**Alabama A&M University**
**School of Arts and Sciences**
**Department of Biology**

**COURSE TITLE:** **Principles of Biology**
**Course Number:** **BIO 103**
**Course Credit:** **Three Semester Hours (3)**
**Prerequisites:** **None**
**Instructor:** **DEPARTMENTAL FACULTY**

## COURSE DESCRIPTION:

**This course introduces the student to basic biological principles necessary to understand biology. It begins with a study of the basic characteristics and organization of living things and lays the foundation in chemistry needed for an understanding of biological processes. From this background, the cell and its organization, behavior of chromosomes and foundation of genetic mechanisms, energetic relationships of photosynthetic and respiration, basic concepts of taxonomy and monerans, protistians, fungi and lower plants will be studied.**

## COURSE OBJECTIVE:

**To introduce the student to basic biological principles so that he/she may understand the nature of living systems. To understand and appreciate the unity and diversity of living things.**

## COURSE GOALS:

**As a result of active participation in the lectures and labs, the student should know and understand:**

1. **Basic chemical concepts and biological molecules**
2. **Basic cellular structure and processes**
3. **Bioenergetics**
4. **Energy transfer**
5. **Information transmission and transfer**
6. **Diversity of life**
7. **Basic laboratory skills applicable to scientific research in biology**

## MODE OF INSTRUCTION:

**The basic method of instruction will include lectures, lecture-discussions, and lecture-lab-discussions. Questions are invited and may be raised at any point. In addition, all students are expected to participate.**

**MATERIALS OF INSTRUCTION:**

**A. Text: Biology Solomon, Berg, and Martin Seventh edition; Saunders College Publishing, Philadelphia. 2003.**

**B. Laboratory Manual: Laboratory Exercises in Biology. General Biology Instructors, Second Edition: Kendall Hunt Publishers, Dubuque, IA, 1989.**

**C. Audio-Visual Materials: Films, transparencies, film strips, models, etc. will be used as they relate to the subject matter and are available.**

**PROCEDURES/REQUIREMENTS/EVALUATION**

**1. Lecture classes will meet for two one-hour periods per week and labs will meet for one two-hour period. The student is expected to attend all class sessions and to prepare adequately for each.**

**2. Responsibility for student matters covered during absences, excused or unexcused, rests on the student.**

**3. Each student must have a new lab manual. Please read lab assignments before coming to lab class. The lab work itself is designed to cover the full lab period so there will be no time to read and do the work at the same time. Special instructions, directions, and explanations are given at the beginning of the lab period. Be on time. Lab reports are due at the end of the lab period.**

**4. Problems involved in lab prep make it impossible to offer make-up labs. However, if you find that during the week you can not be present for the lab in which you are registered, please check the master lab schedule and make arrangements to attend another section or another instructor's lab.**

**5. Grades of "I" or "W" will not be substituted for grade "F". University regulations regarding "I's" or "W's" will be followed. Examination schedules and grading scales for lectures and labs will be determined by individual instructors.**

**6. Five lecture and four lab exams will be scheduled during the semester and will be announced. Please make every effort to be present for the exams, as make-ups will not be given. If it is necessary to be absent the instructor should be notified, if at all possible.**

**7.** **Lab reports, which will make up a part of the grades, are to be turned in at the end of each lab period.**

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|---|---|---|
| **Grading scale:** | **90-100** | **A** |
| | **80-89** | **B** |
| | **65-79** | **C** |
| | **55-64** | **D** |
| | **54 & less** | **F** |

**9.** **The instructor will be available for extra assistance during office hours which will be posted. If this conflicts with your schedule, other arrangements will be made.**

**10.** **Each student must have a <u>new</u> manual.**

**STUDENT BEHAVIOR**

**A.** **Class attendance**

**1.** **Students are expected to attend all class meetings.**

**2.** **Students are expected to be on time. The instructor will lock the door five minutes after the class begins.**

**B.** **Classroom behavior**

**1.** **Students are not expected to be disruptive during lecture or classroom discussion. Remember that good communication includes listening, as well as talking.**

