



BIOL 1406.022H – General Biology I (Honors)

Course Syllabus: Fall 2023

Class Meets: M-W 1:30-2:50pm; Room MS 104

Lab Meets: W 3:00-5:50pm; Room MS 127

“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”

Professor: Chris T. McAllister, Ph.D. (Univ. North Texas, 1989)
Office: UHS 163
Office Phone: 903.434-8286
Email: cmcallister@ntcc.edu

Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday
	9:30-11:30am; 3:00-4:00pm	8:30-9:30am; 1:30-3:30pm	8:30-11:30am	8:30-9:30am	None

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Disclaimer: The instructor reserves the right to alter this syllabus as necessary with full disclosure to the student. This syllabus and schedule is articulated as an expectation of class topics, learning activities, and expected student learning. However, the instructor reserves the right to make changes in this schedule at any time that, within his professional judgment, would result in enhanced or more effective learning on the part of the students. These modifications will not substantially change the intent or objectives of this course and will be done within the policies and procedures of NTCC. *This may include the test schedule or topics of discussion in either lecture or laboratory. Should that happen, the student will be notified.*

Course Description:

4 credit hours. Lecture/Lab: 3 hours of lecture and 3 hours of lab each week. Honors section.

A study of the biological sciences for students who plan to major or minor in biology or pre-professional studies or to fulfill the laboratory science requirement of other majors. This course utilizes an integrated approach and emphasizes the molecular basis of life, cell biology, and bioenergetics. Other topics for discussion include Mendelian and molecular genetics.

Note: Additional course fee(s) required.

Prerequisite(s): None

Student Learning Outcomes:

1. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking, scientific problem-solving, and teamwork to make informed decisions in the laboratory.
3. Communicate effectively the results of scientific investigations.
4. Describe the characteristics of life.
5. Explain the methods of inquiry used by scientist.
6. Identify the basic requirements of life and the properties of the major molecules needed for life.
7. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
8. Describe the structure of cell membranes and the movement of molecules across a membrane.
9. Identify the substrates, products, and important chemical pathways in metabolism.
10. Identify the principles of inheritance and solve classical genetic problems.
11. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
12. Describe the unity and diversity of life and the evidence for evolution through natural selection.

Required Instructional Lecture Materials: Mason, Losos, & Duncan: Raven, Johnson, Mason, Losos, & Duncan, 2023: Biology 13th Ed with Connect Inclusive Access

Publisher: McGraw Hill **ISBN Number:** 978-1-264-09785-2 (Bound Edition)
978-1-264-40889-4 (Loose-leaf edition)

Required Instructional Lab Materials: Hearron & Ward: Exploring Biology 1 Lab Manual

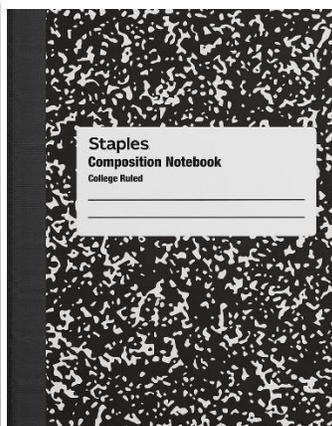
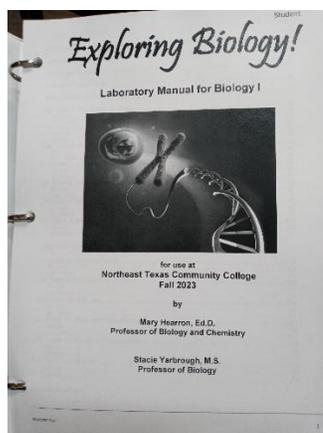
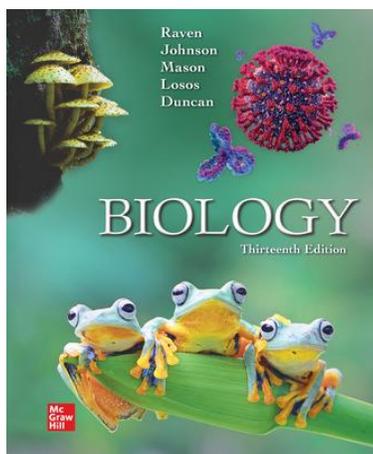
Publisher: NTCC **ISBN Number:** Available through NTCC Bookstore

Required Lab journal: This is a bound composition notebook (minimum of 50 sheets with 5 x 5 quads), available at most bookstores or Wallyworld, Target, etc.

Optional Instructional Materials: Proper Scantrons are required for all major and weekly exams.

Minimum Technology Requirements: Internet Access; Microsoft Office or Google Suite.

Required Computer Literacy Skills: Blackboard Ultra; Microsoft Office or Google Suite.



Lectures & Discussions*, **

Orientation/Syllabus (Aug. 28)

CH 1 - The Science of Biology (Aug. 28-30)

LABOR DAY HOLIDAY-No Monday classes (Sept. 4)

CH 2 – The Nature of Molecules and the Properties of Water (Sept. 6, 11)

CH 3 – The Chemical Building Blocks of Life (Sept. 13, 18)

EXAM 1 (CH 1-3)-Sept. 20

CH 4 – Cell Structure (Sept. 25-27)

CH 5 – Membranes (Diffusion/Osmosis) (Oct. 2-4)

EXAM 2 (CH 4-5)-Oct. 9

CH 6 – Energy and Metabolism (Enzymes) (Oct. 11)

CH 7 – How Cells Harvest Energy (Respiration) (Oct. 16, 18)

CH 8 – Photosynthesis (Oct. 23, 25)

EXAM 3 (CH 6-8)-Oct. 30

CH 10 – How Cells Divide (Cell Cycle and Mitosis) (Nov. 1)

CH 11 – Sexual Reproduction and Meiosis (Nov. 6)

CH 12 – Patterns of Inheritance (Mendelian Genetics) (Nov. 8)

EXAM 4 (CH 10-12)-Nov. 13

CH 13 – Chromosome Genetics (Nov. 15)

****Thanksgiving Break-No classes, Wednesday – Friday, November 22-24****

CH 14 – DNA: The Genetic Material (Nov. 27, 29)

CH 15 – Genes and How They Work (Transcription and Translation) (TBA)

EXAM 5 (CH 13-15)-Dec. 4

FINAL EXAM-Monday, Dec. 13 at 2pm

LAB SCHEDULE:

Lab Topic 1 /Week 1– Scientific Inquiry & Metric System (Aug. 30)

Lab Topic 2/Week 2 Biochemistry (Sept. 6)

Lab Topic 3/Week 3 Microscopy (Sept. 13)

Lab Topic 4/Week 4 Cytology & Cell Membranes (Sept. 20)

Lab Topic 5/Week 5 Passive Transport (Sept. 27)

Lab Topic 6/Week 6 Enzymes (Oct. 4)

Lab Topic 7/Week 7 Respiration (Oct. 11)

*******Oct. 18-LAB PRACTICAL 1 (Lab Topics 1-7) – 100 points*******

Lab Topic 8/Week 9 Photosynthesis (Oct. 25)

Lab Topic 9/Week 10 Cell Division (Nov. 1)

Lab Topic 10/11/ Week 11– Genetics, DNA & Biotechnology (Nov. 8)

Lab Topic 12/Week 12 pGlo (Nov. 15)

****Thanksgiving Break-No Lab, Wednesday, November 22***

Lab Topic 12/Week 14 CRISPR (Nov. 29)

*******Week 15: Dec. 6-LAB PRACTICAL 2 (Lab Topics 8-13) – 100 points*******

Evaluation/Grading Policy (~1,300 – 1,400 points):

LECTURE: ~ 750-850 pts (58%)

100 pts – Connect Online

100 pts – *Optional Report*

500 pts – 5 Lecture Exams

50 pts – weekly lecture quizzes

100 pts – Lecture FINAL EXAM

LABORATORY: 550 pts (42%)

150 pts- Lab Journal

100 pts - 1 Scientific Paper Based on Special Topic (TBA)

100 pts – Group Powerpoint presentation/Poster of Scientific Paper

200 pts - 2 Lab Practicals

***Letter Grade Assignment:**

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = <59%

***Final Grade will be rounded up if attendance, punctuality, and feedback/discussions were made.**

Grade is calculated based on these %

Lecture = 20%

Exams = 50%

Lab = 25%

Quizzes = 5%

An Important Note to Honors Students:

All students enrolled in this class who are Honors students must pass this course with at least a “B” in order to gain Honors credit for the course. If you have any questions, please direct them to the Director of Honors Northeast, Dr. Andrew Yox at ayox@ntcc.edu or 903/291-7887.

Lecture Assignments:

Weekly online tutorials and quizzes will be assigned to check your understanding of classroom discussions and reading assignments. These are completed online in Connect. You will need to access Connect the first week of the semester and register your keycode to complete your assignments. Each assignment has a posted due date for completion. Due dates in Connect are firm – no makeups for missed homework.

Lecture Material:

Each week, lectures will be posted on Bb from Powerpoint presentations by your professor. Either print these out and bring to class or have them available on your laptop.

Tests/Exams

The lecture exams may include both objective questions (multiple choice, matching, etc.) over classroom discussions, notes, text materials, and readings as well as descriptive questions requiring detailed explanations over broad themes. Success on the exams is a function of anxiety regulation, test prep, study strategies, and studying for retention. Retention requires repetitions, which requires time! Scantrons will be required for the major exams. **Tests will not be made up for any reason without prior communication to your instructor.** Late arrivals must complete exam by the end of class time.

Lecture Quizzes (and Bonus pts):

Weekly lecture quizzes will be given during the first 10 minutes of lecture to check your understanding of the previous week’s lecture material. Each quiz will be worth a total of 12 pts (2 pts on each is always bonus and fill in the blank, other 10 questions are multiple-choice). Every odd quiz (1, 3, 5, 7...) is totally bonus, every even quiz (2, 4, 6, 8....) counts 10 pts toward your grade. You must be in your seat and ready to take each quiz at the beginning of lecture. Any student who comes in late after the quiz has begun will not be able to take the quiz. So, punctuality is very important!

Lab Reports:

The lab reports from the lab manual are to be completed **during lab**. I do not take up and grade these reports as these are designed to help you prepare for the Lab Practicals.

Lab Practicals:

Two lab practicals will be given during the semester. It is a live exam with stations that students will rotate through and answer open ended questions associated with visuals from lab. Visuals may include images, specimens, lab equipment, data tables, graphs, experimental results, etc.

Lab Journal:

It is a requirement of this course to keep a General Biology Laboratory Notebook. The notebook will be graded by Dr. Mac at 2 different (announced) times during the semester. The notebook should be a **bound** composition notebook (minimum of 50 sheets with 5 x 5 quads), available at most bookstores or Wallyworld. It is worth a total of 150 pts. More later on this journal.

Required Scientific Paper:

Honor students will write a Scientific Paper or make a Poster over the major assignment (topic provided by professor). This paper will be in scientific format with an abstract, introduction, hypothesis, methods, results, and conclusion sections. A rough draft will be submitted the week prior to the due date. The final draft is due prior to lab on the due date. For more detailed information, please see: <https://frontlinegenomics.com/everything-you-need-and-want-to-know-about-tardigrades/>

Optional Class Report:

You will provide an “optional” special written report in this class on topics provided by the instructor. First come, first serve. This is not a requirement, entirely optional!

Final Lecture Exam

A final exam will be given during the time set forth by the college Final Exam Schedule. The final exam will consist of 100 objective questions (multiple choice, matching, etc.) from chapters chosen by your professor TBA. A scantron is required for the final exam.

Late Work: I do not accept late work. Deadlines are meant to be met when they are set.

Communications: NTCC email is the official form of communication used by the college. Please utilize my email for communication purposes. I will get back to you within 24 hrs of your email. I do not typically return emails between the hours of 9 pm – 6 am. I have office hours every day on campus – don’t hesitate to contact me during my office hrs. Email me at: cmcallister@ntcc.edu

Institutional/Course Policy:

Attendance (if needed) via TEAMS is mandatory and will affect your grade as in class quizzes will count as zeros if you are absent for any reason.

Withdrawal Date: The last day to drop the course with a grade of “W” is **Tuesday, November 21**. If circumstances require you to withdraw from this course, you must do so by that date. It is the **student’s responsibility** to initiate the withdrawal with the registrar’s office. **Failure to officially withdraw will result in your receiving a grade of F.**

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC’s website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely,

Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Cell Phones and Unapproved Electronic Devices: Absolutely NO cell phones, video cameras, tape recorders, beepers, laptops, MP3 players, I-pods, or other unapproved electronic devices are to be used during class/lab. You may turn your cell phone to a silent buzz (but not during any exam) and excuse yourself from the classroom/lab if you absolutely must answer the call (emergencies only!). Examples would include sick children and/or seniors or other family members who need your immediate help. It is wise to leave your phone in your car on test days!! Students found using their cell phones or other devices during class will **lose 10 pts** from their total class score for each offense. **THIS INCLUDES TEXTING!!**
Please make it a habit to turn cell phones OFF or on vibrate before class begins each day. Phones are never to be on during any sort of examination. If your phone rings during any exam, you must immediately turn in your exam and receive the grade you earned on all questions whether or not you completed that exam (probably an "F"). No one to blame but yourself!

