**INSTRUCTOR:** Lora Benoit, PhD

Office E-mail: lora.benoit@scccd.edu Office Hours: contact via canvas to schedule individual or group appointments via zoom Website to access Course: <u>https://scccd.instructure.com</u>

**I. COURSE DESCRIPTION:** This course is delivered in a hybrid format where the lecture portion is asynchronous and the laboratory sessions are in-person. Optional zoom meetings will scheduled every week for students that want direct instructor contact outside of lab session. This course provides a basic understanding and working knowledge of the human body with emphasis on the interrelationship between each human system and structure / function of each system, which will be addressed at several different levels (biochemical, cellular, organ level and system level). This course is geared for students pursuing healthcare-related professions.

Activity	Day	Time and Place	
Lecture:	Open	Virtual, Zoom as needed	
Lab (51142) :	Saturday	9:30AM – 12:35 PM, Life Sciences Bldg, Room 11	

# A. Important Dates:

- Jan 10, 2022 (M) First day of Instruction
- Jan 17, 2022 (M) Martin Luther King Jr, Day, no class
- Jan 21, 2022 (F) Last day to drop for a full refund
- Jan 28, 2022 (F) Last day to register with a permission code -Webadvisor
- Jan 30, 2022 (Su) Last day to drop to avoid a "W" –Webadvisor
- Feb 18, 2022 (F) Lincoln Day, no class
- Feb 21, 2022 (M) Last day to drop a Spring 2022 full-term class for full refund
- March 11, 2022 (F) Last day to drop a full-term class and have a W
- April 11-15, 2022 Spring Break, no class
- May 15, 2022 Final Exam (Due 11:59 PM)
- May 20, 2022 End of Semester
- **B. Key Summary:** Biol 22 is a 5-credit course that is canvas-based and requires continued computerbased internet access.
- C. Prerequisites: Biol-20 or BIOL1A and Chem 1A or 3A
- **D. Methods of Instruction:** asynchronous (recorded, on-line) lecture, on-line discussions, laboratory demonstrations and assignments.
- E. Out of Class assignments: Reading Assignments, Writing Assignments: Lab Reports, Term Paper, all due on Sunday at 11:59 PM each week.

# II. COURSE OBJECTIVES, OUTCOMES and OUTLINES:

- A. Course Learning Outcomes: In the process of completing this course, students will be able to:
  - 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.
- B. Course Objectives: Upon completion of this course, students will be able to:
  - 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

# **III. REQUIRED MATERIALS:**

- A. C McGraw Hill Connect. See the McGraw-Hill Connect button in the Canvas Course Menu Bar to purchase access to the lab components. The textbook for this course is Human Physiology 16<sup>th</sup> Edition By Stuart Fox and Krista Rompolski. You do not need to purchase the textbook, the lecture slides are sufficiently informative, alternatively, you can use: https://opentextbc.ca/anatomyandphysiologyopenstax/front-matter/preface/
- A. IT DEVICE: You will need a laptop or tablet to perform the labs and to effectively interface with the Canvas course. You can rent a tablet from the RC library if you need one.

## **IV. APPLICATIONS:**

- A. Canvas: The learning management System (LMS) used for accessing the virtual classroom is Canvas. It is fully functional on many types of smartphones and tablets including Android/iOS device. However, many mobile browsers are not fully supported thus many of the features may not function as expected on your smart phone. Accordingly, you may need a desktop or laptop computer to effectively complete this course. Visit the Mobile section of the Canvas Guides website for more information. You can rent a unit from the RC library to ensure that you have appropriate access to complete this course
- **B. Zoom:** 1-2 hours sessions (more as needed) will be scheduled each week. Review will cover both lecture and lab content. Zoom can be accessed via our Canvas Course and downloaded for free from: https://zoom.us/download

## V. PARTICIPATION & ATTENDANCE:

Participation in the virtual class and in the laboratory activities is critical for maximizing learning and for successful completion of the course.

- Students are expected to spend a minimum of 10-12 h / week in this course
- Students are required to view lecture and lab materials online
- Students are required to finish assignments/ assessments online by the indicated deadline
- Students are expected to be punctual for laboratory session and not leave prematurely
- Excessive (5 or more) lab absences will automatically result in a failing grade
- If you have an emergency please notify me via canvas beforehand

# V. COMMUNICATION:

Communication outside of class will be via CANVAS. Be mindful of language in your communications. Key announcements will be sent frequently via canvas

VI. **SUPPLIES:** Safety equipment and lab supplies will be made available for each laboratory as needed. Each student is responsible for any lost or broken laboratory materials.

# VII. EVALUATION OF STUDENT PROGRESS:

**A. GRADING:** Each student is responsible for reviewing their scores posted to the CANVAS Grade Book for transcription errors. Assessment of student progress in the course is based upon the following scheme:

Component		
5 Lecture Unit Exams (120 pts each)		
19 Lecture Quizzes (20 points each)	380	
14 Phils/ Vernier Lab Reports (10 pts each)	140	
27 VR Lab Assignments (5 pts each)		
16 Lab Quizzes (10 pts each)	160	
Case Report Assignment		
APPROXIMATE TOTAL POINTS (subject to change):		

Letter grades are assigned based on percentages of total points, which can be calculated:

Your total score /1,515 X 100% = % grade

Percentage Range	Letter Grade
90.00 - 100.00%	A
80.00 - 89.99%	В
70.00 – 79.99%	С
60.00 - 69.99%	D
59.99 - 0%	F

\*Please note, to pass this course, a total percentage based on total points of 70% or higher must be achieved and the average for the five (5) lecture exams must be equal to or greater than 50% to pass, regardless of total points. Absence in 5 or more labs will result in a failing grade. You will receive periodic reports from me regarding the collective class progress (% A, % B, % C and class averages) and reminders to consult with me on what you can do to be successful in this course. Please note, I will not respond to any requests to adjust your final letter grade at the end of this course. Rather, I encourage you to consult with me during the semester to receive recommendations on how to improve your grade while there is still an opportunity to do so; waiting until the end of the semester is not appropriate. https://www.umass.edu/aesop/content.php?n=0&i=1

- B. LECTURE QUIZZES: Each Virtual Lecture, 19 in total, consists of a Powerpoint lecture (~65 slides) that has been recorded as a lecture. Normally, my in person lectures are very entertaining...I regret that when I record my lectures, the element of humor is largely lost. Each Lecture has a corresponding open book quiz worth 20 points that is administered through CANVAS. Quizzes are due each Sunday at 11:59 PM and will not be accepted after the deadline has passed. Please note, the quiz is intentional in its design to help you learn key concepts AFTER reviewing the content in the lectures. You should complete the quiz on your own if you want to do well on the Unit Exam.
- **C. LAB ASSIGNMENTS AND QUIZZES:** There are a total of 17 lab sessions that will be held in person. Most lab sessions will include 2 Virtual Labs AND 1 Phils OR 1 Vernier Lab. The Vernier or Phils reports will be uploaded into CANVAS for each lab. Each Lab session has a corresponding open book quiz worth 10 points administered through CANVAS. The lab quizzes should be completed as a team

and I encourage you to do s as a means to actively learn the lab concepts covered on the Unit Exam. Quizzes and lab reports should be completed during the lab but are due each Sunday at 11:59 PM and will not be accepted after the deadline has passed.

- D. UNIT EXAMS: The five (5) Unit Exams will cover both lecture and lab content and must be completed in person during the lab session. Make-up exams will ONLY be offered with prior approval, and not after exam has started.
- E. LABS: Topics, dates, and deadlines are itemized in the schedule below. In person lab attendance is mandatory. To complete the labs in lab session you will need a laptop or tablet and have a McGraw hill Connect Account set up. A temporary account can be obtained through the McGraw Hill Connect Link in the Canvas Course Menu bar.
  - 1. LAB RULES:
    - a. There is NO drinking or eating in the lab.
    - b. You must not be later than 15 minutes for lab or leave before the end of lab.
    - c. You must wear either a K95 or N95 mask in the lab and it must be worn properly.
    - d. You may NOT submit a lab report for labs you do not attend, for labs that you were more than 15 min late or for labs that you left early.
    - e. Make-up lab times are not available
- F. CASE REPORT: At the end of the semester, you will submit a case report that describes a theoretical patient with one of the diseases or disorders listed at <u>https://rarediseases.org/for-patients-and-families/information-resources/rare-disease-information/</u>. 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 instructor for some ideas! To complete this assignment: Apply a standardized case report format as described at <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4175810/</u>, Length: consist of ~ 1,500 words and should include labeled figures. References: 5 or more citations formatted using AMA. References should be obtained from <u>https://pubmed.ncbi.nlm.nih.gov/</u>.Your assignment will be submitted via Turn-it-In and should not have evidence of plagiarism.
- G. EXTRA CREDIT: Each lecture, you may write/draw in your own words a concept summary for a maximum of up to 5 extra points for each assignment based on accuracy and effort level. A description of each extra credit assignment is provided in canvas each week. An image of the assignment can be captured by camera for upload into canvas. The total number of extra credit points that you may therefore earn in this class is 5 X 17 = 85 points (~ 6 % of your total grade). Extra credits are due on Sunday at 11:59 PM, late submissions will not be accepted.

