

*** Complete the following only if course is seeking general education status ***

GENERAL EDUCATION Competencies and Skills *:

In the box to the right of the Competency/Skill, enter all specific **student learning outcome** unit numbers, as indicated in the course outline (i.e. 1.1, 2.7, 4.2, 4.0 and 5.12) that apply.

Course must include <u>all</u> of the following:	
1. Read with critical comprehension**	1.0
2. Write clearly and coherently**	1.0
3. Demonstrate literacy as appropriate within a given discipline** a) Information b) Technology c) Workplace d) Cultural e) Quantitative f) Scientific g) Environmental	a) 1.2; 7.5 e) 2.4; 3.2; 3.3; 4.2; 4.3; 4.8; 6.5; 9.4 f) 2.0 – 10.0 g) 2.0 – 10.0
4. Apply problem solving skills or methods to make informed decisions in a variety of contexts**	3.4; 3.5; 9.1; 10.2; 10.3; 10.4; 10.5
Course must include at least <u>one</u> of the following:	
5. Differentiate between ethical and unethical behavior	3.4; 3.5; 5.5; 10.2
6. Demonstrate an understanding of the physical, biological, and social environments and how individual behaviors impact this complex system.	3.4; 3.5; 4.4; 4.9; 5.5; 5.6; 6.7; 7.5; 7.8; 8.5; 9.6; 10.0
7. Demonstrate an understanding of and appreciation for human diversities and commonalities.	
8. Speak and listen effectively.	

**General Education Competencies and Skills endorsed by 2010-2011 General Education Task Force*

****Required Competencies**

1) Read with critical comprehension.

The student will be introduced to the basic texts, concepts, vocabulary, and methods necessary for developing an understanding of the discipline and meeting the required benchmarks as stated in the course outline.

2) Write clearly and coherently.

The student will demonstrate an understanding and mastery of subject matter in a variety of ways, including writing. Writing activities may include both graded and ungraded essays, short answer quizzes, summaries, reactions, journals, and various other reports.

3) Demonstrate and apply literacy across all the disciplines (indicate which ones apply).

- a) **Information literacy** means understanding how to locate needed information, using the appropriate technology for the task, managing and evaluating the extracted information and using it effectively and ethically.
- b) **Technology literacy** is the ability to responsibly and effectively use appropriate technology to access, manage, integrate, or create information, and/or use technology to accomplish a given task.
- c) **Workplace literacy** is having the appropriate knowledge and skills to communicate and work with others effectively and perform job duties, whether it is through the use of computers and/or other technology.
- d) **Cultural literacy** is recognizing, understanding, and appreciating the similarities and differences between one’s own culture and the cultures of others through a study of the arts, customs, beliefs, values, and history that define a culture.
- e) **Quantitative literacy** is having the ability to formulate, solve and interpret mathematical/statistical operations and graphical/tabular representations to make informed decisions.

- f) **Scientific literacy** means understanding the methodology and application of the scientific process, the physical and biological worlds, and recognizing that scientific knowledge is continuously updated or revised as new information is discovered.
- g) **Environmental literacy** is creating a context within which environmental issues can be viewed, imparting knowledge to enhance one's ability to analyze the issues, make the connections between humans' decisions and actions and the challenges facing the environment, and instilling the desire to sustain the environment through ethical practices in both one's professional and personal lives.

4. Apply problem-solving skills or methods to make informed decisions in a variety of contexts.

The student will use acquired skills or methods to recognize, analyze, adapt, and apply critical thinking to solve problems and make informed decisions.

EVALUATION:

In the box to the right of the Methods of Assessment, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 4.0, 4.2 and 5.12) that apply.

1. Portfolio	10.0
2. Short essays	2.0 - 9.0
3. Research Papers	1.0 - 10.0
4. Group projects	2.0, 3.0, 4.0, 6.0, 7.0, 9.0
5. Discussions (In class and online)	2.0 - 10.0
6. Multiple Choice tests	1.0 - 10.0
7. Presentations	2.0 - 10.0
8. Service Learning Projects	9.0 - 10.0
9. Quizzes (pop, announced, etc.)	2.0 - 10.0
10. Take-home tests	1.0 - 10.0
11. Summaries, critiques, and analyses	1.0 - 10.0
12. Reaction papers	
13. Surveys	3.0; 9.0 - 10.0
14. Performance	
15. Short answer tests	1.0 - 10.0
16. Classroom debates and colloquia	
17. Blogs, wikis, web pages	1.0 - 10.0
18. Other (Please explain)	

Common Course Number: EVR1009

Unit 1: Reading and Writing in the Biological Sciences

General Outcome:

- 1.0** The student shall be able to clearly communicate in writing information derived from course related readings the major concepts and themes in the environmental sciences.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Demonstrate in writing the ability to analyze, evaluate, compare, and extract data relevant to environmental science from course related readings.
- 1.2 Evaluate the validity of information from a variety of sources, including but not limited to such sources as electronic, print sources, and data bases.
- 1.3 Demonstrate using diagrams, drawings, outlines, concept maps, and/or other methods connections among concepts in environmental science.
- 1.4 Demonstrate the ability to use the appropriate technology to carry out course requirements.

Common Course Number: EVR1009**Unit 2: Physical Factors and the Environment****General Outcome:**

- 2.0 The students shall be able to demonstrate an understanding of global geologic, atmospheric, and oceanic trends and evaluate their relationship to the environment.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 2.1 Describe the earth's structure.
- 2.2 Examine the characteristics of plate tectonic settings and plate movement.
- 2.3 Describe characteristics of the troposphere and stratosphere.
- 2.4 Illustrate the Coriolis Effect on global atmospheric belts.
- 2.5 Explain the generation and movement of air masses.
- 2.6 Compare the patterns of major ocean surface and subsurface currents.

Common Course Number: EVR1009

Unit 3: Water in Natural Systems

General Outcome:

- 3.0 The students shall be able to describe and diagram the hydrologic cycle, analyze the characteristics of water and assess the finite, recycled nature of the world's water in relationship to Florida's water budget.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1 Assess the importance of water to life.
- 3.2 Diagram the hydrologic cycle (closed system) showing the various compartments and processes of the cycle.
- 3.3 Demonstrate the flow of water through natural systems in Florida. (Open system.)
- 3.4 Evaluate the importance of ground water to Florida.
- 3.5 Recognize and evaluate the impact of humans upon managing the flow of water through Florida.

Unit 4: Ecosystems**General Outcome:**

4.0 The students shall be able to categorize the ecosystems and the food and energy flow within them.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 4.1 Compare and contrast food chains, food webs, and energy flow through ecosystems.
- 4.2 Describe and quantify trophic levels in ecosystems.
- 4.3 Understand and quantify the concepts underlying population dynamics.
- 4.4 Explain predator-prey relationships and the impact of disruptions on these relationships.
- 4.5 Compare and contrast the major biomes and aquatic ecosystems of the world.
- 4.6 Describe the special features and importance of wetlands ecosystems.
- 4.7 Analyze the concept of succession.
- 4.8 Calculate residence time of pesticides and other toxins introduced into the environment.
- 4.9 Describe and diagram biogeochemical cycles such as carbon, nitrogen, and phosphorus and how they have been impacted by humans.

Common Course Number: EVR1009

Unit 5: Geology of Florida**General Outcome:**

- 5.0 The students shall be able to categorize the various physiographic regions of Florida and explain the underlying geologic processes and their economic importance as non renewable resources.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 5.1 Describe the formation and characteristics of igneous, sedimentary and metamorphic rocks.
- 5.2 Explain the effect of different methods of weathering on rocks.
- 5.3 Evaluate the impact of underlying geologic formations on the surface.
- 5.4 Explain the origin of minerals such as carbonate and phosphate.
- 5.5 Assess the uses of minerals and other nonrenewable resources mined in Florida.
- 5.6 Determine the importance of soil to ecosystems and their distribution.

