Texas A&M University  
Core Curriculum  
Initial Request for a Course Addition to the Fall 2014 Core Curriculum

Foundational Component Area: Life and Physical Sciences

In the box below, describe how this course meets the Foundational Component Area description for Life and Physical Sciences. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

How does the proposed course specifically address the Foundational Component Area definition above?

**GEOG 213** is a laboratory course focused on describing and explaining the earth’s surface. We group the surface features into three broad categories (climates, ecosystems, and landforms) that correspond with the three major subdisciplines of contemporary physical geography, namely, climatology, biogeography, and geomorphology. In this course we describe the earth’s surface and seek a conceptual understanding of how surface features develop. We use a problem-based approach, as science is at its core a problem-centered endeavor. Students use graphs, maps, quantitative expressions, and conceptual models to understand and predict how earth surface systems operate. Students also gain an understanding of how earth systems (atmosphere, hydrosphere, biosphere, lithosphere) interact to form the landscapes we observe, and how human societies interact with these natural systems. Human interactions with their environments is a fundamental theme in geography.

**Core Objectives**

Describe how the proposed course develops the required core objectives below by indicating how each learning objective will be addressed, what specific strategies will be used for each objective and how student learning of each objective will be evaluated.

**Critical Thinking (to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information):**

**GEOG 213** is a one-hour laboratory course in physical geography. Students complete laboratory assignments that entail learning fundamental concepts and applying those concepts to various scenarios. Problem-solving lies at the heart of scientific inquiry; by using a problem-based approach the students gain general insights about how science is conducted, in addition to specific insights about concepts in physical geography. Laboratory activities require problem-solving, creative thinking, analysis, synthesis, concepts, etc.

**Communication (to include effective development, interpretation and expression of ideas through written, oral and visual communication):**

Physical geography is a visual discipline, as it deals with maps and other representations of the earth’s surface (e.g., satellite images, photographs). It also entails graphical characterizations of processes and patterns. Through the laboratory exercises the students learn to interpret and synthesize the information contained in these characterizations. They also conduct their own mapping and graphing, and communicate their interpretations in writing.

**Empirical and Quantitative Skills (to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions):**

Empirical observation and quantification lie at the heart of the laboratory experience. Students grapple with linking conceptual models to empirical facts, whether they are conducting climate observations in the field, analyzing maps in the laboratory, or conducting basic statistical analyses.
Teamwork (to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal):

Teamwork is integrated into many of the laboratory assignments through group exercises, wherein team members collaborate to obtain the data required for analyses relevant to the problems they are asked to solve. For these exercises, the role of each team member is integral to obtaining a complete dataset and/or completing the analyses. Students learn the role and limitations of empirical observations as they relate to problem-solving and to reconciling different points of view about physical geography topics. They also identify and report areas of uncertainty that prevent consensus. The contributions of each student to the process will be assessed by the observations of the Teaching Assistant, by peer review, and by the student’s own reflections.

Please be aware that instructors should be prepared to submit samples/examples of student work as part of the future course recertification process.