

## BIOL 5

*Semester: Summer 2022 Reedley College*

**Instructor:**

Joseph Lin, MS  
Lora Benoit, PhD

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**Class No.** 55964

**Course (Lecture and Lab):**

Hybrid asynchronous lectures  
with in person labs

**Telephone:**

559-638-0300 Ext. 3407 (RC Office)  
559-795-9175 (Direct cellphone)

**Website:** To access the course

<https://sccd.instructure.com>  
using your SCCCD username and password.

**Office Hours**

Joseph Lin

- Discord M-Th @ 5:00-6:00PM
- <https://discord.gg/B7UbGUW>

Lora Benoit

- Zoom as requested
- In person after lab as requested

**Lab Periods**

- M-W @ 9:00-11:50AM, LFS RM 11

*The following sections regarding COVID are subject to change given changing circumstances on-campus and in the community. Please check the COVID website for the most up-to-date information at:*

<https://www.sccd.edu/lp/coronavirus/index.html>

**Vaccination:** In order to create a safe environment on campus, all students must be vaccinated against the SARS-CoV-02 virus, or obtain an exemption, in order to attend classes on campus or access any services on campus. Students may request an exemption to the vaccine requirement by going to their student portal to complete the COVID self-certification. Students with vaccination exemptions are subject to twice weekly COVID testing. You are not allowed to come to campus if any of the following is true:

- You have not been vaccinated, and have not been granted an exemption, or
- You have been granted an exemption but have not completed your required weekly testing.
- If you are feeling any symptoms COVID symptoms (fever, cough, fatigue, sore throat, congestion, nausea, etc.), please do not attend in-person class and email your instructor

**Safety Measures:** Face coverings are highly recommended to be worn indoors on-campus and during in-person classes (vaccinated or not), and/or in accordance with learning site requirements if

participating in off-campus experiential learning, to reduce the risk of community spread of COVID-19. The <https://www.reedleycollege.edu/campus-life/health-services/index.html> has complimentary masks available for students who need them. The mask requirement may be modified if/when transmission rates in Fresno Country increase or decrease.

Please remember that the same student conduct rules for in-person classroom instruction also apply for virtual/online classrooms. Students are prohibited from any unauthorized recording, dissemination, or publication of any academic presentation, including any online classroom instruction, for any commercial purpose. In addition, students may not record or use virtual/online instruction in any manner that would violate copyright laws. Students are to use all online/virtual instruction exclusively for the educational purpose of the online class in which the instruction is being provided. Students may not record any online recordings or post any online recordings on any other format (e.g., electronic, video, social media, audio recording, web page, internet, hard paper copy, etc.) for any purpose without the explicit written permission of the faculty member providing the instruction. Exceptions for disability-related accommodations will be addressed by Student Disability Services working in conjunction with the student and faculty member.

## Introduction

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 as a hybrid class. This means lectures will be asynchronous (self-paced recorded) content while lab is on campus. Lectures will utilize PowerPoint and a variety of multimedia presentations which will be uploaded as needed. The laboratory portion will be in person and will utilize 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.

## Course description

Primarily for students majoring in health-related professions, this course is a prerequisite for the Nursing and Physical Therapy programs, 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.

## Textbooks

**There is no traditional textbook; you will need to purchase the access code for McGraw-Hill Connect that will include the eBook.** If you wish to have a traditional textbook you may contact McGraw-Hill and you will receive a discount on a hard copy of the text, however, in order to complete this course you must have access to the eBook.

**You are required to finish assignments and assessments online.** In addition, there will be important information online. It is **YOUR RESPONSIBILITY** to come to both lecture and lab prepared with the content assigned.

Purchase URL for Connect online:

<https://connect.mheducation.com/class/j-lin-biol-5-su22---55964>

## Apps

**McGraw-Hill Connect:** Your access code will allow you to access the textbook and assignments. Although I have the assurance from the publisher that the content in your online assignments works for all electronics, this may not be the case. **It is your responsibility to find out if the content works with your electronic device.**

**Canvas:** Canvas is fully functional on many types of smartphones and tablets. Compatible devices include platforms such as iPhone/iPad/iPod Touch, and Android. **However, it is recommended that you do not solely rely on one of these devices to complete your online course work. Access to a computer is still needed for many online activities.** Visit the Mobile section of the [Canvas Guides](#) website for more information. Once you have downloaded the Canvas Mobile App and are prompted to Find My School, search for: csuconnect.instructure.com

## Communication Expectations

Identify yourself by your real name. Be mindful of your language, and avoid including personal information, such as phone numbers or addresses, in discussion forums. All online communications should be transmitted with the intent to inform, inspire, etc. and not to offend or breach personal privacy.

Use humor, joking, or sarcasm with caution. We often rely on non-verbal cues such as facial expressions to communicate joking or sarcasm, but these cues are not always clear in an online environment. These cues can be simulated with emoticons to reduce misunderstandings.

Be Professional, Clear and Respectful. Clear and effective writing translates to clear and effective communication. Writing the way you would speak is a good rule of thumb, use a positive tone and adhere to the same rules you would follow in face- to-face communications.

Remember This Course is Online. Your instructor and fellow students may be located around the world or have very different schedules than you do. You may not always receive an immediate response.

## Optional Zoom Meetings

If you are a new Zoom user, visit the Getting Started Resources on the Zoom website: <https://support.zoom.us/hc/en-us/categories/200101697>

## Learning Environment

This fully online course is designed using asynchronous activities, assignments, discussions, and assessments. The course will make use of many common LMS (learning management system) tools, e.g., Canvas. Please be sure to read all the lessons and documents in the course so that you have the necessary information to complete the required activities. If your campus uses a different LMS than Canvas, we recommend you watch the *"Navigating this Course"* Video before getting started.

## Learner Expectation

- This is a fast-paced course that requires regular engagement throughout all two weeks.
- Ensure you have approximately 14 hours per week to spend on this course outside of lab time
- Review the assignments on the Course Schedule and print it out for easy reference as you complete each task.
- You are expected to plan your study time around the course schedule and recommended completion

dates.

- While the due dates for the course are just suggestions, it is expected that **all assignments will be submitted based on due dates located on McGraw-Hill Connect website and Canvas.**
- Check your email account regularly for updated information. Use e-mail for private messages to the instructor and other students. The discussion forum is for public messages.
- If you have questions or confusion about an assignment, act promptly! Check the Question Cafe to see if your concern has been addressed already and post your question there if you don't see an answer.
- We are human and sometimes links or other pages need updating or become inactive.
- Read directions carefully.

## Course Objectives

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

## Course Student Learning Objectives

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 requirements/assignments

**Total points:**

Assignment Description	Points
LearnSmart (20@5pt) - Connect	100 points
IRAT Quizzes (20@10pt) - Connect	200 points

Final Exam - Connect	150 points
Lecture Exams (4@75pt) - Connect	300 points
Lab Quizzes (12@5pt) - Canvas	60 points
Lab Exams (3@50pt) - Canvas	150 points
Lab Reports (15@15pt) - Canvas	225 points
Case Study Project - Canvas	50 points
Discussions (11@ 8pt) - Canvas	88 points
<b>Total</b>	<b>points</b>

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

## Instruction for significant assignments

### Lecture Exams:

Four midterms and one comprehensive final will cover the topics listed in the schedule below. Each exam will be scheduled on the Connect platform with a required Lock-down browser during this timed exam. The comprehensive portion of the final will only be 20% of that exam; the other 80% will cover the final topics in the course.

### Lab Exams:

Lab exams must be taken on the day that they are scheduled. There will be 3 lab exams (see the Tentative Schedule for exam dates). These exams will be administered in person via Canvas and utilize images of models, slides, diagrams, and experimental set up. Question formats will include multiple choice true and false, and matching questions.

### LearnSmart & IRAT:

Pre-class preparation is essential for successful in-class experiences. What you learn on the McGraw-Hill Connect platform will be assessed prior to the weekly lecture content. The LearnSmart are reading assignments based on participation and completion at a 10-point total and posted in the Canvas gradebook. IRAT (Individual Readiness Assessment Test) are quizzes that occur on dates specified on the course schedule in class. 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 and combination of multiple-choice, true-false, matching, fill in the blank, and short answer questions. **IRAT and Learn Smart assignments will be due the Sunday 11:59PM of each week.**

### Lab Reports

Most of the labs will be done in person in the lab and you will be required to submit a lab report through the canvas upload. A blank lab report is available for you in canvas at no cost. For the dissection lab, you will need to additionally complete a simulated VR dissection using the McGraw Hill Connect platform through Virtual lab simulations. To receive full credit you will submit the print off lab report as a PDF in Canvas. **Late assignments will not be accepted. Lab reports will not be accepted for points for missed labs. Excessive (5 or more) lab absences will automatically result in a failing grade.**

### Case Study Project

At the end of the semester, each student will submit a case report in poster format that describes a theoretical patient with one of the diseases or disorders listed at <https://rarediseases.org/for-patients-and-families/information-resources/rare-disease-information/>. **Before you begin the assignment**, you must receive pre-approval for your chosen topic. If you are not sure what topic you want to research, ask your lab instructor for some ideas! **To complete this assignment:** Apply a standardized case report format as described at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4175810/>. You will use the poster template supplied by canvas to complete the report. Length: consist of ~ 1,500 words and should include labeled figures. References: 5 or more citations formatted using AMA. References should be obtained from <https://pubmed.ncbi.nlm.nih.gov/>.