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects. Dr. Mac adds the following:

Acts violating the expected academic integrity include:

1. Cheating on examinations, quizzes, or other written work;
2. Giving assistance to or receiving assistance from another during an examination or quiz;
3. Plagiarism, defined as:
 - a) The use of another's published work wholly or in part without proper recognition or documentation
 - b) The use of another student's work as one's own
 - c) The purchase, use, or provision of an already prepared paper
4. Obtaining or attempting to obtain copies of un-circulated examinations or examination questions.
5. Falsifying any academic record.
6. Using Artificial Intelligence to conduct any of the above referenced activities.

Artificial Intelligence (AI) Course Statement:

Writing, analytical, and critical thinking skills are an important part of the learning outcomes of this course; therefore, all writing assignments should be prepared by the student. More importantly, developing strong competencies in this area will prepare you for a competitive workplace. Therefore,

the use of any AI-generated submissions are not permitted in this class and will be treated as plagiarism. Taking credit for words or ideas that are not your own is plagiarism. The temptation to plagiarize may be heightened with generative AI (*such as ChatGPT, ChatGPT4, DALL-E, etc.*) because it seems like a victimless crime, but it IS NOT! Students at NTCC are expected to make responsible and ethical academic decisions. Ethics obviously matters and plagiarism will be treated as a serious NTCC offense. In the event of use by any student of AI tools as defined herein, it will result in a zero for that assignment.

AI Enforcement:

I take academic integrity very seriously, and I will address any violations of this policy and follow NTCC's disciplinary policies and procedures. If you have any questions about the information, policies, and guidelines in this statement, I urge you to contact me to discuss them. This policy goes into effect on the first day of this course, [28 August, 2023]. I trust that each of you will make ethical decisions about the use of AI tools in this course and I'm looking forward to a rewarding experience for everyone, including myself.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Tentative Course Timeline:

(*note* instructor reserves the right to make adjustments to this timeline at any point in the term):

**Biology 1406
Fall 2023
Dr. Mac**

Wk	MON	WED	LABS-Wed	Lecture TESTS cover
1 Aug. 28- 30	Orientation and Syllabus CH 1 The Science of Biology	CH 1 (Con't)	Lab Safety Introduction to Scientific Method Lab Topic 1 Metric System	
2 Sep. 6	Labor Day Holiday- No Monday class	CH 2 Nature of Molecules/Prop of H ₂ O	Lab Topic 2 Biochemistry	
3 Sep. 11- 13	CH 2 (Con't)	CH 3 Chemical Building Blocks of Life	Lab Topic 3 Microscopy	
4 Sep. 18- 20	CH 3 (con't)	Sept. 20 Exam 1	Lab Topic 4 Cytology & Cell Membranes	EXAM 1 (CH 1-3)
5 Sep. 25- 27	CH 4 Cell Structure	CH 4 (Con't)	Lab Topic 5 Passive Transport	
6 Oct. 2-4	CH 5 Membranes	CH 5 (Con't)	Lab Topic 6 Enzymes	
7 Oct. 9-11	Oct. 9 Exam 2	CH 6 Metabolism/Enzyme s	Lab Topic 7 Respiration	EXAM 2 (CH 4-5)
8 Oct. 16- 18	CH 7 Respiration	CH 7 (Con't)	Oct. 18 Lab Practical I	
9 Oct. 23- 25	CH 8 Photosynthesis	CH 8 (Con't)	Lab Topic 8 Photosynthesis	
10 Oct. 30, Nov. 1	Oct. 30 Exam 3	CH 10 Mitosis	Lab Topic 9 Cell Division	EXAM 3 (CH 6-8)
11 Nov. 6-8	CH 10 (Con't)	CH 11 Meiosis	Lab Topic 10 Genetics	
12 Nov. 13- 15	CH 12 Patterns of Inheritance	Nov. 13 Exam 4	Lab Topic 11 DNA & Biotechnology	EXAM 4 (CH 10-12)
13	CH 13	Thanksgiving	Lab Topic 12	

Nov. 20- 22	Chromosomal Basis of Inheritance & Human Genetics	Holiday No Wed. class or Lab	Transformation	
14 Nov. 27- 29	CH 14 DNA: The Genetic Material	CH 14 (con't)	Lab Topic 13 CRISPR	
15 Dec. 4-6	CH 15 Genes & How They Work	Dec. 4 Exam 5	Dec. 6 Lab Practical II	EXAM 5 (CH 13-15)
16	FINAL EXAM-TBA Dec. 13 @2pm			