BIOLOGICAL SCIENCE, BIO 1543-Lab

Class Time and Location: M 9:30AM – 11:30AM, Room # S 229
Instructor: Krishna Nath, Ph.D., M.Sc., B.Ed.
Office and Contact Information: Room # Spencer 238; Phone 394-7622 ext 1336
Email: knath@uarichmountain.edu
Office Hours: Posted on the office door.

Resources:

Lab Manual by Sylvia S. Mader (Online on McGraw-Hill):

In the class: Material for each lab activity and assignment will be provided by Instructor in the class room.

On CONNECT course: virtual lab activities will be conducted on McGraw-Hill CONNECT course. Use following link to register CONNECT course.

https://connect.mheducation.com/class/k-nath-biol-spring202420ip

If link does not work, please type the link into your browser. To register this course, you need super code. Super code will be provided by UARM bookstore along with your textbook. Scratch the card and have the super code to register the course.

FOOD & DRINK: Food and drinks, including water are not allowed in the classroom at any time.

ChatGPT and AI policy: The use of ChatGPT or any other AI program to generate your work in any manner is strictly prohibited in this class and constitutes academic dishonesty. This action will be subject to the penalties of the academic dishonesty policy.

COURSE DESCRIPTION: This course provides a study of fundamental biological concepts including terminology, structure and function, genetics, evolution, classification, processes and characteristics unique to living organisms. It is designed to introduce the principles of biology and will provide the necessary foundation for those desiring additional course work in the field of biology and health sciences. Laboratory is an integral part of this course and participation is required for successful completion of this course. **ACTS COURSE: BIOL1014**

PROGRAM OUTCOME & RATIONALE: The purpose of the Associate of Arts Program is to provide students with the knowledge and critical thinking skills that will enable students to analyze problems, arrive at intelligent conclusions, and make reasoned choices in their professional and personal lives.

- Students will demonstrate an understanding of physical and biological principles.
- Students will apply technological and research skills to identify, locate, and process information.
- Students will demonstrate competency in writing, reading, speaking, and listening.
- Students will be able to compete academically upon transfer to a four-year institution.

COURSE OBJECTIVES: Upon successful completion of Biological Science BIOL 154, the students will increase their fundamental concepts and problem-solving skills in:

Biological terminology, structure and function, genetics, evolution, classification that explains the unity and diversity, relationship between biotic and abiotic factors, typical cell their division and function, macromolecules and their regulation during metabolism, energy budget and its flow in ecosystem during bio-chemical reactions i.e. photosynthesis and cellular respiration, process of DNA replication, transcription, translation, importance of genetics to the theory of evolution.

Disclaimer: The information contained in this syllabus is as accurate as possible but may be subject to change with reasonable advance notice. The schedule and content of lectures and assignments may be changed at the discretion of the instructor upon oral notification in class. Changes may involve additions, deletions, substitutions, or changes in sequence or due date.

Table: Tentative Lab Schedule

Week	**Lab topic and assignment**
1	Virtual lab orientation (videos) Discuss syllabus, Scientific Method, Measuring with metric (in class and virtual)
2	Measuring with metric, Microscopy (in class and virtual)
3	Cell Structure and Function
4	Diffusion and Osmosis (virtual)
5	Photosynthesis (in class and virtual)
6	Cellular Respiration ((in class and virtual)
7	Cell Division/ Mitosis and Meiosis
8	The Scientific Method (virtual) **Review Assignments and grading**
9	Basic Mendelian Genetics ((in class and virtual))
10	DNA and the Genetic Code ((in class and virtual))
11	Evolution (in class and virtual)
12	Population Genetics(in class and virtual)
13	**Microbiology** (in class and virtual)
14	**Nonvascular plants & seedless vascular plants: in class & field visit**
15	**Seed plants, Review assignments and grading: in class & field visit**
16	**Final exam**

LABORATORY CONDUCT: The laboratory consists of a series of hands-on exercises that are designed to reinforce some of the principles covered in lecture. Labs will also introduce the student to some common laboratory equipment and Good Laboratory Practices. Students are expected to follow the instructor's direction and comply with the Rules of the Laboratory. Lab exercises are assigned beforehand, and it is expected that you **read the material BEFORE coming to class**. Labs are designed to be investigative and will require critical thinking skills to analyze results of experiments.

Course Requirements / Evaluation (Grading) for Lab

Lab activities and quizzes:		10 @ 10 points each	= 100 points
Virtual lab: CONNECT course on McGraw-Hill		10 @ 5 points each	= 50 points
Final Exam	1 @ 50 points	1 @50 points	= 50 points
Total points		**= 200**	

GRADING SCALE:
The final grade for the course will be determined by dividing the student's total number of points earned by the number of possible points. Grades are assigned based on the following percentage scale, after rounding the calculated percentage to the nearest whole number:
Table 2. Grade Scale.