Common Course Number: EVR1009

Unit 6: Weather and the Environment**General Outcome:**

- 6.0 The students shall be able to explain the fundamentals of meteorology and relate these fundamentals to the weather trends in Florida.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 6.1 Analyze the different factors involved in describing weather.
- 6.2 Differentiate between the characteristics of different types of weather fronts.
- 6.3 Evaluate influences on Florida's weather and major weather trends in Florida.
- 6.4 Describe conditions which promote hurricane formation and explain the heat engine dynamics of a hurricane.
- 6.5 Interpret the Saffir-Simpson storm classification scheme and give examples of historical storms which have struck Florida.
- 6.6 Determine methods of adaptation within native species in response to Florida's weather.
- 6.7 Describe the effect of human activities on global warming and solutions that will stabilize the earth's climate.

Common Course Number: EVR1009

Unit 7: Ecosystems of Florida**General Outcome:**

- 7.0 The students shall be able to examine the interaction between the abiotic and biotic factors within different ecosystems of Florida.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 7.1 Describe the geological and other factors that affect ecosystem distribution in Florida.
- 7.2 Examine the characteristics of low energy coastal ecosystems such as mangrove swamps, salt marshes and estuaries and their importance to marine fisheries.
- 7.3 Describe the high energy beach ecosystem, including forces that shape coastlines such as longshore drift; explain the importance of vegetation in stabilizing this dynamic ecosystem and how human activities have contributed to beach erosion.
- 7.4 Compare and contrast the characteristics of wetland ecosystems such as freshwater marshes, cypress swamps, and southern hardwood swamps.
- 7.5 Describe the characteristics of the Everglades and how humans have impacted water distribution, timing, quality and quantity; ~~list~~ Explain the components of CERP and the Kissimmee River Restoration Project.
- 7.6 Compare and contrast the characteristics of upland ecosystems such as slash pine forests, sandhill community, scrub, prairie, and hardwood hammocks.
- 7.7 Analyze the role of fire in shaping Florida ecosystems.
- 7.8 Assess the impact of human activities on Florida ecosystems.

Common Course Number: EVR1009

Unit 8: The Ocean**General Outcome:**

- 8.0 The students shall be able to describe the various physical components of the ocean and the biological interaction with the physical marine environment.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 8.1 Recognize the various physical zones of the ocean including benthic, littoral and pelagic and the types of organisms found in each.
- 8.2 Compare and contrast the diversity of life on a coral reef.
- 8.3 Explain how the health of coral reefs is influenced by the adjacent coastal and inland ecosystems.
- 8.4 Distinguish among the various types of reefs such as barrier, fringe and patch.
- 8.5 Interpret the impact of pollution, global warming, over-fishing and other human activities on the marine environment and suggest possible solutions.

Common Course Number: EVR1009

Unit 9: Energy and the Environment

General Outcome:

- 9.0 The students shall be able to describe the law of conservation of matter and the two laws of thermodynamics; compare renewable and nonrenewable energy and compare the advantages and environmental costs of each.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 9.1 Apply the Law of Conservation of Matter and the First and Second Laws of Thermodynamics to analyze current environmental problems such as pollution and energy conservation.
- 9.2 Distinguish between potential and kinetic energy.
- 9.3 Describe the differences between renewable and nonrenewable sources of energy, and recognize examples of each.
- 9.4 Calculate how long non-renewable fuels will last under a variety of different consumption rates.
- 9.5 Describe environmental consequences caused by exploiting different forms of energy.
- 9.6 Discuss how transition to renewable forms of energy will help reduce the threat of global warming

Common Course Number: EVR1009

Unit 10: Sustainable Solutions**General Outcome:**

- 10.0** The students shall be able to argue the actions needed to create a sustainable society and analyze ways to apply principles of sustainable thinking to solve environmental problems.

Specific Measurable Learning Outcomes:**Upon successful completion of this unit, the student shall be able to:**

- 10.1 Define sustainable development and recognize the current lifestyle of North Americans is not sustainable.
- 10.2 Analyze the interrelationship between the three components of a sustainable society: ecological integrity, social justice, and economic prosperity.
- 10.3 Demonstrate how the components of sustainable thinking, including basing decisions on what is best in the long term, utilizing interdisciplinary analysis, mirroring nature's solutions, implementing prevention rather than remediation, and systems analysis, may be applied to daily decisions.
- 10.4 Apply the components of sustainable thinking to the analysis of real world problems such as loss of biodiversity, global warming, deforestation and pollution; implement solutions to local problems.
- 10.5 Assess the role of individuals in creating a sustainable society.