

UNIVERSITY OF NORTH ALABAMA

COURSE NUMBER AND TITLE: BI 112, Principles of Biology

COURSE DESCRIPTION: Evolution, diversity, and ecology of organisms. Designed for biology and other science majors or minors. Three class periods; one 2-hour laboratory period per week. Prerequisite: BI 111. Special fee: \$30.00. (Fall, Spring)

CREDIT HOURS: 4 semester

COURSE SYLLABUS

Textbook: *BIOLOGY*, 6th ed. by N. A. Campbell and J. B. Reece

Laboratory Manual: *Laboratory Manual for Starr and Taggart's Biology, The Unity and Diversity of Life and Starr's Biology, Concepts and Applications* by J.W. Perry, D. Morton, and J.B. Perry

| COURSE CONTENT (LECTURE) | MINIMUM CHAPTERS |
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| Introduction, Plant Structure | Chapters 29, 30, 35 |
| Plant Structure and Growth | Chapter 35 |
| Transport in Plants | Chapter 36 |
| Plant Nutrition | Chapter 37 |
| Plant Reproduction and Development | Chapter 38 |
| Control Systems in Plants | Chapter 39 |
| An Introduction to Animal Structure and Function | Chapter 40 |
| Animal Nutrition | Chapter 41 |
| Circulation and Gas Exchange | Chapter 42 |
| The Body's Defenses | Chapter 43 |
| Controlling the Internal Environment | Chapter 44 |
| Chemical Signals in Animals | Chapter 45 |
| Nervous Systems in Animals | Chapter 48 |

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| Sensory and Motor Mechanisms | Chapter 49 |
| Introduction to Ecology | Chapter 50 |
| Population Ecology | Chapter 52 |
| Community Ecology | Chapter 53 |
| Ecosystems | Chapter 54 |
| Descent with Modification: A Darwinian View of Life | Chapter 22 |
| Evolution of Populations | Chapter 23 |
| The Origin of Species | Chapter 24 |
| Phylogeny and Systematics | Chapter 25 |

COURSE GOAL: To introduce the student to biological principles as they apply primarily at the tissue, organismal, and population levels of organization. More specifically, the goals of the lecture component of the course are to expose the student to biological principles that deal with: (1) the structure and function of higher plants and animals, including homeostatic mechanisms, (2) the interactions that occur among organisms and between organisms and their environment, and, (3) the mechanism and the evidence of organic evolution. The goal of the laboratory component of the course is to complement the lecture component by conducting laboratory exercises that expose the student to biodiversity, reproduction and development, ecology, evolution, and the methods of observation and investigation that are employed by biologists.

EVALUATION/GRADING SCALE: Two-three major lecture exams and a final exam. The lecture portion of this course is worth two thirds of the total and the laboratory grade one third. The laboratory grade will be determined by the laboratory instructor and reported to the lecture instructor at the end of the term. The final grade will be determined by the percentage of total points accumulated (A= 90-100, B= 80-89, C= 70-79, D= 60-69, F= below 60).

LABORATORY: Every student enrolled in BI 112, Principles of Biology lecture, is required to be concurrently enrolled in a BI 112 laboratory. The student is responsible for attendance and assignments in this laboratory at the direction of the laboratory instructor.

ATTENDANCE: Regular and punctual attendance at all scheduled classes and activities is expected of all students and is regarded as integral to course credit. Each student is directly responsible to the instructor for absences and for making up

work missed. Attendance will be taken at the beginning of the period and if the student is not present at that time, he or she will be counted as absent. If a student is tardy, it is the student's responsibility to inform the instructor that he or she is present.

"Whenever a student's cumulative absences for any reason - excused or un-excused - exceed the equivalent of four weeks of scheduled classes and activities (two weeks in a summer session), no credit may be earned for the course" (see current [UNA Catalog](#)).

**ANY MISSED EXAM WILL BE MADE UP AT THE DISCRETION OF
THE INSTRUCTOR.**

It is the policy of the University of North Alabama to afford equal opportunity in education to qualified students. Therefore, a student who has a disability that inhibits the student's ability to meet course requirements and who desires accommodations must contact the instructor and Developmental Services within the first three class meetings of the semester (within the first three days during summer terms). The goal is to develop a timely accommodation plan and to file an American with Disabilities Act (ADA) Accommodation Form. Course requirements will not be waived, but accommodations will be made to allow each student to meet course requirements, provided the student acts within the first three class meetings in working with the instructor to develop an accommodation plan. If a disability is identified later in the semester, a non-retroactive accommodation plan will be developed at that time.

PRINCIPLES OF BIOLOGY 112 LABORATORY

LABORATORY MANUAL: *Laboratory Manual for Starr and Taggart's Biology, The Unity and Diversity of Life and Starr's Biology, Concepts and Applications* by J.W. Perry, D. Morton, and J.B. Perry

LABORATORY SCHEDULE:

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| Laboratory Exercise #18 | Taxonomy: Classifying and Naming Organisms |
| Laboratory Exercise #19 | Eubacteria and Protistans I |
| Laboratory Exercise #20 | Protistans II |
| Laboratory Exercise #21 | Fungi |
| Laboratory Exercise #22 | Bryophytes |
| Laboratory Exercise #23 | Seedless Vascular Plants |
| Laboratory Exercise #24 | Seed Plants I |
| Laboratory Exercise #25 | Seed Plants II |
| Laboratory Exercise #26 | Sponges and Cnidarians |
| Laboratory Exercise #27 | Flatworms, Roundworms, and Rotifers |
| Laboratory Exercise #28 Animals | Mollusks, Segmented Worms, and Joint-legged |

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| Laboratory Exercise #29 | Echinoderms, Invertebrate Chordates |
| Laboratory Exercise #30 | Vertebrates |
| Laboratory Exercise #41 | Animal Reproduction and Development |
| Laboratory Exercise #42 | Ecology/Evolution |

EVALUATION/GRADING SCALE: Frequent laboratory quizzes are administered and/or report sheets from the lab manual (pre-lab questions or post-lab questions) are graded, usually on a 10 point basis, and a final percentage score is forwarded to the lecture instructor.