Request for Courses in the Core Curriculum

Originating Department or College: Department of Biology and Chemistry, College of Arts and Sciences

Person Making Request: Kenneth J. Tobin

Telephone: (956) 326-2417 E-mail: ktobin@tamiu.edu

Course Number and Title: EPSC 2101 Atmospheric Science Lab

Please attach in separate documents:

___ Completed Catalog Add/Change Form

_X Syllabus

List the student learning outcomes for the course (Statements of what students will know and/or be able to do as a result of taking this course. See appended hints for constructing these statements.)

Student Learning Objectives: Upon successful completion of this course, students will be able to:

1. Use critical thinking and the scientific method to examine questions relating to atmospheric science.
2. Collaborate effectively on a research project.
3. Communicate scientific information both verbally and through written reports.
4. Define and discuss fundamental earth science principles.
5. Identify and discuss the characteristics of storm systems.
6. Integrate an understanding of how the atmosphere system controls the earth's weather.
7. Describe and distinguish the development of clouds and precipitation systems.

Core-Curriculum Learning Outcomes:

1. Critical Thinking: includes creative thinking, innovation, inquiry and analysis, evaluation, and synthesis of information. (SLOs: 1, 4, 5)
2. Communication Skills: Students will demonstrate their ability to communicate effectively by using written communication. (SLOs: 3, 4, 5)
3. Empirical and Quantitative Skills: includes the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. (SLOs: 4,6)
4. Teamwork: includes the ability to work effectively with others to support a shared goal. (SLOs: 2)

Component Area for which the course is being proposed (check one):

___ Communication
___ Mathematics
___ Language, Philosophy, & Culture
___ Creative Arts
_X_ Life & Physical Sciences
___ American History
___ Government/Political Science
___ Social & Behavioral Science
___ Component Area Option

Competency areas addressed by the course (refer to the appended chart for competencies that are required and optional in each component area):

_X_ Critical Thinking
_X__ Communication Skills
_X_Written Communication
___ Oral Communication
___ Visual Communication
_ _ Teamwork
___ Personal Responsibility
___ Social Responsibility

_X_ Empirical & Quantitative Skills

Because we will be assessing student learning outcomes across multiple core courses, assessment assigned in your course must include assessment of the core competencies. For each competency checked above, indicate the specific course assignment(s) which, when completed by students, will provide evidence of the competency. Provide detailed information, such as copies of the paper or project assignment, copies of individual test items, etc. A single assignment may be used to provide data for multiple competencies.

Critical Thinking:
During the "Metrogram" lab, students will need to use their critical thinking skills to interpret the weather data graphed for a single station and to extrapolate previous and future weather conditions, defending their conclusions. A critical thinking rubric with domains for creative thinking, depth of inquiry, evaluation of importance and synthesis of information can be scored by the instructor from the lab report, or the lab report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Communication Skills:
Upon the completion of the "Metrogram" lab each student will write a 3-4 page lab report addressing critical thinking questions concerning their interpretation of the graphed data and their predictions of weather conditions in the surrounding area and for that area in the future. The instructor can score the written lab report for organization, focus, style and grammar using a modified WIN rubric, or the report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Empirical & Quantitative Skills:
During the "Metrogram" lab, students will need to observe the graphed weather data for a given station and use that date to calculate a variety of variables including daily high and low temperatures, dew point, humidity, changes in atmospheric pressure and accumulated precipitation. The instructor can assess the logical reasoning behind the calculations and extrapolations, or the written lab report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Teamwork: N/A

Personal Responsibility: N/A

Social Responsibility: N/A

Will the syllabus vary across multiple sections of the course? ___ Yes _X_ No
If *yes*, list the assignments that will be constant across the sections:

Inclusion in the core is contingent upon the course being offered and taught at least once every other academic year. Courses will be reviewed for renewal every five (5) years.

The department understands that instructors will be expected to provide student work and to participate in university-wide assessments of student work. This could include, but may not be limited to, designing instruments such as rubrics, and scoring work by students in this or other courses. In addition, instructors of core courses may be asked to include brief assessment activities in their courses.

Reviewed and approved by the Core Curriculum Committee on February 15, 2013