

## GE CRITERIA APPROVAL FORM

Course Number and Title: **BIOL 335. The Biosphere (3)**

Faculty Member(s) Proposing Course: Nancy Mozingo, Amy Denton and Simone Aloisio

**Indicate which of the following categories would be satisfied by this course by marking an "X" on the appropriate lines.**

Courses may be placed in up to two GE categories as appropriate. Upper Division Interdisciplinary GE courses may be placed in two categories plus the UDIGE category.

	A1: Oral Communication
	A2: English Writing
	A3: Critical Thinking
	B1: Physical Sciences
X	B2: Life Sciences
	B3: Mathematics
	B4: Computers and Technology
	C1: Fine Arts
	C2: Literature
	C3: Languages & Cultures
	D: Social Perspectives
	E: Human Psychological & Physiological Perspectives
x	Upper Division Interdisciplinary GE

Lab Included? Yes \_\_\_\_\_ No x\_\_\_\_\_

Please provide a brief explanation of how the proposed course meets each of the criteria for the selected General Education categories.

1. promote the understanding and appreciation of the methodologies of math or science as investigative tools and the limitations of mathematical or scientific endeavors.

This course will describe methods used to explain the early history of life on the planet, and atmospheric and climate change. These methods include examination of the fossil record, prebiotic simulation experiments which attempt to recreate the conditions that existed on prebiotic earth, DNA sequence comparisons between living organisms/organelles (to provide support for the endosymbiotic theory) and atmospheric sampling techniques.

2. present mathematical or scientific knowledge in a historical perspective and the influences of math or science on the development of world civilizations, both past and present

This course will explore the history of early life on earth beginning with the first cells, which arose approximately 3.8 billion years ago, to the widespread appearance of multicellular animals during the Cambrian explosion. Hallmarks in the march towards multicellular life include the appearance of photosynthetic organisms, the origin of eucaryotic cells and the appearance of Ediacarans.

This course will also examine the human impact on the biosphere including topics such as air and water pollution, climate change and over-population.

3. apply inductive and deductive reasoning processes and explore fallacies and misconceptions in the mathematical or scientific areas.

This course will expose students to inductive logic by explaining how evidence supports the theory of evolution by natural selection.

4. (B-2) present the principles and concepts that form the foundation of living systems.

This course will explore the evolution of life on earth. Topics to be covered include fundamental biological principles including the structure and function of prokaryotic and eucaryotic cells, how eucaryotic and prokaryotic cells arose, cell division and its origins and the evolution of multicellular life on earth.

5. (Upper division interdisciplinary) Emphasize interdisciplinarity by integrating content, ideas, and approaches from two or more disciplines

The study of the earth's biosphere is an interdisciplinary endeavor involving biology, chemistry, physics and geology. In this course, the interplay of these fields will be explored. For example, to explain the origin of life in the biosphere, students will first learn the chemical building blocks for life and the chemical and atmospheric conditions that existed on prebiotic earth. Also, students will learn that the appearance of photosynthetic organisms on the early earth added oxygen to the atmosphere which forever changed the composition of the atmosphere and consequently altered the course of evolution. Evidence from the fossil record which supports the history of early life on the planet will also be examined.

6. (Upper division interdisciplinary) Include substantive written work\* consisting of in-class writing as well as outside class writing of revised prose.

Students will be required to write two term papers and lecture exams will include short answer and essay-style questions.