



**BIOL 1406.104CL**  
**Biology for Science Majors I**  
**Fall 2021**  
**TTH 1:30pm-4:20pm STEAM 320**

**Instructor Information**

**Professor Ratley**

Email: [cratley@com.edu](mailto:cratley@com.edu)

Phone: 409-933-8333

Student Hours: Monday 11:00am-2:00pm, Tuesday 4:30pm-5:00pm, Wednesday 11:00am-2:00pm, Thursday 4:30pm-5:30pm.

Or by appointment.

Office: STEAM 325-24

**Course Information**

**Required Textbooks and Materials access on day one:**

- Textbooks and/or courseware will be available through VitalSource digitally. The cost of the course materials for this course is \$68.75. The course materials will be available on the first day of class and you will be given the opportunity to opt-out of the e-book prior to the census day of the class. If you choose not to use the course materials, you will be reimbursed after census day of the class. The materials are not refundable after the census day. You will receive an email with more information about the use of the course materials closer to the start of the semester.
- COM BIOL 1406/1408 Lab Manual
  - The lab manual is only available through the COM Bookstore and must be purchased prior to the first lab activity.
- Scantrons (5) – 888E (full page Scantron, available in the COM Bookstore)

**Recommended Texts & Other Readings:**

- Additional documents will be made available on Blackboard.

**Course Description:** Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. Prerequisite: TSIA2 945-990 ELAR/CRC test AND 5 or higher on Essay OR 910-944 on CRC with 5-6 on Diagnostic Test + 5 or higher on Essay, or [IRW 0320](#) with a grade of "C" or better. Successful completion of College Algebra or a higher-level mathematics is recommended.

**Course Requirements:**

**Lecture:** Lectures will be delivered in-person as specified in the Course Schedule below.

**Lab:** See syllabus Course Schedule for on-campus lab dates.

- Closed toe shoes are required for labs. Students will not be permitted to enter the lab room without proper attire.
- Face mask/covering is recommended on campus.

**Online Resources**

- COM Blackboard: <https://de.com.edu/webapps/login/> COM Blackboard allows students to complete coursework and to communicate with each other and the professor. Many class resources will be available through Blackboard. Training is recommended to access Blackboard. For questions regarding course access or training, contact Educational Technology Services (<http://edtech.com.edu/>) at 409-933-8453.
- Mastering Biology: There will be assignments on Mastering Biology for each chapter. Due dates for Mastering Biology assignments are on the Course Schedule. Assignments can be found in the Mastering Biology tab in Blackboard.

**Determination of Course Grade**

**Lecture Grade (500 points):**

1. Lecture exams (400 points) – A total of four lecture exams will be given throughout the semester.
2. Homework (100 points) – Mastering Biology homework assignments will be given throughout the semester.
3. Lecture assignments (100 points) – Various in class assignments will be given throughout the semester. The total number of points earned through lecture assignments will replace the lowest lecture exam grade at the end of the semester.

**Laboratory Grade (350 points):**

1. Lab Daily Grade (150 points) – Each lab will have activities to be completed for a portion of your lab daily grade.
2. Lab Practical (200 points) – Two lab practicals will be given throughout the semester, covering material from previous labs. Each practical is worth 100 points.

**Final Exam (150 points):**

The final exam is comprehensive and will cover ALL of the material presented in lecture throughout the semester.

## Grading Formula:

### Lecture Grade (500 points)

Lecture Exams	400 points
Homework	100 points

### Laboratory Grade (350 points)

Lab Daily Grade	150 points
Lab Practicals	200 Points

### Final Exam (150 points)

Comprehensive Final Exam	150 points
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<b>Total Possible Points</b>	<b>1000 Points</b>
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## Grading Scale:

Final grades assigned for this course will be based on total points earned and are assigned as follows:

Letter Grade	Number of Points
A	900 – 1000
B	800 – 899
C	700 – 799
D	600 – 699
F	0 – 599

**Lab Science Policy:** The grade for this course consists of both a lecture and laboratory component. Students must earn a 70% or better in the laboratory component to successfully pass the course. Earning less than 70% in the laboratory component will result in an F for the course regardless of the lecture grade. Passing the laboratory component and failing the lecture component will not guarantee a passing grade for the course. Deviations from this policy will be at the sole discretion of the instructor.