The goal for extra credit is to have you summarize and review key information that are taught in lecture so that you can be better prepared for exams. The extra credit is not mandatory, however, I emphasize the value in doing the extra credit because it will directly improve your exam outcomes and provide some assistance in making sure that you earn the final letter grade you would like to obtain in this course. Importantly and predictably, AT THE END of every semester, there are few students that ask if there is extra credit they can do to pass this course or get a better grade. Yes there is! This is that extra credit! It starts the first week of class and then consistently along the entire duration; the catch is you cannot do the work at the end of the course once time has run out!

VIII. ACADEMIC DISHONESTY: Students at the SCCCD are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that access to education is equitable and that academic outcomes are

honestly obtained. Because cheating, plagiarism, and collusion in dishonest activities that erode the integrity of the college and constitute inequality in the classroom as defined by Federal Law, TITLE V, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form will not be tolerated.

- **A. Plagiarism:** Plagiarism is a form of academic dishonesty that includes the adoption or reproduction of someone else's words or work without due acknowledgment. This can range from paraphrasing someone else's original idea without citation to full-blown cheating.
- **B. Cheating:** Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers in an attempt to gain an unearned academic advantage. Cheating can take the form of crib notes, cell phones, looking over someone's shoulder during an exam, plagiarism, or any forbidden sharing of information between students regarding an exam or exercise. Incidents of cheating may result in a variety of sanctions and penalties, which may range from a failing grade on a particular exam or assignment in question to a failing grade in the course depending upon the severity of the incidents.
- **XI. DROP/ADD POLICY:** The College maintains a policy with regard to incomplete attendance, students enrolled or waitlisted in a course will be dropped for the following reasons:
  - Student does not attend the first lab.
  - Student misses a total of 2 labs in the first two weeks of the course.
  - Student has not accessed the Lecture Content in Canvas up to the drop date

## XII. MISCELLANEOUS:

- **A. Professionalism:** Communication in any form is expected to conform to professional standards. As with a job, you will be expected to perform at a high level consistently throughout the duration of this course. This includes attendance, observing deadlines, and quality of work.
- **B.** Diversity Statement: We must maintain a classroom that is free of discrimination in accordance with Federal and State Laws. If you feel that you or someone in the class is experiencing discrimination based on gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture, please report to me immediately. Please report other forms of discrimination as well.
- XIII. 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 me as soon as possible.

# XIV. HOW TO DO WELL IN THIS COURSE:

- Attitude: You should set your goals to do the very best you can rather than just passing the course. The information that you learn in this course will serve as a foundation for future, more difficult courses. More importantly, working hard in this class will prepare you for an aggressive academic career that will help you towards your long-term goals (\$ vs \$\$\$\$).
- **Focus:** When viewing a lecture or participating in lab, focus on the content, really try to pay attention. 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
- Listen to lecture and take good notes: Organize your notes and re-write if necessary. Print out the lecture slides and take notes on them during the lecture video.

- **Consistent discipline:** You should spend 10-15 hours out-side class each week. There is a lot of memorization and understanding associated with a course like physiology, and both require time.
- Complete all of the assignments and exams on time to avoid losing points.
- **Maintain an active vocabulary list of all terms in bold print.** Know the meaning of each term, and where appropriate, give visual examples to help make associations.
- Attend all lectures and labs, and do as many extra credit assignments as possible.
- Form study pods. Make your own review sheet, if you are part of a study group, have each person make a review sheet for a chapter and then teach each other.
- Contact me as soon as possible if you are struggling with the course so that I can give you directed attention. We will have scheduled ZOOM conferences where I can assist you with more personalized learning.
- We are a team: my goal is for you to be successful in this class, but also, after you leave this class. This course has been designed intentionally to help you be successful in both regards.