## 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>
90-100	A
80-89.99	B
70-79.99	C
60-69.99	D
Less than 60	F

I **WILL NOT** give an individual student separate extra credit at the end of the course to increase their percentage grade. I do not mind correcting honest mistakes so do not hesitate to contact me regarding them, but do NOT ask for special treatment. Do not contact me to request that I “give” you a higher grade: **you earn the grade you receive in this course**.

### How to be Successful in this Course:

- If you should have trouble understanding the material presented in the course, it is your responsibility to see either your lab TA or me at the earliest possible time. Do not wait until the final weeks of the course.
- This course requires that you become familiar with and understand a great deal of information about the human body. This includes the LearnSmart reading assignments, which are purposely assigned ahead of lecture.
- Listen in lecture and take good notes using my outlines/pdfs from. Organize your notes and redo them if necessary, after lecture. Review your notes frequently, not just before a test.
- Do your reading assignments prior to the lecture on that topic. Read your labs prior to the lab period and partially complete the lab report to verify your answers during the lab.
- Keep a vocabulary list of all terms mentioned in lecture, in bold print in the text, or listed at the end of each chapter. Know the meaning of each of these terms and the correct spelling. Use APR if you have trouble with pronunciation.
- Spend some time studying each day. You are learning a new language; immerse yourself in it! Review notes for 15-30 minutes at one time. The best way to absorb book chapters is to read for one hour at a time. Don't try to complete your study hours all in one sitting or on the same day, as your efficiency will drop dramatically. Review an additional 3-5 hours a day prior to examinations.
- Form study groups to work together. Make your own review sheet or, if you work in a study group, have each person make a review sheet for a chapter and teach each other.
- Remember that homework is due prior to the end of the unit. Don't wait for the last minute to turn it in. This also will help me to see whether the whole class is having trouble understanding a concept before I test you on it. Obviously, it is much better for your grade in the class if I know you are having trouble.
- Use all materials available (text, lab notebook, Connect, interactive PowerPoints, model keys, internet sites, etc.); if one study method does not work try another! Use as many ways to access your memory as possible (auditory, visual, kinetic, etc.)

- Labs: take notes in lab on print outs or on an e-copy of the lab lecture. Ensure that you are fully engaged and participating in small group learning.

## 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 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 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.

### 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 include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own.



