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| **PROFESSOR:** | **PHONE NUMBER:** |
| **OFFICE LOCATION:** | **E-MAIL:** |
| **OFFICE HOURS:** | **SEMESTER:** |

1. **COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:**

**BSC 1011 BIOLOGICAL SCIENCE II (3 CREDITS)**

This course builds on the cell biology presented in BSC 1010 and examines the mechanisms of genetic change in populations, the adaptation of living things to their environment, the concept of niche and the processes leading to biodiversity, population growth and regulation, energy flow and biogeochemical cycling in the biosphere, and interactions of creatures with the living and non-living components of their ecosystems.

1. **PREREQUISITES FOR THIS COURSE:**

{BSC 1010 and BSC 1010L} with a grade of “C” or better

**CO-REQUISITES FOR THIS COURSE:**

BSC 1011L

1. **GENERAL COURSE INFORMATION:** Topic Outline.

* The history of evolutionary theory and the scientific evidence supporting the theory of evolution
* The processes involved in micro- and macro-evolutions including gradualism and punctuated evolution
* The classification of organisms and its evolutionary significance
* The geographical distribution of organisms, the regional diversity of organisms and their evolutionary significance
* Adaptations of organisms in aquatic and terrestrial environments
* Behavior of living organisms
* Ecology of populations and communities
* Ecosystems and biome

1. **All courses at Florida SouthWestern State College contribute to the general education program by meeting one or more of the following general education competencies:**

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

**A.**  **General Education Competencies and Course Outcomes**

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

General Education Competency: **Communicate**

* Analyze and interpret the theory of natural selection and its role in evolution.
* Compare pre-zygotic and post-zygotic barriers to successful reproduction and examine their role in allopatric and sympatric modes of speciation.
* Calculate and analyze resource use by human populations and identify methods for lowering individual ecological footprints.

Course Outcomes or Objectives Supporting the General Education Competency Selected: **Think**

* Evaluate the fossil, biogeographic, and genetic evidence that supports the theory of evolution.
* Examine the structure and characteristics of viruses and compare the differences and similarities between viruses and living cells.

**B.** **All Course Objectives/Standards**

* Describe the historical development of the evolutionary theory.
* Analyze and interpret the theory of natural selection and its role in evolution.
* Calculate evolutionary changes in populations using the Hardy-Weinberg equilibrium theorem.
* Interpret the processes of microevolution and compare various methods for change in gene frequency.
* Evaluate the fossil, biogeographic, and genetic evidence that supports the theory of evolution.
* Compare prezygotic and postzygotic barriers to successful reproduction and examine their role in allopatric and sympatric modes of speciation.
* Analyze hierarchical classification and its relation to evolutionary relationships among species.
* Appraise the most recent theory of the history of life on Earth.
* Examine the structure and characteristics of viruses and compare the differences and similarities between viruses and living cells.
* Differentiate between the heterotrophic bacteria, cyanobacteria, and the archaea.
* Examine the common algae, protozoa, and other protists and appraise their classification status.
* Review the main groups of the plant kingdom and identify adaptations involved in their evolutionary movement from an aquatic to a terrestrial lifestyle.
* Compare similarities and differences in the alternation of generations life cycles among the main groups of the plant kingdom.
* Summarize the characteristics of the various members of the fungi kingdom.
* Evaluate the process of embryonic development in animals.
* Examine characteristics of the major animal phyla and identify the evolutionary adaptations necessary for the transition from water to land in the Chordates.
* Examine characteristics of the major animal phyla and identify the evolutionary adaptations necessary for the transition from water to land in the Chordates.
* Compare the interplay between innate behavior and learned behavior.
* Analyze population growth patterns and the factors that influence them.
* Analyze and interpret the structure of ecosystems.
* Describe the relationships and interactions among biotic and abiotic ecosystem components.
* Analyze and interpret the roles of predation, competition and cooperation in maintaining community-level structure and function.
* Evaluate the role that ocean currents, rotation of the Earth, and seasonal changes have on the major biomes on Earth.
* Analyze and appraise the similarities and differences between and among the major ecosystems and biomes.
* Examine the threats to biodiversity and the current methods of ecological conservation.
* Calculate and analyze resource use by human populations and identify methods for lowering individual ecological footprints.

1. **DISTRICT-WIDE POLICIES:**

**Programs for Students with Disabilities**

Florida SouthWestern State College, in accordance with the Americans with Disabilities Act and the College’s guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <http://www.fsw.edu/adaptiveservices>.

**REPORTING TITLE IX VIOLATIONS**

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct.  Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at [equity@fsw.edu](mailto:equity@fsw.edu).  Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online.  Additional information and resources can be found on the College’s website at <http://www.fsw.edu/sexualassault>.

1. **REQUIREMENTS FOR THE STUDENTS:**

List specific course assessments such as class participation, tests, homework assignments, make-up procedures, etc.

1. **ATTENDANCE POLICY:**

The professor’s specific policy concerning absence. (The College policy on attendance is in the Catalog, and defers to the professor.)

1. **GRADING POLICY:**

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

90 - 100 = A

80 - 89 = B

70 - 79 = C

60 - 69 = D

Below 60 = F

(Note: The “incomplete” grade [“I”] should be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.” Refer to the policy on “incomplete grades.)

1. **REQUIRED COURSE MATERIALS:**

(In correct bibliographic format.)

1. **RESERVED MATERIALS FOR THE COURSE:**

Other special learning resources.

1. **CLASS SCHEDULE:**

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

1. **ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:**

(Which would be useful to the students in the class.)