



**Course Title: General Biology**

**Course #: BIOL-1110 C**

**Credit Hours: 4**

**Semester: Spring 2022**

**Cap:**

Instructor: Franklin Mvo Maloba

**E-mail:** [fmaloba@navajotech.edu](mailto:fmaloba@navajotech.edu)

**Office:**

**Office Phone:**

Office Hours: Monday & Wednesday: 9:00-10:20 am.

**Class Location:** Lab/ Face-to-Face/Online (Hybrid).

**Class/Lab Meeting Times:** MW: 9:30 am – 10:50 am Lab: T 9.00 AM - 10.20 AM

**Required Materials:**

**Textbook:** Johnson, G.B. The Living World. 8<sup>th</sup> Edition, McGraw Hill Education, NY (2015). ISBN: 978-0-07802421-8 (Hard Copy).

**Laboratory Manual:** Mader, S.S. Concepts of Biology. 3<sup>rd</sup> Edition, McGraw Hill Education, NY (2014). ISBN: 978-0-07-751158-6.

**Tools:** Pencils for Lab Exercises.

**Lab Fee:** \$100.00

**Tools:** Every student is required to have a laptop.

***The General Biology (BIO1110-1C) course will be offered as a hybrid class. Moodle platform will be used. Lectures will hold on Mondays and Wednesdays, and labs on Tuesday. Monday Lectures will be in Person. And Wednesday Lectures by Moodle/zoom. All labs, Quizzes and Finals. shall be in Person.***

**Mission, Vision, and Philosophy**

**Mission:** Navajo Technical University honors Diné culture and language, while educating for the future.

**Vision:** Navajo Technical University provides an excellent educational experience in a supportive, culturally diverse environment, enabling all community members to grow intellectually, culturally, and economically.

**Philosophy:** Through the teachings of Nitsáhákees (thinking), Nahátá (planning), Íina (implementing), and Siihasin (reflection), students acquire quality education in diverse fields, while preserving cultural values and gaining economic opportunities.

**Course Description:** This is a four (4) credit hour course designed to provide basic information in biology for non-Biology majors. The course teaches biology principles that are valuable to non-scientists in the modern world. Topics include basic facts of life and genetic basis of behavior of living organisms, and their interactions with the environment and ecosystem. Health perspectives of the various concepts as they apply to humans will be discussed.

## Course Objectives

After successfully completing this course, students should be able to:

1. Explain the biological principles that are essential to life.
2. Recall some of the interactions that occur at the molecular level to determine and modify gross organismal behavior.
3. Identify the role of humans as organisms on earth relative to the ecosystem.
4. Acquire critical and analytical thinking skills.

COURSE OUTCOMES	COURSE MEASUREMENTS
Applying scientific methods to evaluate claims and to make informed biological decisions that impact life.	Knowledge of scientific methods will be measured by class test and quizzes, and by laboratory exercises.
Summarize the diversity and hierarchical organization of life.	Knowledge of life's kingdoms and hierarchical complexities will be evaluated by quizzes, essays, oral presentations, homework and exams.
Identify the significance of nonlife or chemical substances in various life forms.	Grasp of the usefulness of chemical substances in determining the properties of life will be analyzed by essays, oral presentation, and observations of student's performance at tasks, quizzes, homework and exams.
Recognize that organisms are composed of one or more cells, within which the process of life occurs.	Knowledge of the three principles derived from the cell theory will be tested by examinations, quizzes, poster and/ or oral presentations, homework assignments, lab writeups, research papers, portfolios, and small group exercises.

Week	Date	Chapters	Assignment	Quiz
1	01/18 - 01/21	0: Introduction: Syllabus, Handouts, Laboratory safety-scientific method/ Lab ½ 1: The science of biology	Read Pp. 1-14 / 15-33	
2	01/24 - 01/28	2: The Chemistry of Life / Labs 2 & 3. 3: Molecules of life. <b>Assignment</b>	Read Pp. 35-49/ 51-69	
	<b>01/31</b>	<b>Quiz on Chapters 1- 3</b>	<b>Quiz</b>	<b>Chpt. 1-3</b>
3	01/31 - 02/04	4: Cells /Labs 4 & 5. 5: Energy of life	Read pp. 71-105/ 107-117	
4	02/07 - 02/11	6: Photosynthesis: Acquiring energy from the sun./Lab 6 & 7 7: How cells harvest energy from food.	Read pp. 119-135/ 137-153	
	<b>02/14</b>	<b>Assignment from Chapters 4-7</b>		<b>Chpt. 4-7</b>
5	02/14 - 02/18	8:Mitosis/Labs 8 & 9 9: Meiosis	Read pp. 155-171/ 173-185	
	<b>02/21</b>	<b>HOLIDAY- President's day</b>		
6	02/21 - 02/25	10: Foundations of genetics/ Labs 10 & 11 11: DNA: The genetic material	Read pp. 188-219/ 222-237	

7	02/28 -03/04	12: How genes work/ Labs 12 & 13 13: Genomics and biotechnology	Read pp. 239-257/ 259-283	
	<b>03/07 – 03/11</b>	<b>Midterm Exam Covering Chapters 7 -11</b>	<b>Midterm</b>	<b>Chpt. 8-11</b>
		<b>Spring Break</b>		
8	03/14 – 03/18	14: Evolution and Natural selection /Labs 14 & 15 15: Naming of living things	Read pp. 286-321/ 323-339	
9	03/21 - 03/25	16: Prokaryotes/ labs 16 & 17 17: Protists	Read pp. 341-361/ 363-385	
		<b>Quiz on Chapters 12 – 17</b>	<b>Quiz</b>	<b>Chpt. 12-17</b>
10	03/28 - 04/01	18: Fungi Labs 18 & 19 19: Evolution of the animal phyla	Read pp. 387-401/ 403-441	
11	04/04 - 04/08	20: History of vertebrates /Labs 20 & 21	Read pp. 443-467/	
12	04/11 - 04/15	21: How humans survived	469-4781	
13	04/18 - 04/22	22: The animal body and how it moves /Labs 22 & 23 23: Circulation	Read pp. 483-505/ 507-523	
	<b>04/25</b>	<b>Assignment</b>	<b>Assignment</b>	<b>Chpt. 18-23</b>
14	04/25 - 04/29	24: Respiration/ Labs 24 & 25 25: Food Energy and essential nutrients	Read pp.525-534/ 539-552	
15	05/02 - 05/06	26: Homeostasis/Labs 26 & 27 27: Defense	Read pp.558-571/ 574-593	
<b>16</b>	<b>05/09 – 05/12</b>	<b>Final Exam</b>		

### Grading Plan:

- 90-100 = A
- 80-89 = B
- 70-79 = C
- 60-69 = D
- 0-59 = F

### Course Policies

#### Grading Policy

Each student must do his or her own homework and case studies. Discussion among students on homework and cases is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions - especially on the course's website. Students must do their own work on the homework and exam. Cheating and Plagiarism are strictly forbidden. Cheating includes but is not limited to: plagiarism, submission of work that is not the student's own, submission or use of falsified data, unauthorized access to exam or assignment, use of unauthorized material during an exam, supplying or communicating unauthorized information for an assignment or exam.

#### Participation

Students are expected to attend and participate in all class activities- as listed above, as it is 5% of the grade. Points will be given to students who actively participate in class activities including field trips, laboratories, and ask questions of guest speakers and other presenters.

### **Cell phone and headphone use**

Please turn cell phones off or place them on silence or vibrate mode **BEFORE** coming to class. Also, answer cell phones **OUTSIDE OF CLASS** (not in the classroom). Exercising cell phone use courtesy is appreciated by both the instructor and classmates. Headphones are to be removed before coming to class.

### **Attendance Policy**

Students are expected to regularly attend all classes for which they are registered. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of his/her responsibility to complete all course work by the required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the academic counselor for investigation and potential intervention. Instructors may drop students from the class after 3 absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable.

### **Academic Integrity**

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the college community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor.

### **Diné Philosophy of Education**

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Íina and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

### **Students with Disabilities**

The Navajo Technical College and the General Science program are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability, or needs special accommodations should inform the instructor privately of such so that accommodations arrangement can be made. Students who need an accommodation should also contact the Special Needs Counselor, Malcolm McKerry, whose phone number is 505-786-4138.

### **Helping Students Learn:**

1. Read the assigned text before and after classes
2. Take class notes in paraphrased formats, then recopy and revise these notes after classes.
3. Prepare adequately for the labs beforehand and develop an effective plan for carrying out laboratory exercises.
4. Join small study group (between 3-5 students) to accomplish homework problem sets. Try the homework on your own and then meet periodically with study group members to review them. Attempt and complete all assigned work and turn them in timely. Grades will be subtracted from late submission of homework.

5. If necessary, contact me during the above stated office hours:
6. Do not procrastinate, and so complete all work as when due to recall freshly the studied material.
7. Set enough time aside in your daily schedule for this class and the preparation required. Sessions should be short and intense to keep your focus.
8. Study session: 1 hour via stem lab students.