### Make-Up Policy:

- **Exams:** Should you anticipate an absence on an exam day (lecture or final exam) you must contact your professor by phone, email or in person PRIOR to the absence. Your situation will be evaluated by your professor and at the discretion of your professor you may be allowed to take a make-up exam. Make-up exams will be allowed for a death in the family or a documented student illness. You must provide legitimate proof for your excuse in the case of missing an exam. Any exam that is missed without documentation will have an automatic 10% deducted from the final grade. The make-up exam MUST be taken within one week of the original exam date at the Testing Center. If you anticipate an absence on the day of a lab practical, arrangements must be made prior to the absence to attend a different section of the course that same week to make-up the practical. If you are unable to make up the practical during that week, you will receive a ZERO for the lab practical. *If you arrive late to an exam (lecture, lab or final) and any students have completed the exam, you will not be allowed to take the exam. If no student has finished, you will be able to take the exam, but will not have extra time and must turn in your exam when the students who were on time complete their exams. If you miss an exam and have not made previous arrangements with the instructor, you will receive a grade of "0" (zero) for that exam.*
- **Lecture Assignments:** If you miss class on the day of a lecture assignment, you will receive a ZERO for the missed assignment. If you are absent for an in-class assignment, there are no make-ups, and you will receive a ZERO for the in-class work.
- **Online Assignments:** Ample time is given for each online assignment. Failure to meet these deadlines will result in a ZERO for the assignment and no extra time will be allowed to make-up the assignment. In the event of an internet outage or other internet issue, at the discretion of your professor, your assignment may be reset to allow you to take it again. Contact must be made with your professor within 24 hours of the problem.
- **Labs:** There are NO MAKE-UP LABS. Arriving late to lab will result in not receiving full credit for completing the lab. You are still responsible for the material covered in lab and it is your responsibility to obtain any notes from a classmate.

**Attendance:** Students are expected to attend all on-campus class sessions as listed on the course schedule. These attendance policies apply to both lecture and lab. Attendance will be taken at the beginning of each class. The accumulation of excessive absences may result in automatic withdrawal from the class for a lack of progress. Leaving early from class (without approval from the instructor) will result in an absence for that day. IF you do have to miss class, course materials will be posted on Blackboard, but it is your responsibility to obtain any additional notes from a classmate.

- **Laboratory Attendance Policy:** This laboratory is designed to support the information provided by the lectures and online materials. This lab course is an introduction to fundamental biology, that covers important topics in each lab meeting. Labs are designed to last most of the lab period, therefore expect to be in lab for the full time. Arriving late to lab may result in not receiving full credit for completing the lab. You are responsible for the material covered in lab and it is your responsibility to obtain any notes from a classmate. Lab attendance and participation are required and directly affect your weekly lab grade. Any deviations from this policy are at the sole discretion of the instructor

**Course Communication:** ALL electronic communication with the professor must be through COM email. Due to FERPA restrictions, faculty are unable to share any information about performance in the class through other electronic means.

**Student Learner Outcomes:** These specific outcomes have been chosen to demonstrate that the core competencies are being met during course instruction.

Student Learner Outcomes	Core Objectives	Course Level Assessments
1. Students will be able to describe the characteristics of life.		
2. Students will be able to explain the methods of inquiry used by scientists.		
3. Students will be able to identify the basic requirements of life and the properties of the major molecules needed for life.		
4. Students will be able compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.		
5. Students will be able to describe the structure of cell membranes and the movement of molecules across a membrane.		
6. Students will be able to identify the substrates, products, and important chemical pathways in metabolism.		
7. Students will be able to identify the principles of inheritance and solve classical genetics problems.		
8. Students will be able to describe the unity and diversity of life and the evidence for evolution through natural selection.		
9. Students will be able to apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.	Empirical and Quantitative Skills	Lab Activities
10. Students will demonstrate their ability to use critical thinking and scientific problem-solving to make informed decisions in the laboratory.	Critical Thinking	Lab Activities
11. Students will demonstrate their ability to communicate effectively the results of scientific investigations.	Communication Skills (Written)	Lab Activities
12. Students will be able to identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.		
13. Students will demonstrate the ability to work effectively with others to support and accomplish a shared goal while recognizing and respecting different viewpoints.	Teamwork	Lab Activities