**2.** **Students are expected to show a positive attitude in class.**

**3.** **Only acceptable language is tolerated in the classroom**

**a.** **Students continuing to talk and to use unacceptable language will be asked to leave the classroom.**

**C.** **Students are expected to be present and participate in all testing activities. If excused for emergency reasons, make-up test must be taken within ten school days.**

**ALABAMA A & M UNIVERSITY**
**SCHOOL OF ARTS AND SCIENCES**
**DEPARTMENT OF BIOLOGY**

Course Title: Principles of Biology Lab
Course Number: 103L
Course Credit: One Semester Hour (1)
Prerequisites: None
Instructor: Biology Faculty

## COURSE DESCRIPTION:

This course is offered to all science majors as the beginning course to their career. It provides the student with hands-on activities involving the topics taught in the lecture. Topics included are the basic characteristics, principles, and the organization of living things. Chemistry is used to relate the biological processes, such as photosynthesis, respiration, behavior of chromosomes and basic taxonomy.

## RATIONALE:

This course has the same rational as the lecture but provides hands-on activities. This provides the student experience in laboratory techniques. The rational for the lecture is to provide the student with the tools needed to function as a biological literate citizen. This involves knowing the basic principles, their social/environmental implications and the interrelationships of living organisms/their dependence upon one another and their environment.

## COURSE GOALS:

As a result of active participation in the lab, the student should be able to:

1. Appreciate the unity and diversity of living things.
2. Understand his/her own nature, as well as that of other living system.
3. Understand the role and implication of biology for daily use.
4. Understand the basic laboratory skill applicable to scientific research in the various fields of biology.

## MODE OF INSTRUCTION:

The basic methods of instruction will include short introductory lectures follow by the experiment and a summary of the experiment at the end of the period. Students are invited to raise questions at any point of the class period. All students are to participate.

**MATERIALS OF INSTRUCTION:**

1. Laboratory Manual: Laboratory Exercises in Biology. Jenkins, Henderson, et. al., Second Edition: Kendall Hunt Publishers, Dubuque, Ia, 1988.
2. Designed experiments and Audio Visual Material.

**PROCEDURES/REQUIREMEENTS/EVALUTION**

1. Labs will meet for one two-hour period per week. The student is expected to attend all labs and to prepare adequately for each.
2. Each student must have a new lab manual. Please read lab assignments before coming to lab class. The lab work itself is designed to cover the full lab period, so there will not be any time to read and do the work at the same time. Special instructions, directions, and explanations are given at the beginning of the lab period. Be on time. Lab reports are due at the end of the lab period.
3. Problems involved in lab prep make it impossible to offer make-up labs. However, if you find that during the week you cannot be present for the lab in which you are registered, please check the master lab. Schedule and make arrangements to attend another section or another instructor's lab.
4. Grade of "I" or "W" will not be substituted for grade "F". University regulation regarding "I" or "W" will be followed. Individual instructors will determine examination schedules.
5. Lab reports, which make up a part of the grade, are to be turned in at the end of each lab period.

   **Grading scale:**

| | |
|---|---|
| 90-100 | A |
| 80-89 | B |
| 65-79 | C |
| 55-64 | D |
| 54 & less | F |

**STUDENT BEHAVIOR**

1. Class attendance
   a. Students are expected to attend all labs
   b. Students are expected to be on time. The instructor will lock the door five minutes after the class begins.
2. Classroom behavior
   a. Students are not expected to talk out during the short lecture and are to keep talking low during the lab. Good communication includes listening as well as talking.
   b. Students are expected to show a positive attitude in class.
   c. Only acceptable language is tolerated in the classroom. Students continuing to talk and to use unacceptable language will be asked to leave the classroom.

3. Students are expected to be present and participate in all testing activities. If students are excused for emergency reasons, make-up test must be taken within ten school days.