Biology for Science Majors (BIOL 1306) Credit:

3 semester credit hours

INSTRUCTOR CONTACT INFORMATION

Instructor: Fadhili Tuguta
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Office Phone: 409-247-5261
Office Location: MPC 213
Office Hours: Monday-Thursday 10:00 AM– 3:00 PM

Co-requisite: BIOL 1106 Biology for Science Majors I Laboratory

Prerequisite: Passed the TSI reading and writing placement exams for LIT

Course Description

BIOL 1306 Biology for Science Majors I (lecture)
This lecture-based course accompanies BIOL 1106, Biology for Science Majors I lab. This lecture course provides a survey of biological principles with an emphasis on fundamental principles of living organisms including physical/chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics and scientific reasoning are included.

Required Textbook and material OpenStax ISBN-10: 1-947172-51-4

https://openstax.org/details/books/biology-2e
Your textbook for this class is available for free online. If you prefer, you can also get a print version at a very low cost. Your book is available in web view and PDF for free. You can also choose to purchase on iBooks or get a print version via the campus bookstore or from OpenStax on Amazon.com.
You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version.

Course Objectives

Upon successful completion of this course, students will:

1. Describe the characteristics of life.
2. Explain the methods of inquiry used by scientists.
3. Identify the basic requirements of life and the properties of the major molecules needed for life.
4. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
5. Describe the structure of cell membranes and the movement of molecules across a membrane.
6. Identify the substrates, products, and important chemical pathways in metabolism.
7. Identify the principles of inheritance and solve classical genetic problems.
8. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.

9. Describe the unity and diversity of life and the evidence for evolution through natural selection.

Course Outcome

1. Critical Thinking Skills: To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. Communication Skills: To include effective development, interpretation and expression of ideas through written, oral, and visual communication
3. Empirical & Quantitative Skills: To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. To include the ability to connect choices, actions, and consequences to ethical decision making

Grade Scale:

89.5 – 100 A
79.5 – 89.4 B
69.5 – 79.4 C
59.5 – 69.4 D
59.4 or below F

Course Calendar

Week	To Do	Due Date
Week 1 (01/20	Introduction Discussion Board: Netiquette for Online Learners Discussion Board: Introduction Syllabus Quiz/Syllabus Acknowledgement	01/24
Week 2 (01/27	*Study of Life* Chemistry of Life Total Video Time: 13 minutes Video Quiz: Characteristics of Life (Chapter 1) [7m57s] Video Quiz: Levels of Organization in the Body (Chapter 1) [2m45s] Video Quiz: Elements of the Body (Chapter 2) [1m52s] Look over instructions for: i. Individual Project: Biology Careers ii.Group Project: Genetic Disorders	01/31
Week 3 (02/03	*Biological Molecules* Total Video Time: 13 minutes Video Quiz: The 5 Most Important Molecules in Your Body (Chapter 2) [7m55s] Video Quiz: Biological Molecules (Chapter 3) [4m23s] Discussion Board: Chemistry of Life Get started on Individual Project Group Project: Genetic Disorders Quiz 1: Chapters 1–3	02/07
Week 4 (02/10	*Cell Structure & Function* Total Video Time: 13 minutes Video Quiz: Prokaryotes vs. Eukaryotes (Chapter 4) [4m42s] Video Quiz: Cell Structure (Chapter 4) [7m22s] Discussion Board: Cell Structure and Function Work on Individual Project Work on Group Project Exam I Chapters 1–3	02/14