**Academic Dishonesty:** Disciplinary actions will be taken for students that cheat on exams, submit plagiarized work (see below), or are involved in collusion (helping others cheat or plagiarize) as defined in the Student Handbook under the heading, “Discipline and Penalties.” **The maximum penalty imposed for violations will be an F in the course.** The student will also be referred to the Dean of Students for further disciplinary action. Please read through the “Standards of Student Conduct” in the Student Handbook for a more complete discussion of these issues and your rights and responsibilities.

**Plagiarism:** Plagiarism is using someone else’s words or ideas and claiming them as your own. Plagiarism is a very serious offense. Plagiarism includes paraphrasing someone else’s words without giving proper citation, copying directly from a website and pasting it into your paper, using someone else’s words without quotation marks. Any assignment containing any plagiarized material will receive a **grade of zero** and the student will be referred to the Office of Student Conduct for the appropriate disciplinary action. In addition, I am providing you with a link to a video on YouTube that correctly defines plagiarism, how to make proper citations and describes the proper use of paraphrasing. I would strongly urge you to look this over early in the course. Plagiarism video: <https://youtu.be/Fw6NxvwP41U>

**Student Concerns:** If a student has any questions or concerns about any aspect of the course, the student should contact the professor using the contact information previously provided. If, after discussing the concern with the professor, a student continues to have questions, the student may contact Sheena Abernathy, Chair of the Science Department at 409-933-8330 or [sabernathy@com.edu](mailto:sabernathy@com.edu).

## Tentative Course Schedule:

		<b>Topic(s)</b>	<b>Reading</b>	<b>Course Assignment(s)</b>
1	8/24	Intro to Course Evolution, Themes of Biology, and Scientific Inquiry	Read Syllabus Chapter 1	Print Student Info Sheet and Lab Safety (Content tab of Blackboard)
	8/26	Lab Safety		
2	8/31	Chemical Context of Life; Water and Life	Chapters 2 & 3	
	9/2	Lab 1: Scientific Method		
3	9/7	Carbon and the Molecular Diversity of Life The Structure and Function of Biological Molecules	Chapters 4 & 5	<b>Mastering Biology Ch 1-5 due 9/12 at 11:59pm</b>
	9/9	Lab 2: pH		
4	9/14	A Tour of the Cell	Chapter 6	<b>Lecture Exam 1: Ch 1-5</b>
	9/16	Lab 3: Biomolecules		
5	9/21	Viruses	Chapter 19	
	9/23	Lab 4: Microscopy		
6	9/28	Cell Membranes; Cell Communication	Chapters 7 & 11	<b>Mastering Biology Ch 6, 7, 11, 19 due 10/3 at 11:59pm</b>
	9/30	Lab 5: Cells		
7	10/5	An Introduction to Metabolism	Chapter 8	<b>Lecture Exam 2: Ch 6, 7, 11, 19</b>
	10/7	Lab 6: Cell Membranes		
8	10/12	Cellular Respiration and Fermentation	Chapter 9	
	10/14	<b>Lab Practical 1</b>		<b>Lab Practical 1: Labs 1-6</b>
9	10/19	Photosynthesis	Chapter 10	<b>Mastering Biology Ch 8-10 due 10/24 at 11:59pm</b>
	10/21	Lab 7: Enzymes		
10	10/26	The Molecular Basis of Inheritance	Chapter 16	<b>Lecture Exam 3: Ch 8-10</b>
	10/28	Lab 8: Respiration/Fermentation		
11	11/2	The Cell Cycle; Meiosis and Sexual Life Cycles	Chapters 12 & 13	
	11/4	Lab 9: Photosynthesis		
12	11/9	Mendel and the Gene; Chromosomal Basis of Inheritance	Chapters 14 & 15	<b>Mastering Biology Ch 12-16 due 11/14 at 11:59pm</b>
	11/11	Lab 10: Cell Division		
13	11/16	Gene Expression & Regulation of Gene Expression	Chapters 17 & 18	<b>Lecture Exam 4: Ch 12-16</b>
	11/18	Lab 11: Genetics		<b>W-day November 19<sup>th</sup></b>
14	11/23	Lab 12: DNA and Biotechnology		
	11/25	<b>Thanksgiving Campus Closed 11/25-11/28</b>		
15	11/30	DNA Tools and Biotechnology; Evolution	Chapters 20 & 22	<b>Mastering Biology Ch 17, 18, 20, 22 due 12/5 at 11:59pm</b>
	12/2	<b>Lab Practical 2</b>		<b>Lab Practical 2: Labs 7-12</b>
16	12/7	Review		
	12/9	<b>Final Exam</b>		<b>Final Exam (Cumulative) Exams 1-4 and Chapters 17, 18, 20, 22</b>

## Institutional Policies and Guidelines

**Grade Appeal Process:** Concerns about the accuracy of grades should first be discussed with the professor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook. <https://www.com.edu/student-services/student-handbook.html> *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the professor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.*

**Academic Success & Support Services:** College of the Mainland is committed to providing students the necessary support and tools for success in their college career. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor. <https://www.com.edu/student-services>

**ADA Statement:** Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center. <https://www.com.edu/counseling/disability-services>

**Counseling Statement:** Any student that needs counseling services should contact Holly Bankston in the Student Success Center at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). Counseling services are available on campus in the student center for free and students can also email [counseling@com.edu](mailto:counseling@com.edu) to set up an appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis. <https://www.com.edu/counseling>

**Textbook Purchasing Statement:** A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**Withdrawal:** Students may withdraw from the course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the professor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last day to withdraw is November 19, 2021.

**F<sub>N</sub> Grading:** The F<sub>N</sub> grade is issued in cases of *failure due to a lack of attendance*, as determined by the professor. The F<sub>N</sub> grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the F<sub>N</sub> grade is at the discretion of the professor.

**Early Alert Program:** The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. Professors have been asked to refer a student to the program throughout the semester if the student is having difficulty completing assignments or has poor attendance. If a student is referred to the Early Alert Program, the student will be contacted by someone in the Student Success Center who will schedule a meeting with the student to see what assistance the college can offer in order for the student to meet their academic goals.

**COVID-19 Statement:** All students, faculty and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at [www.com.edu/coronavirus](http://www.com.edu/coronavirus). In compliance with [Governor Abbott's May 18 Executive Order](#), face coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face coverings. We continue to encourage all members of the COM community to distance when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit [com.edu/coronavirus](http://com.edu/coronavirus) for future updates.

## Course Policies & Guidelines

**Classroom Conduct Policy:** College of the Mainland requires that students enrolled at COM be familiar with the Standards of Student Conduct, which can be found in the on-line Student Handbook. <https://www.com.edu/student-services/student-handbook.html>. Students should act in a professional manner at all times. Disruptive students will be held accountable according to college policy. Any violations of the Code of Conduct will result in a referral to the Office for Student Conduct and may result in dismissal from the course.

### Behavioral Expectations

Each student is entitled to an environment conducive to learning. Any situation that prevents students from learning or the professor from teaching is considered to be a disruption. Please be respectful of your fellow students and the professor by adhering to the following:

1. For on campus instruction: put away all electronics. Certain devices can be used to view content on the internet; however, this is at the discretion of the professor.
2. During online exams, no study materials or additional devices will be allowed. If a student utilizes outside materials during an exam, the student will earn a zero for that exam.
3. Due to safety reasons, friends, spouses, and children are not allowed in lecture rooms or lab rooms.
4. Students can be removed from the class if they are exhibiting disruptive behavior as deemed by the professor. Repeated incidents may result in automatic withdrawal from the class. Students who display this conduct will be removed from the class and required to meet with Dr. Kimbark, Dean of Students, before being allowed to return to class if the professor allows it.

**Course Evaluations:** Course evaluations for students to complete will be open towards the end of the semester. Be sure to take this opportunity to rate the course. The professor is not able to view student evaluations until after the semester has ended and grades have been entered. Student evaluations matter and are reviewed by the professor to continuously improve this course.