Percentage	**Final Grade**
90-100	A
80- 89	B
70- 79	C
60- 69	D
<60	F

Lab Activities: Tentative dates are given in the syllabus for respective topic. Students are required to attend in each Lab and perform all the lab activities including offered Lab Quizzes and Lab Reports.

LAB QUIZZES – Approximately 12 quizzes will be given throughout the semester during laboratory periods and lowest one will be dropped off. The quizzes will consist of questions related to laboratory exercises performed, assigned readings, and related lecture information. These quizzes will be administered in class, and in some cases your lab work will be turned in in lieu of the quiz.

ATTENDANCE REQUIREMENTS: As a student, you are responsible for all material presented during lecture, whether present for the class or not. Assignments are to be completed in a timely fashion; therefore all make-up work must be completed within 5 calendar days of your return following an absence. Unexcused absences are not to exceed twice what the class meets in a week. Laboratory is a required part of this course and failure to attend or participate **will** result in an "F" for this course.

Make-up Policy: A student who misses an assignment because of an officially sanctioned college activity or those with a documented excuse for their absence, will be permitted to make up the assignment or test without penalty. Others may also make up missed exams, but will be penalized 10% for each occurrence. Any deviation from this policy will be considered on a case-by-case basis.

Disability Policy: It is the policy of UARM to accommodate students with disabilities, pursuant to state and federal law. Any student with a disability who needs accommodations should contact the Vice President for Student Affairs Office, 394-7622 ext.1400.

Title IX and Discrimination Policy: UA Rich Mountain adheres to a policy that enables all individuals regardless of race, color, gender, national origin, age, religion, sexual orientation, veteran's status, or disability, to work and study in an environment unfettered by discriminatory behavior or acts. Harassment of an individual or group will not be

condoned, and any person (student, faculty, of staff member) who violates this policy will be subject to disciplinary action.

Harassment that is considered discriminatory includes actions or conduct (verbal, graphic, gestural, or written) directed against any person or group with the intent to demean or create a hostile or threatening environment. It is not the intent of this policy to infringe upon or limit educational, scholarly, or artistic expression. Any person who believes he or she has been discriminated against should contact the Title IX Coordinator to obtain assistance and information concerning the filing of a complaint.

Face mask policy: Students are encouraged but not required to wear face masks in class and public spaces.

Attendance Policy: For attendance purposes, a student who is displaying symptoms of illness must email: contact.tracing@uarichmountain.edu to determine next steps for an excused absence related to COVID or flu. Contacting an instructor **DOES NOT** start this process or guarantee an excused absence.

Arkansas Clean Air Act: In compliance with the Arkansas Clean Air Act, UARM is a smoke and tobacco free facility. Students are to refrain from the use of all tobacco products while on campus.

Student Misconduct: Students committing misconduct are subject to disciplinary sanction(s) and or restrictions. Misconduct or prohibited behavior includes, but is not limited to endangerment, harassment, disruption, sexual misconduct, dishonesty, illegal drugs and/or alcohol, fire or safety issues, gambling, property violations, computer violations or other violations as listed in detail in the UARM catalog.

Campus Security: UA Rich Mountain strives to provide a safe learning environment; therefore, students who know of any security risk are asked to contact a college official. For more information follow this link and look under Health and Safety: http://www.uarichmountain.edu/at-a-glance/disclosures

UA Rich Mountain Mission: UA Rich Mountain provides transformative education to all learners.

Credit Hour Requirement Calculator

Course Information				
Department, Course Number		Biological Science		BIO1543
Course Title	Biological Science			
Credit Hours	4			
Mode of Delivery	Traditional			Lecture/Lab
Weeks in Part of Term	15			
Level of Reading Material	Advanced/Scientific/Technical (2)			2
Reading Level of Students	Average Student (2)			2
Average Pages per Hour	11			
		Enter either week or term, not both		
Contact Hours		**Hours/Wee**	**Hours/Term**	**Total Hours**
Lecture/Recitation		3		45
Lab Contact Hours		2		30
	Pages Asg'd	**Hours/Wee**	**Hours/Term**	
Syllabus Items				
Reading Lecture Material	400		36.4	36.4
Learning Outcomes			15	15
Reading Lab Assignment	150		16.4	13.6
Preparing Lab Reports			4	4
Reviewing lecture material for exams			8	8
				0
				0
Total Hours				152
Required Hours				150
Difference				Ok + 2