Week 5 (02/17	*Structure & Function of Plasma Membranes* Total Video Time: 15 minutes Video Quiz: Cell Membrane Structure & Function (Chapter 5) [2m9s] Video Quiz: Membranes & Transport (Chapter 5) [11m45s] Discussion Board: Plasma Membrane Structure and Function Work on Individual Project Work on Group Project	02/21
Week 6 (02/24	*Metabolism* Total Video Time: 8 minutes Video Quiz: Metabolism & ATP (Chapter 6) [4m22s] Video Quiz: Enzymes & How they Work (Chapter 6) [3m9s] Work on Individual Project Work on Group Project	02/28
Week 7 (03/03	*Cell Respiration* Total Video Time: 15 minutes Video Quiz: Cell Respiration (Chapter 7) [14m14s] Discussion Board 5: Metabolism Individual Project is due Quiz 2: Chapter 4–5 Work on Group Project: Genetic Disorders	03/07
	Spring Break	
Week 8 03/17	*Photosynthesis* Total Video Time: 13 minutes Discussion Board: Photosynthesis & Cell Respiration Video Quiz: Photosynthesis (Chapter 8) [12m27s] Exam II (chapter 4–5) Work on Group Project	03/21
Week 9 03/24	*Cell Reproduction* Total Video Time: 24 minutes Discussion Board: Cell Reproduction and Cancer Video Quiz: Cell Communication (Chapter 9) [8m59s] Video Quiz: Cell Reproduction (Chapter 10) [10m48s] Video Quiz: How do Cancer cells behave differently than Normal ones? (Chapter 10) [3m51s] Quiz 3: Chapter 6–8 Work on Group Project	03/28
Week 10 03/31	*Meiosis & Sexual Reproduction* Total Video Time: 12 minutes Video Quiz: Meiosis (Chapter 11) [11m43s] Discussion Board: Biology Poster Project Gallery Walk Work on Group Project: Genetic Disorders	04/04
Week 11 04/07	*Mendel & Heredity* Modern Inheritance Total Video Time: 24 minutes Video Quiz: Mendel & Heredity (Chapter 12) [16m4s] Video Quiz: Non-Mendelian Inheritance (Chapter 13) [7m12s] Work on Group Project Exam III (6–10)	04/11
Week 12 04/14	*DNA Structure & Function* DNA Replication	04/18

	Total Video Time: 12 minutes Discussion: DNA & Heredity Video Quiz: DNA Structure (Chapter 14) [3m52s] Video Quiz: DNA-Book of You (Chapter 14) [4m28s] Video Quiz: DNA Replication (Chapter 14) [3m28s] DUE: Genetic Disorders Project	
Week 13 04/21	*Genes & Proteins* Total Video Time: 8 minutes Video Quiz: DNA to Protein (Chapter 15) [2m42s] Video Quiz: Protein Synthesis (Chapter 15) [4m55s] Quiz 4: Chapter 11–14	04/25
Week 14 04/28	*Gene Expression* Total Video Time: 9 minutes Video Quiz: Epigenetics (Chapter 16) [9m29s]	05/02
Week 15 (05/05	*Biotechnology & Genomics* Total Video Time: 20 minutes Video Quiz: Molecular Biology (Chapter 17) [14m32s] Discussion: Biotechnology and Genomics	05/7
Week 16 05/12	Final Exam FINAL EXAM (Chapters 11–17) Congratulations!! You made it!! Celebrate	05/12

Course Evaluation
Final Grades will be calculated according to the following criteria:

4-unit Exams	30%
4 quizzes	20%
video quizzes	20%
Projects	20%
Discussion	10%

Course Requirements:
•Completion of all written or oral reports
•Taken all four Unit tests
•Completed all homework assignments and taken all of the quizzes given during the semester
•Taken the final exam

Course Policies
- No late assignments will be accepted unless covered by a college excused absence.
- Exams. There will be four exams
- Attendance Policy. Students are expected to visit the blackboard three times a week.
- Online video assignments carry 20% of your final grade
- If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop completing assignments and fail to drop the course, you will earn an 'F' in the course.

AI STATEMENT
Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI),

such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor.
Students are reminded that all submitted work must be their own, original work unless otherwise specified. Students should contact their instructor with any questions as to acceptable use of AI / ChatGPT in their courses.

Student Code of Conduct Statement
It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document

Disabilities Statement

The Americans with Disability Act of 1990 and Section 504, Rehabilitation Act of 1973 are federal anti-discrimination statues that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the American with Disability Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator (409)839-2018. You may also visit the online resource at Special Populations - Lamar Institute of Technology (lit.edu)

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Starfish
LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.