hard copy, just the digital book will do, as long as you have connect access)

**Lab:** Lab Manual is available for you to print on Canvas. If necessary, you can purchase a printed copy at the Reedley College Bookstore. Details will be given in lab.

**Materials on Canvas:** Several critical items are available on Canvas for this course. Within "Syllabus" you will find this syllabus and a one-page schedule. You can access the buttons on the bottom of your homepage to find critical resources for the course. You will find announcements, supplement readings, additional videos, power-points, study lists, and (possibly) Lecture Exam Reviews.

**\*Note:** Separate Canvas course for lab materials

**Internet: Connect Online is Required:** <https://connect.mheducation.com/class/j-lin-rc-biol-5-summer-20199>

Contains **homework**, 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.

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You are required to use your student ID code to register for Connect in case there are other students with your same name. This “homework” IS **T REQUIRED** for the course but is available for increased understanding of the material and for extra credit that can be used to increase your total grade percentage. **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 the homework and apply it to the total credit points.**

### Test and Evaluation

Assignment Description	Points
LearnSmart (21@5pt)	105 points
Lecture Exams (4@75pt)	300 points
Final Exam	150 points
IRAT Quizzes (17@10pt)	170 points
Writing Assignment	50 points
Lab Exams (1@30pt, 2@60pt)	150 points
Lab Reports (15@10pt)	150 points
Lab Drawings (10@5pt)	50 points
Case Study Presentations	50 points
<b>Total</b>	<b>1175 points</b>

Extra Credit (see VII below)

To calculate your grade, total all points earned and divide that number by the total points available (1,125). **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.

### LearnSmart and Connect Quizzes

What you already know about cell biology will be assessed prior to the lecture. Scores for these How much content and critical thinking you learn from lecture will be formatively assessed using McGraw-Hill Connect, accessed through Canvas. MH Connect scores will be based on performance, converted to a common scale, and posted in the Canvas gradebook. Quizzes will occur on dates specified on the course schedule. 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 and combination of multiple-choice, true-false, matching, fill in the blank, and short answer questions. **Learn Smart assignments are organized in Units and each set will be due weekly on the Saturday of the week.**

**Lab Exams**

*Lab exams must be taken on the day that they are scheduled. There are no make-ups, no exceptions.* There will be 3 lab exams (see the Tentative Schedule for exam dates). These exams will be in the form of a practical, where stations are set up with models, microscopes, and/or images for identification or an explanation. Students will be timed (45 seconds per question) and will rotate around the room until all students have been through all stations. Questions will be a variety of fill-in, multiple choice, and matching questions.

**Lab Reports**

Each lab in-person class session will have an associated lab report. Lab reports are due at the end of their scheduled class session. No late lab reports will be accepted. *You cannot turn in a lab report for a lab that you were not in attendance of.* Lab reports must be submitted on the lab report pages provided on Canvas and/or in class.

**Lab Drawings**

For some lab sessions, students will be required to submit a lab drawing. Exact details of the drawing will be given in class and posted on Canvas. These lab drawings should be done on a sheet of plain white paper. Lab drawings are due at the time of the lab exam for each unit. No late lab drawings will be accepted.

**Case Study Presentation**

Each student will be responsible for working with a group of students (3-4) in this course to complete an in-class case study presentation. Each group of students will be assigned a 'patient' with an example disease. At the conclusion of the semester, each group will give a 10-15 presentation to the class describing their patient's disease, and the appropriate courses of treatment. Detailed instructions (including topics, formatting requirements, rubrics, due dates, ect.) for the assignment are available on Canvas. *If you do not fulfill the requirements of this presentation assignment in its entirety, you cannot pass Biol 5.*

**Extra Credit:**

Extra credit could be assigned during the course.

**ATTENDANCE AND DROP/ADD POLICY**

Your success in this course requires that you be **on time and here** 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 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 weeks drop date.

**Grading**

To calculate your grade, total all points earned and divide that number by the total points available. 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>
89.5-100	A
79.5-89.4	B
69.5-79.4	C
59.5-69.4	D
Less than 59.5	F

**Professional Behavior is expected at ALL TIMES**

**Electronic device:** Please respect other student, the laboratory materials, and me. No food, cellular phones, pagers, or profanity at any time! I am aware that emergencies arise but place your electronics on silent or “manner” mode.

**Safety:** You will be given a Safety Rules sheet to sign in the lab, which delineates further safety procedures that you MUST follow. In order to participate in lab activities, wearing shoes with closed toes is required. Please remember to clean up the lab after every exercise, as areas left dirty or messy at the end of the period will result in those student groups being **docked 5 points** for every offense.

**Food:** No food or beverages allowed. Cell phone use will not be tolerated in this class; turn off your cell phones prior to class. Students are allowed to do audio recordings of lectures but not video. Web or internet posting of recorded lecture materials are not allowed. Laptops may be used in this class; laptop users should sit in the back row to avoid distracting others.

**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.

**Cheating and Plagiarism: I DO NOT TOLERATE CHEATING. PERIOD. 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.

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.

### Teaching Philosophy and Course Expectations

Learning new concepts occurs most effectively when it is built on what students *already know*, when students work and *think* like a real scientist, and when they become self-aware of *how* they learn, not just *what* they learn (Donovan, 2005). Learning is a deliberate and conscious decision, one that involves breaking established neural patterns and creating new ones. This can be a frustrating and emotionally draining process for those unused to authentic learning. To best facilitate your growth, my expectations are for you to:

- Think critically. This course will develop your critical thinking abilities. People that analyze, infer, evaluate, and make reasoned judgments perform better in college, make better daily decisions, and have greater professional success. Developing critical thinking skill should be a goal of every student in this course.
- Apply yourself. Success in this course will require a lot of your time and energy. If you have high learning expectations, that is what you will achieve. Expect to invest significant effort (several hours of study time for each hour of class). Depending on your science background, you may need to spend more or less study time. Attend class regularly, be on time, and budget the time and energy needed to accommodate the workload.
- Ask questions. Cell biology is fascinating, and new discoveries are made every day. Ask questions. If you aren't clear on something, there are likely others who are equally unclear on the topic. I expect interactive dialogue during all course meetings.
- Be informed. People sometimes use scientific information to manipulate others' behaviors and decision-making in ways not always to your benefit. If you don't understand the scientific basis of an issue, you can't make an informed decision about it. Be curious; try and find out all you can about a topic before you make a choice that may profoundly affect your life.
- Be respectful. We will discuss controversial issues in this course. Everyone will respect others' right to express their opinions even if you disagree. Respectful discourse is simple good manners and is a minimal expectation of every student.
- Take responsibility. The level of effort you put in is directly related to your academic and eventual professional success. Whether you choose to do excellent or shoddy work is up to you. I will not disrespect you by giving a grade you did not earn. If you mess up, take responsibility, grow from it, and move on. The best learning comes from making mistakes. This course is designed to help you evaluate and revise poor learning habits.
- Communicate clearly. Effective written and oral communication is a sign of an intelligent mind. Clarity, proper format, spelling, and grammar are expected of every student. Don't expect me to evaluate what I can't read or understand.
- Use common sense. Don't cheat on assignments or exams, and don't plagiarize others' work – either will result in a zero and the possibility of disciplinary action by the university). Don't bother turning in late assignments, since I won't accept *anything* late unless you have written documentation from an appropriate source or have made prior arrangements with me. If you have a problem that prohibits you from turning something in on time, let me know ahead of time. In all instances, good communication with me will prevent most of, much of problems.

Biology 5 – Human Biology Lecture Schedule

**TENTATIVE SCHEDULE**

Please bring your textbook to lecture and your textbook and lab manual to every lab. This is very important!

Week	Dates	Lecture (Book Chapter)	Lab (Manual Chapter)
1	Monday 6/24	Introduction, and Exploring Life and Science (1)	<b><u>Introduction to Microscopy</u></b>
1	Tuesday 6/25	Chemistry of Life (2) <b><u>IRAT-Chapter 1 (In-lab)</u></b>	<b><u>Cell Structure &amp; Function</u></b>
1	Wednesday 6/26	Cell Structure and Function (3) <b><u>IRAT-Chapter 2 (In-lab)</u></b>	
1	Thursday 6/27	DNA Biology and Technology (22) <b><u>IRAT-Chapter 3 (In-lab)</u></b>	<b><u>DNA Structure &amp; Function</u></b>
1	Friday 6/28	Catch-up/Questions and Answers	<b><u>Genetics</u></b>
2	Monday 7/1	Chromosome Inheritance (19) <b><u>IRAT-Chapter 22 (In-lab)</u></b>	<b><u>Histology</u></b>
2	Tuesday 7/2	Organization and Regulation of Body System Organ Systems (4) <b><u>IRAT-Chapter 19 (In-lab)</u></b>	<b><u>The Cardiovascular System</u></b>
2	Wednesday 7/3	Cardiovascular: Heart and Blood Vessel (5) <b><u>IRAT-Chapter 4 (In-lab)</u></b>	<b><u>Biological Molecules</u></b>
2	Thursday 7/4	<b>Holiday</b>	<b>Holiday</b>
3	Monday 7/8	Lymphatic System and Immunity (7) <b><u>IRAT-Chapter 5 (In-lab)</u></b> <b>Exam 1</b>	<b><u>Exam 1 Lecture Monday</u></b>
3	Tuesday 7/9	Digestive System (9) <b><u>IRAT-Chapter 7 (In-lab)</u></b>	<b><u>Lab Exam 1</u></b>
3	Wednesday 7/10	Respiratory System (10) <b><u>IRAT-Chapter 9 (In-lab)</u></b>	<b><u>Histology</u></b>
3	Thursday 7/11	Urinary System (11) <b>Exam 2</b>	<b><u>The Skeletal &amp; Muscular Systems</u></b>
4	Monday 7/15	Skeletal System (12) <b><u>IRAT-Chapter 10 (In-lab)</u></b> <b><u>IRAT-Chapter 11 (In-lab)</u></b>	
4	Tuesday 7/16	Muscular System (13) <b><u>IRAT-Chapter 12 (In-lab)</u></b>	<b><u>The Nervous System &amp; Special Senses</u></b>
4	Wednesday 7/17	Nervous System (14) <b><u>IRAT-Chapter 13 (In-lab)</u></b>	
4	Thursday 7/18	Senses (15) <b>Exam 3</b>	

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5	Monday 7/22	Endocrine System (16) <b>IRAT-Chapter 14 (In-lab)</b> <b>IRAT-Chapter 15 (In-lab)</b>	<b>Exam 3 Lecture Monday</b>
5	Tuesday 7/23	Reproductive System (17) <b>IRAT-Chapter 16 (In-lab)</b>	<b>The Endocrine &amp; Reproductive Systems</b>
5	Wednesday 7/24	Development and Aging (18) <b>IRAT-Chapter 17 (In-lab)</b>	<b>Pig Dissections</b>
5	Thursday 7/25	Biology of Infectious Disease (8) <b>Exam 4</b>	
6	Monday 7/29	Cancer (20)	
6	Tuesday 7/30	Human Populations and Ecology (23)	<b>Case Study Presentations</b>
6	Wednesday 7/31		<b>Lab Exam 2</b>
6	Thursday 8/1	<b>Final Exam</b>	

This schedule is subject to change with notice. It is the student's responsibility to attend class and listen for announcements regarding schedule changes.