

PRINCIPLES OF BIOLOGY- BI 112

Instructor- Various

Spring, 2013

Office Location and Office Hours provided by each instructor.

COURSE DESCRIPTION

BI 112, Principles of Biology, is the second course in the department's sequence of courses for biology and other science majors and minors. This course covers the evolution, diversity, and ecology of organisms. There are three one-hour lecture periods and one two-hour laboratory period per week. BI 111 is prerequisite. Four credit hours are earned for successful completion of the course. Course fee: \$50.00.

TEXT

Campbell Biology, 9th ed., by Reece et al.

CLASS ATTENDANCE AND MAKE-UPS

Each instructor establishes their own attendance policy within university guidelines.

EXAMS AND EVALUATION

Each instructor establishes their own evaluation policy, but all instructors count lecture as 2/3 of the course grade and laboratory as 1/3. All instructors administer three-four major exams throughout the semester.

LECTURE TOPICS

Chapter 22. Descent with Modification: A Darwinian View of Life

290-3-3-.16(1)(c)4.

***Molecular basis for evolutionary theory and classification.* This chapter includes material on molecular homologies as evidence that both supports evolutionary theory and serves as a basis for classification. Assessed on lecture examination.**

Chapter 23. The Evolution of Populations

290-3-3-.16(1)(c)4.

***Molecular basis for evolutionary theory and classification.* This chapter includes material on molecular homologies as evidence that both supports evolutionary theory and serves as a basis for classification. Assessed on lecture examination.**

Chapter 24. The Origin of Species

290-3-3-.15(1)(c)2.(i)

***Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems.* This chapter covers the origin of species. Assessment on lecture examination.**

290-3-3-.15(1)(a)1.(iv)

Knowledge of scientific theory and principles of the origin and development of life. This chapter covers the origin of species. Assessed on lecture examination.

Chapter 25. The History of Life on Earth

290-3-3-.15(1)(c)2.(i)

Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems. This chapter covers the origin and development of life. Assessment on lecture examination.

290-3-3-.15(1)(a)1.(iv)

Knowledge of scientific theory and principles of the origin and development of life. This chapter covers the origin and development of life. Assessed on lecture examination.

290-3-3-.16(1)(c)4.

Molecular basis for evolutionary theory and classification. This chapter includes material on molecular homologies as evidence that both supports evolutionary theory and serves as a basis for classification. Assessed on lecture examination.

Chapter 29. Plant Diversity I: How Plants Colonized Land

290-3-3-.15(1)(c)2.(i)

Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems. This chapter covers the origin and development of plant life. Assessment on lecture examination.

290-3-3-.15(1)(a)1.(iv)

Knowledge of scientific theory and principles of the origin and development of life. This chapter covers the origin and development of plant life. Assessed on lecture examination.

Chapter 30. Plant Diversity II: The Evolution of Seed Plants

Chapter 35. Plant Structure, Growth, and Development

290-3-3-.15(1)(d)2.(i)

Knowledge of biology, including organization of life, bioenergetics, biomechanics, and cycles of matter. This chapter covers organization in plants at the cell, tissue, and organ levels. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 36. Resource Acquisition and Transport in Vascular Plants

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 37. Soil and Plant Nutrition

Chapter 38. Angiosperm Reproduction and Biotechnology

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 39. Plant Response to Internal and External Signals

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 40. Basic Principles of Animal Form and Function

290-3-3-.15(1)(a)1.(x)

Knowledge of regulation of biological systems including homeostatic mechanisms. This chapter covers the basics of regulation by the endocrine and nervous systems, homeostasis, and feedback mechanisms. Assessed on lecture examination.

290-3-3-.15(1)(d)2.(i)

Knowledge of biology, including organization of life, bioenergetics, biomechanics, and cycles of matter. This chapter covers organization in animals at the tissue, organ, and organ system levels. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 41. Animal Nutrition

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 42. Circulation and Gas Exchange

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 43. The Immune System

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 44. Osmoregulation and Excretion

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 45. Hormones and the Endocrine System

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 48. Neurons, Synapses, and Signaling

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 49. Nervous Systems

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 50. Sensory and Motor Mechanisms

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 51. Animal Behavior

290-3-3-.15(1)(a)1.(ix)

Knowledge of behavior of organisms and their relationships to social systems. This chapter covers the behavior of organisms and includes sections on social learning and sociobiology. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(i)

Knowledge of life processes in living systems including organization of matter and energy. This chapter covers some of the life processes in living systems. Assessed on lecture examination.