Week	Date	Lecture and Chapter (Virtual)	Lab (10 pts) (Sat @ (9:30 am - 12:35 pm)	Assignments/Quizzes/Exams Due Sunday, 11:59 PM in Canvas or MHC
1	1/10- 1/16	<b>CH 1</b> Intro to Physiology	Lab 1: Lab Intro VR1: VR lab Tutorial Vernier: Heart Rate Response	Due Sunday 1/16 @11:59 PM Ch1 Lecture Quiz (Individual): 20 pts Lab1 VR lab reports: 5 pts Lab1 Quiz (Team): 10 pts Upload Vernier report into Canvas:10 pts Ch1 Extra Credit: 5pts
2	1/17- 1/23	CH 2 Chemistry	Lab 2: Chemistry VR1: Antacids VR2: pH Balance	Due Sunday 1/23 @11:59 PM Ch2 Lecture Quiz (Individual): 20 pts Lab2 2 VR lab reports: 10 pts Lab2 Quiz (Team): 10 pts Ch2 Extra Credit: 5pts
3	1/24- 1/30	<b>CH 3</b> Cell Anatomy, Genetic Control <b>CH6</b> Extracellular Environment	Lab 3: Cell Transport VR1: Diffusion Across a Selectively Permeable Membrane VR2: Tonicity in RBCs PhiLs: Varying Extracellular Concentration Unit 1 Exam: 120 pts	Due Sunday 1/30 @11:59 PM Ch3 Lecture Quiz (Individual): 20 pts Ch6 Lecture Quiz (Individual): 20 pts Lab3 2 VR lab reports: 10 pts Lab3 Quiz (Team): 10 pts Ch6 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
4	1/31- 2/6	<b>CH 4</b> Enzymes and Energy	Lab 4: Enzymes VR1: Enzyme Activity VR2: Effects of Concentration PhiLs: Basal metabolic Rate	Due Sunday 2/6 @11:59 PM Ch4 Lecture Quiz (Individual): 20 pts Lab4 2 VR lab reports: 10 pts Lab4 Quiz (Team): 10 pts Ch4 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
5	2/7- 2/13	<b>CH 5</b> Cellular Respiration and Metabolism	Lab 5: Cellular Respiration VR1: Cellular Respiration 1 VR2: Cellular Respiration 2 PhiLs: Cyanide and ETC	Due Sunday 2/13 @11:59 PM Ch5 Lecture Quiz (Individual): 20 pts Lab5 2 VR lab reports: 10 pts Lab5 Quiz (Team): 10 pts Ch5 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts

## XVI. TENTATIVE COURSE SCHEDULE (subject to change without notification):

6	2/14- 2/20	CH 11 Endocrine	Lab 6: Endocrine VR1: Endocrine Thyroid VR2: Effects of Blood Glucose PhiLs: Insulin and Glucose Tolerance Unit 2 Lecture Exam: 120 pts	Due Sunday 2/20 @11:59 PM □ Ch11 Lecture Quiz (Individual): 20 pts □ Lab6 VR lab reports: 10 pts □ Lab6 Quiz (Team): 10 pts □ Ch11 Extra Credit: 5pts □ Upload PhiLs report into Canvas: 10pts
7	2/21- 2/27	<b>CH 7</b> Neurons and Synapses	Lab 7: Nervous Tissue VR1: Nervous Tissue PhiLs: Compound Action Potential	Due Sunday 2/27 @11:59 PM Ch7 Lecture Quiz (Individual): 20 pts Lab7 VR lab report: 5 pts Lab7 Quiz (Team): 10 pts Ch7 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
8	2/28- 3/6	CH 8 Central Nervous System	Lab 8: CNS VR1: Somatic Reflex Arc Vernier Lab: Somatic Reflex Arc	Due Sunday 3/6 @11:59 PM Ch8 Lecture Quiz (Individual): 20 pts Lab8 VR lab report: 5 pts Lab8 Quiz (Team): 10 pts Ch8 Extra Credit: 5pts Upload Vernier report into Canvas: 10pts
9	3/7- 3/13	CH 9 Autonomic Nervous System	Lab 9: ANS VR1: ANS (Pupillary) Reflex Arc PhiLs: Conduction Velocity and temperature	Due Sunday 3/13 @11:59 PM Ch9 Lecture Quiz (Individual): 20 pts Lab9 VR lab report: 5 pts Lab 9 Quiz (Team): 10 pts Ch9 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
10	3/14- 3/20	<b>CH 10</b> Sensory Physiology	Lab 10: Sensory VR1: Accommodation of Lens VR2: Color Vision PhiLs: Refractory Period Unit 3 Lecture Exam: 120 pts	Due Sunday 3/20 @11:59 PM Ch10 Lecture Quiz (Individual): 20 pts Lab10 VR lab reports: 10 pts Lab10 Quiz (Team): 10 pts Ch10 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
11	3/21- 3/27	<b>CH 12</b> Muscle Physiology	Lab 11: Muscles VR1: Electrical Stimulation VR2: Muscle Fatigue Vernier Lab: Muscle Fatigue	Due Sunday 3/27 @11:59 PM Ch12 Lecture Quiz (Individual): 20 pts Lab11 VR lab reports: 10 pts Lab11 Quiz (Team): 10 pts Ch12 Extra Credit: 5pts Upload Vernier report into Canvas: 10pts
12	3/28- 4/3	<b>CH 13</b> Blood, Heart and Circulation	Lab 12: Circulation VR1: Hematocrit VR2: Heart Auscultation Vernier Lab: Heart Rate Exercise	Due Sunday 4/3 @11:59 PM Ch13 Lecture Quiz (Individual): 20 pts Lab12 VR lab reports: 10 pts Lab12 Quiz (Team): 10 pts Ch13 Extra Credit: 5pts Upload Vernier report into Canvas: 10pts
13	4/4- 4/10	CH 14 CO, BF, and BP	Lab 13: Heart VR1: ECG VR2: Blood Pressure Vernier Lab: Analyzing ECG	Due Sunday 4/10 @11:59 PM Ch14 Lecture Quiz (Individual): 20 pts Lab13 VR lab reports: 10 pts Lab13 Quiz (Team): 10 pts Ch14 Extra Credit: 5pts Upload Vernier report into Canvas: 10pts
14	4/11- 4/17	<b>CH16</b> Respiratory System	Lab 14: Respiratory VR1: Mechanism of Breathing VR2: Pulmonary Function Tests Unit 4 Lecture Exam: 120 pts	Due Sunday 4/17 @11:59 PM Ch16 Lecture Quiz (Individual): 20 pts Lab14 VR lab reports: 10 pts Lab14 Quiz (Team): 10 pts Ch16 Extra Credit: 5pts

15	4/18- 4/24	<b>CH 17</b> Renal Physiology <b>CH 20</b> Reproductive System	Lab 15: Renal VR1: Urinalysis PhiLs: Antidiuretic Hormone	Due Sunday 4/24 @11:59 PM Ch17 Lecture Quiz (Individual): 20 pts Ch20 Lecture Quiz (Individual): 20 pts Lab15 VR lab report: 5 pts Lab15 Quiz (Team): 10 pts Ch17 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
16	4/25- 4/31	<b>CH 15</b> Immune System	Lab 16: Immunity VR1: WBC counts PhiLs: Blood Typing	Due Sunday 4/31 @11:59 PM Ch15 Lecture Quiz (Individual): 20 pts Lab16 VR lab report: 5 pts Lab 16 Quiz (Team): 10 pts Ch15 Extra Credit: 5pts Upload PhiLs report into Canvas: 10pts
17	5/2- 5/8	<b>CH 18</b> Digestive System	L <b>ab 17:</b> Digestive System VR1: Digestive Enzymes Unit 5 Lecture Exam: 120 pts	Due Sunday 5/8 @11:59 PM Ch18 Lecture Quiz (Individual): 20 pts Lab17 VR lab report: 5 pts Lab 17 Quiz (Team): 10 pts Ch18 Extra Credit: 5pts Case report: 100 pts
18	5/9- 5/15	Showcase Case Reports in Zoom	NO Labs	

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