## Tentative Schedule

Week	Dates	Lecture (Book Chapter)	Lab (Manual Chapter)
1	Monday 6/20	<input type="checkbox"/> Introduction, and Exploring Life and Science (1) <input type="checkbox"/> IRAT & LearnSmart Ch.1 <input type="checkbox"/> Discussion: Current Scientific Advances	<input type="checkbox"/> Laboratory Safety Review <input type="checkbox"/> Lab Report 1 Microscope <input type="checkbox"/> Lab 1 Quiz
	Tuesday 6/21	<input type="checkbox"/> Chemistry of Life (2) <input type="checkbox"/> IRAT & LearnSmart Ch.2 <input type="checkbox"/> Discussion: You are what you eat	<input type="checkbox"/> Lab Report 2 Macromolecules <input type="checkbox"/> Lab 2 Quiz
	Wednesday 6/23	<input type="checkbox"/> Cell Structure and Function (3) <input type="checkbox"/> IRAT & LearnSmart Ch.3 <input type="checkbox"/> Discussion: Cell Analogy	<input type="checkbox"/> Lab Report 3 Cell Structure and Function <input type="checkbox"/> Lab 3 Quiz
2	Monday 6/27	<input type="checkbox"/> DNA Biology and Technology (22) <input type="checkbox"/> IRAT & LearnSmart Ch.22 <input type="checkbox"/> Discussion: DNA	<input type="checkbox"/> Lab Report 4 Transcription & Translation <input type="checkbox"/> Lab 4 Quiz
	Tuesday 6/28	<input type="checkbox"/> Chromosome Inheritance (19) <input type="checkbox"/> IRAT & LearnSmart Ch.19 <input type="checkbox"/> Discussion: How old is your body really?	<input type="checkbox"/> Lab Report 5 Mitosis and Meiosis <input type="checkbox"/> Lab Exam 1 (LABS 1,2,3,4,5)
	Wednesday 6/29	<input type="checkbox"/> Organization and Regulation of Body System Organ Systems (4) <input type="checkbox"/> IRAT & LearnSmart Ch.4 <input type="checkbox"/> Discussion: Creating your own genetic problems? <input type="checkbox"/> Lecture EXAM 1 (Ch.1,2,3,22,19)	<input type="checkbox"/> Lab Report 6 Genetics and Inheritance <input type="checkbox"/> Lab 6 Quiz
3	Monday 7/4	<input type="checkbox"/> Cardiovascular: Heart and Blood Vessel (5) <input type="checkbox"/> IRAT & LearnSmart Ch.5 <input type="checkbox"/> Discussion: Homeostasis	NO LAB, 4 <sup>th</sup> of July Holiday
	Tuesday 7/5	<input type="checkbox"/> Lymphatic System and Immunity (7) <input type="checkbox"/> IRAT & LearnSmart Ch.7 <input type="checkbox"/> Biology of Infectious Disease (8) <input type="checkbox"/> IRAT & LearnSmart Ch.8	<input type="checkbox"/> Lab report 7 Histology <input type="checkbox"/> Lab 7 Quiz
	Wednesday 7/6	<input type="checkbox"/> Digestive System (9) <input type="checkbox"/> Respiratory System (10) <input type="checkbox"/> IRAT & LearnSmart Ch.9 <input type="checkbox"/> IRAT & LearnSmart Ch.10 <input type="checkbox"/> Discussion: Respiration <input type="checkbox"/> Lecture EXAM 2 (Ch.4,5,7,8)	<input type="checkbox"/> Lab Report 8 Cardiovascular System <input type="checkbox"/> Lab 8 Quiz
4	Monday 7/11	<input type="checkbox"/> Urinary System (11) <input type="checkbox"/> IRAT & LearnSmart Ch.11	<input type="checkbox"/> Lab Report 9 Digestion, Respiration and Urinary Systems <input type="checkbox"/> Lab 9 Quiz
	Tuesday 7/12	<input type="checkbox"/> Skeletal System (12) <input type="checkbox"/> IRAT & LearnSmart Ch.12	<input type="checkbox"/> Lab Report 10 Musculoskeletal System <input type="checkbox"/> Lab 10 Quiz
	Wednesday 7/13	<input type="checkbox"/> Muscular System (13) <input type="checkbox"/> IRAT & LearnSmart Ch.13	<input type="checkbox"/> VR Lab 14: Digital Dissection Fetal Pig <input type="checkbox"/> Lab 14 Quiz <input type="checkbox"/> Lab Exam 2 (LABS 6, 7, 8, 9, 10)
5	Monday 7/18	<input type="checkbox"/> Nervous System (14) <input type="checkbox"/> IRAT & LearnSmart Ch.14 <input type="checkbox"/> Discussion: Food and the Nervous System <input type="checkbox"/> Senses (15) <input type="checkbox"/> IRAT & LearnSmart Ch.15 <input type="checkbox"/> Lecture EXAM 3 (Ch.9,10,11)	<input type="checkbox"/> Lab Report 11 Nervous System & Senses <input type="checkbox"/> Lab 11 Quiz
	Tuesday 7/19	<input type="checkbox"/> Endocrine System (16) <input type="checkbox"/> IRAT & LearnSmart Ch.16	<input type="checkbox"/> Lab Report 13 Endocrine System <input type="checkbox"/> Lab 13 Quiz
	Wednesday 7/20	<input type="checkbox"/> Reproductive System (17) <input type="checkbox"/> IRAT & LearnSmart Ch.17	<input type="checkbox"/> Lab Report 12 Reproduction <input type="checkbox"/> Lab 12 Quiz

6	Monday 7/25	<input type="checkbox"/> Development and Aging (18) <input type="checkbox"/> IRAT & LearnSmart Ch.18 <input type="checkbox"/> Lecture EXAM 4 (Ch.12,13)	<input type="checkbox"/> Lab 15: Human Evolution <input type="checkbox"/> Lab Report 15 <input type="checkbox"/> Lab Exam 3 (LABS 11, 12, 13, 14, 15)
	Tuesday 7/26	<input type="checkbox"/> Ecology and Nature of Ecosystems (24) <input type="checkbox"/> Discussion: Evolution and Adaptation <input type="checkbox"/> IRAT & LearnSmart Ch. 24	<input type="checkbox"/> Case Study Project
	Wednesday 7/27	<input type="checkbox"/> FINAL Lecture EXAM (Ch.14,15,16,17,18)	