Chapter 52. An Introduction to Ecology

290-3-3-.15(1)(b)2.(i)

Knowledge of biology, including molecular biology, bioenergetics, and ecology. This entire chapter is concerned with ecology. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(v)

Knowledge of ecological systems including the interrelationships and dependencies of organisms with each other and their environments. This chapter covers biomes (ecological systems) as well as interrelationships between organisms and their environments. Assessed on lecture examination.

290-3-3-.15(1)(c)2.(i)

Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems. This chapter covers ecology. Assessment on lecture examination.

Chapter 53. Population Ecology

290-3-3-.15(1)(b)2.(i)

Knowledge of biology, including molecular biology, bioenergetics, and ecology. This entire chapter is concerned with ecology. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(v)

Knowledge of ecological systems including the interrelationships and dependencies of organisms with each other and their environments. This chapter covers interrelationships between organisms. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(vi)

Knowledge of population dynamics and the impact of population on its environment. This chapter covers population dynamics and impacts of populations on their environments in detail. Assessed on lecture examination.

290-3-3-.15(1)(c)2.(i)

Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems. This chapter covers ecology and population dynamics. Assessment on lecture examination.

Chapter 54. Community Ecology

290-3-3-.15(1)(b)2.(i)

Knowledge of biology, including molecular biology, bioenergetics, and ecology. This entire chapter is concerned with ecology. Assessed on lecture examination.

290-3-3-.15(1)(a)1.(v)

Knowledge of ecological systems including the interrelationships and dependencies of organisms with each other and their environments. This chapter covers interrelationships between organisms and their environments. Assessed on lecture examination.

290-3-3-.15(1)(c)2.(i)

Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems. This chapter covers ecology. Assessment on lecture examination.

Chapter 55. Ecosystems and Restoration Ecology

290-3-3-.15(1)(d)2.(i)

Knowledge of biology, including organization of life, bioenergetics, biomechanics, and cycles of matter. This chapter covers biogeochemical cycles. Assessed on lecture examination.

290-3-3-.15(1)(c)2.(i)

Knowledge of biology, including origin and development of life, ecology, population dynamics, and the flow of energy and materials through Earth systems. This chapter covers the flow of energy and materials through Earth systems. Assessment on lecture examination.

BI 112, PRINCIPLES OF BIOLOGY LABORATORY

Instructor- Various

Office Location and Office Hours provided by each instructor.

Laboratory Manual: *Biology 111 and 112 Laboratories, University of North Alabama, Biology Department, Perry, Morton, and Perry.*

CLASS ATTENDANCE AND MAKE-UPS

Each instructor establishes their own attendance policy within university guidelines.

EXAMS AND EVALUATION

Each instructor establishes their own evaluation policy, but all instructors administer weekly quizzes, and laboratory counts as one-third of the course grade.

BI 112 LABORATORY SCHEDULE SPRING 2013

Exercise 18 Taxonomy: Classifying and Naming Organisms

290-3-3-.15(1)(a)I.(iii) Knowledge of principles and practices of biological classification.
Exercise 18 covers the principles and practices of biological classification. Assessed on a laboratory quiz.

Exercise 19	Bacteria and Protists I
Exercise 20	Protists II
Exercise 21	Fungi
Exercises 22 and 23	Bryophytes and Seedless Vascular Plants
Exercise 24	Seed Plants I: Gymnosperms
Exercise 25	Seed Plants II: Angiosperms
Exercise 26	Sponges and Cnidarians
Exercises 27 and 28	Flatworms and Rotifers and Roundworms
Exercises 28 and 29	Segmented Worms & Mollusks and Jointed-legged Animals
Exercise 30	Echinoderms and Invertebrate Chordates
Exercise 31	Vertebrates

290-3-3-.15(1)(a)I.(ii) Knowledge of similarities and differences among animals, plants, fungi, microorganisms, and viruses. Exercises 19-31 include the study of differences and similarities among these different groups of organisms. Assessed on a series of written and practical laboratory quizzes.

Exercises 42 and 43	Animal Development
Exercises 7, 16, and 45	Ecology/Evolution