Miami-Dade COMMUNITY COLLEGE

06-09-05

Common Course Number: BSC - 2250

Course Title: Natural History of South Florida

Catalog Course Description: BSC 2250 is about South Florida's related ecosystems, of what they are, and how they work. The course is designed to provide an understanding of the physical geography and biogeography of South Florida in space and time. Students are challenged in this course to study and think about the fate of South Florida's environments.

Credit Hours Breakdown: 3 lecture hours

Prerequisite: None

Co requisite: None

Course Competencies:

Competency 1: The student will become familiar with the physical geography of South Florida.

Upon successful completion of this course, the student will demonstrate knowledge of South Florida's physical geography:

A. Describing and/or illustrating Geologic Time.

B. Describing Plate Tectonic Theory and evidence that does not fit the theory.

C. Describing and/or illustrating South Florida's Climate.

D. Describing and/or illustrating effects of sea level changes in South Florida.

Competency 2: The student will become familiar with the basic principles of ecology.

Upon successful completion of this course, the student will demonstrate knowledge of the nature of ecology:

A. Defining basic vocabulary terms of ecology.

B. Explaining the basic structure and function of South Florida ecosystems.

Competency 3: The student will become familiar with South Florida freshwater marshes: water, weather, and fire.

Upon successful completion of this course, the student will demonstrate knowledge of freshwater marshes:

A. Describing the structure of a marsh vegetation and plant communities: saw grass marshes, wet prairies, sloughs, ponds (alligator holes), and creeks.

B. Describe the periphyton.

C. Describe marsh soils.

D. Discussing water quality issues.

E. Discussing weather and fire.

Competency 4: The student will become familiar with South Florida's wetland tree islands.

Upon successful completion of this course, the student will demonstrate knowledge of wetland tree islands:

A. Describe bay heads.

B. Describe willows and willow heads.

C. Describe pond apple/custard apple.

D. Describe cypress and cypress heads.

E. Explain the role and integrity of tree islands.

Competency 5: The student will become familiar with South Florida's tropical hardwood hammocks.

Upon successful completion of this course, the student will demonstrate knowledge of tropical hardwood hammocks:

A. Explaining the hammock environment.

B. Describe tree height.

C. Describe the strangler fig.

D. Discussing hammocks and fire.

E. Discussing unpleasant aspects of hammocks.

F. Discussing hammocks and wild fires.

Competency 6: The student will become familiar with South Florida's pineland.

Upon successful completion of this course, the student will demonstrate knowledge of pinelands:

A. Discussing pinelands and fire.

B. Describing endemic plants

C. Describing rocky pinelands.

Competency 7: The student will become familiar with South Florida's mangrove swamps.

Upon successful completion of this course, the student will demonstrate knowledge of mangrove swamps:

A. Describing each: black mangrove, white mangrove, buttonwood, and the buttonwood embankment.

B. Describing mangrove swamps and Everglades wildlife.

C. Describing mangrove swamps and marine fisheries.

D. Describing mangrove swamps and soil building.

E. Describing mangrove swamps and hypersalinity.

F. Explaining mangrove reproduction and dispersal.

G. Discussing legal protection of mangroves.

H. Discussing mangroves and mosquitoes issues.

I. Visiting a mangrove swamp.

Competency 8: The student will become familiar with South Florida's coastal lowland vegetation.

Upon successful completion of this course, the student will demonstrate knowledge of coastal lowland vegetation:

A. Discussing impacts of hurricane Andrew on the Everglades.

B. Analyzing hurricane frequency and environmental impact in southern Florida.

C. Discussing impacts of hurricane Donna.

D. Describing coastal lowland vegetation.

E. Discussing hurricanes and glacial cycles.

Competency 9: The student will become familiar with South Florida's coastal estuarine and marine waters.

Upon successful completion of this course, the student will demonstrate knowledge of coastal estuarine and marine waters:

A. Describe the geology of Florida Bay.

B. Describe the Gulf of Mexico.

C. Describe oysters and mangrove swamps.

Competency 10: The student will become familiar with the origins of South Florida's flora and fauna.

Upon successful completion of this course, the student will demonstrate knowledge of the origins of South Florida's flora and fauna:

A. Comparing tropical versus subtropical.

B. Describing the elements of the flora.

C. Discussing the origin of the tropical flora: trees, epiphytes, bromeliads, orchids, ferns, marine flora, hurricanes and dispersal, proximity and dispersal.

D. Discussing the origin of the temperate flora: trees and marsh vegetation.

E. Discussing the origin of the fauna.

Competency 11: The student will become familiar with South Florida's invertebrates.

Upon successful completion of this course, the student will demonstrate knowledge of the invertebrates:

A. Describe marine invertebrates.

B. Describe freshwater invertebrates: Florida apple snail, Seminole rams-horn, crayfish, riverine, grass shrimp, and aquatic insects.

C. Describe terrestrial invertebrates: spiders, insects, butterflies, and the Florida tree snail.

D. Discussing the importance of invertebrates.

Competency 12: The student will become familiar with South Florida's freshwater fishes.

Upon successful completion of this course, the student will demonstrate knowledge of freshwater fishes:

A. Comparing primary, secondary, and peripheral freshwater fishes.

B. Describing the Florida gar.

C. Discussing introduced fishes.

E. Discussing freshwater fishes and the food chain.

F. Discussing the fisherman's perspective.

Competency 13: The student will become familiar with South Florida's marine and estuarine fishes.

Upon successful completion of this course, the student will demonstrate knowledge of marine and estuarine fishes:

A. Comparing diversity of marine and estuarine fishes.

B. Describing the game fishes.

C. Describing the mullet.

E. Discussing the importance of marine and estuarine fishes.

Competency 14: The student will become familiar with South Florida's amphibians.

Upon successful completion of this course, the student will demonstrate knowledge of amphibians:

A. Discussing the importance of amphibians.

Competency 15: The student will become familiar with South Florida's reptiles.

Upon successful completion of this course, the student will demonstrate knowledge of reptiles:

A. Describing the ecology of the American alligator.

B. Describing the ecology of the American crocodile.

Competency 16: The student will become familiar with South Florida's mammals.

Upon successful completion of this course, the student will demonstrate knowledge of mammals:

A. Describing native terrestrial mammals.

B. Describing the ecology of the Florida panther.

C. Describing the ecology of the marine mammals.

Competency 17: The student will become familiar with South Florida's birds.

Upon successful completion of this course, the student will demonstrate knowledge of birds:

A. Describing the ecology of the water birds.

B. Describing the ecology of the land birds.

C. Discussing the feeding behavior of wading birds.

D. Discussing wading bird rookeries.

Competency 18: The student will become familiar with South Florida's environmental impacts.

Upon successful completion of this course, the student will demonstrate knowledge of environmental impacts:

A. Discussion of man and the Everglades.

B. Discussion of man and Florida Bay.

C. Discussing solution to the problems.

D. Discussing the next few decades.

E. Discussing the long-term view.