

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

HSDP 512

COURSE TITLE

BIOLOGY 2

TYPE COURSE

NON FEE

BASIC SKILLS

CATALOG COURSE DESCRIPTION

This is the second course of a two course Biology series. Students will use experimentation and inquiry to explore the basic concepts of biological science, including principles of classification, plant and animal diversity, and the functions of human systems. The laboratory component is online using virtual software. (FT)

LECTURE/LABORATORY HOURS

90

ADVISORIES

HSDP 511 BIOLOGY 1

RECOMMENDED SKILL LEVEL

NONE

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCE students demonstrate effective communication skills.
3. Critical Thinking
SDCE students critically process information, make decisions, and solve problems independently or cooperatively.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

4. Personal and Professional Development

SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self advocacy skills to cope with changing situations in their lives.

COURSE GOALS

1. Students will understand the foundation for the classification of systems.
2. Students will learn about distinguishing between plant and animal cell structure and function.
3. Students will increase their understanding of how human systems function and interact with one another.
4. Students will create and maintain a notebook in which to record, evaluate, and reflect on scientific processes and concepts.
5. Students will acquire college readiness skills, such as working cooperatively in diverse groups, thinking critically, and working with technology in the classroom.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to:

1. Explain the use of classification systems and binomial nomenclature.
2. Compare, contrast and explain plant and animal cells.
3. Appraise and explain diversity in animals.
4. Explain and differentiate between prokaryotes and eukaryotes.
5. Explain and differentiate between the various systems of the human body.

SECTION II

COURSE CONTENT AND SCOPE

1. Classification and Diversity
 - 1.1. The tree of life
 - 1.1.1. The linnaean system of classification
 - 1.1.2. Classification based on evolutionary relationships
 - 1.1.3. Domains and kingdoms
 - 1.2. Viruses and prokaryotes
 - 1.2.1. Viral structure and reproduction
 - 1.2.2. Viral diseases
 - 1.2.3. Bacteria and archaea
 - 1.2.4. Beneficial roles of prokaryotes
 - 1.2.5. Bacterial diseases and antibiotics

COURSE CONTENT AND SCOPE (CONTINUED)

- 1.3. Protists and fungi
 - 1.3.1. Diversity of protists
 - 1.3.2. Animal-like, plant-like, and fungus-like protists
 - 1.3.3. Diversity of fungi
 - 1.3.4. Ecology of fungi
2. Plants
 - 2.1. Plant diversity
 - 2.1.1. Origins of plant life
 - 2.1.2. Classification of plants
 - 2.1.3. Diversity of flowering plants
 - 2.2. Plant structure and function
 - 2.2.1. Plant cells and tissues
 - 2.2.2. The vascular system
 - 2.2.3. Roots, stems, and leaves
 - 2.3. Plant growth, reproduction, and response
 - 2.3.1. Plant life cycles
 - 2.3.2. Reproduction in flowering plants
 - 2.3.3. Seed dispersal and germination
 - 2.3.4. Asexual reproduction
 - 2.3.5. Plant hormones and responses
3. Animals
 - 3.1. Invertebrate diversity
 - 3.1.1. Animal characteristics
 - 3.1.2. Animal diversity
 - 3.1.3. Sponges and cnidarians
 - 3.1.4. Flatworms, mollusks, and annelids
 - 3.1.5. Roundworms and echinoderms
 - 3.2. Arthropods
 - 3.2.1. Arthropod diversity
 - 3.2.2. Crustaceans
 - 3.2.3. Arachnids
 - 3.2.4. Insect adaptations
 - 3.2.5. Arthropods and humans
 - 3.3. Vertebrate diversity
 - 3.3.1. Vertebrate origins
 - 3.3.2. Fish diversity
 - 3.3.3. Amphibians
 - 3.3.4. Vertebrates on land
 - 3.4. Amniotes
 - 3.4.1. Amniotes diversity
 - 3.4.2. Reptiles
 - 3.4.3. Birds
 - 3.4.4. Mammals
 - 3.5. Animal behavior
 - 3.5.1. Adaptive value of behavior
 - 3.5.2. Instinct and learning
 - 3.5.3. Social behavior and animal cognition

COURSE CONTENT AND SCOPE (CONTINUED)

4. Human Biology
 - 4.1. Human systems and homeostasis
 - 4.1.1. Levels of organization
 - 4.1.2. Mechanisms of homeostasis
 - 4.1.3. Interactions among systems
 - 4.2. Nervous and endocrine systems
 - 4.2.1. How organ systems communicate
 - 4.2.2. Neurons
 - 4.2.3. The senses
 - 4.2.4. Central and peripheral nervous systems
 - 4.2.5. Brain function and chemistry
 - 4.2.6. The endocrine system and hormones
 - 4.3. Respiratory and circulatory systems
 - 4.3.1. Respiratory and circulatory functions
 - 4.3.2. Respiration and gas exchange
 - 4.3.3. The heart and circulation
 - 4.3.4. Blood vessels and transport
 - 4.3.5. Blood
 - 4.3.6. Lymphatic system
 - 4.4. Immune system and disease
 - 4.4.1. Pathogens and human illness
 - 4.4.2. Immune system and responses
 - 4.4.3. Immunity and technology
 - 4.4.4. Overreactions of the immune system
 - 4.4.5. Diseases that weaken the immune system
 - 4.5. Digestive and excretory systems
 - 4.5.1. Nutrients and homeostasis
 - 4.5.2. Digestive system
 - 4.5.3. Absorption of nutrients
 - 4.5.4. Excretory system
 - 4.6. Protection, support, and movement
 - 4.6.1. Skeletal, muscular, and integumentary systems
 - 4.7. Reproduction and development
 - 4.7.1. Reproductive anatomy and processes
 - 4.7.2. Fetal development
 - 4.7.3. Birth and development

APPROPRIATE READINGS

Students may be given reading assignments from the textbook and current research studies related to the course material.

WRITING ASSIGNMENTS

Written analysis of class laboratory experiments and research studies related to the course material. Students will also create and maintain a notebook to record scientific processes and concepts.

OUTSIDE ASSIGNMENTS

Assignments may include but are not limited to: appropriate research projects, reading and writing assignments.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Students will write up a laboratory report answering questions based on virtual laboratory experiments and virtual class demonstrations.

EVALUATION

Evaluation methodologies will be consistent with, but not limited by, the following types or examples:

1. Written exams which include essay questions to test for content, terminology, and knowledge of subject matter.
2. Post-laboratory reports to assess knowledge and understanding of major scientific concepts.
3. Laboratory write-up and exam questions to assess student's ability to read, interpret, or construct a data table or graph based on course related data.
4. Participation of in-class discussions related to course material and lecture topic.
5. Project-based learning experiences related to course material.

METHOD OF INSTRUCTION

Instructional methodologies will be consistent with, but not limited by, the following types or examples:

Lectures, laboratory, seminars, virtual laboratory experiments, virtual class demonstrations, collaborative group projects and field trips.

This course, or sections of this course, may be offered through distance education.

TEXTS AND SUPPLIES

Texts:

1. *Biology*, Nowicki, Stephen, McDougal Littell, current edition.

Supplies:

1. Instructor supplied supplemental written materials.
2. Online supplemental textbook resources for virtual labs and dissections.

PREPARED BY: Holly Rodriguez DATE 9/29/13

REVISED BY: Leticia Flores DATE June 3, 2020

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog