



# BIOL 1001 General Biology I Lab

Course Syllabus: Fall 2017

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”



## Professor Jim Ward

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	9:00-9:30 11:00-12:30 1:00-1:30	1:00-1:30	9:00-9:30 11:00-12:30 1:00-1:30 4:30-7:30	12:30-2:00		

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.*

**Catalog Course Description (include prerequisites):** This course is a study of the biological sciences for students who plan to major in biology or pre-professional studies or to fulfill the laboratory science requirement of other majors. The course utilizes an integrated approach and emphasizes the molecular basis of life, cellular organization, bioenergetics, Mendelian and molecular genetics.

3 Hours of Lecture plus 3 hours of Lab course work per week. Lecture meets 2X/week; Lab meets 1X/week.

### Required Textbook

Raven: Foundations of Life Volume 1 with Text with Connect

ISBN 9781308806068

### Required Lab Manual

NTCC General Biology I Lab – Hearron

NTCC Bookstore

### Recommended Readings

Chapters 1-15 in Lecture Textbook; Lab Units 1-14 in Lab Manual

### Other Course Requirements

Notebook along with pens/pencils for note taking, diagram labeling, data collection, and graphing.

### 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 properties of substances 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.

## Lab Topics

- Exercise 1 – The Microscope
- Exercise 2 – Cell Chemistry
- Exercise 3 – The Cell
- Exercise 4 – Diffusion and Osmosis
- Exercise 5 – Cell Membranes
- Exercise 6 – Enzymes and Fermentation
- Exercise 7 – Anaerobic and Aerobic Respiration

### LAB PRACTICAL 1 (Exercises 1-7)

- Exercise 8 – Photosynthesis
- Exercise 9 – Cells Division (Mitosis and Meiosis)
- Exercise 10 – Mendelian Genetics
- Exercise 11 – Genetics II
- Exercise 12 – Bacterial Transformation
- Exercise 13 – Molecular Genetics and DNA Fingerprinting
- Exercise 14 – Chromosomal Genetics and Bioethics

### LAB PRACTICAL 2 (Exercises 8-14)

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#### Evaluation/Grading Policy:

LECTURE: 70%

**LABORATORY: 30%**

**20% - Quizzes**

**10% - Lab Reports**

**10% - Scientific Paper**

**60% - 2-Lab Practicals**

#### Grade Assignment:

**A = 90-100%**

**B = 80-89%**

**C = 70-79%**

**D = 60-69%**

**F = 0-59%**

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#### Lab Quizzes:

Weekly lab quizzes will be given the first 10 minutes of lab to check your understanding of laboratory discussions, experiments, and reading assignments. Quizzes will consist of 7 questions from the previous lab week based on terminology, experimental procedures, and experimental results. Quizzes will also consist of 3 questions from the current week topic. Students should read ahead and complete the PreLab Quiz to be prepared for lab as well as these final 3 questions. Quizzes will not be made up for late arrivals.

#### Lab Reports:

The lab reports from the lab manual are to be completed during lab and submitted at the end of the lab period. These, along with the quizzes, are designed to help you prepare for the Lab Practicals. In addition to the lab reports, students will write a Scientific Paper over one lab experiment. This paper will be in scientific format and is due prior to lab on the due date.

#### Lab Practicals:

A lab practical will be given twice 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 practicals will start 30 minutes after scheduled lab time.

#### Withdraw Date

The last day to withdraw from the course in **Tuesday, November 21<sup>st</sup>**. Discontinuing with the course without officially dropping the course by this date will result in a grade earned, in most instances an "F". A stop in attendance does not equate to dropping the course.

## **Student Responsibilities & Expectations**

Northeast Texas Community College is a “community of scholars”. As scholars, you are expected to be respectful and courteous to your peers and instructors in both lecture and lab. Scholars are expected to be on time and remain for the duration of class. Scholars are expected to embrace anxiety and manage stress to be productive and responsible at all times. Scholars understand that they, and others around them, are pursuing very important goals in their life at this time and are proactive, not reactive, in regards to the assignments and grades to ensure they are on track at all times to meet their goals.

As scholars in class, it is critical that you engage yourself in the lecture material and discussions as well as the laboratory exercises. The ability to listen carefully, record information in note form, and follow directions are important skill sets required for success in higher education. Practicing these in class prepares you to study at home where you will take the important steps toward learning the course material. This leads to the ability to retain information and describe processes on major exams. Research shows writing by hand is far more effective in obtaining long term retention than is typing! Electronic devices are allowed on non-testing days as long as they do not prevent engagement. No devices or picture taking is allowed on testing days.

As scholars, your instructor is a valuable resource for your success. I will teach to the best of my ability and provide you with a variety learning formats to help you in your effort to be successful in Biology. I deeply care about you and your academic learning experiences here at Northeast Texas. Office Hours are designed for scholars to have an opportunity to get individual questions answered and engage in learning with the professor outside of class times. Take advantage of office hours as your ultimate success in the course depends solely on YOU!

## **NTCC Academic Honesty Statement and Academic Ethics:**

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook." The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. See Student Handbook.

## **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 Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. For more information and to obtain a copy of the Request for Accommodations, please refer to the [NTCC website - Special Populations](#).

## **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.