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?

**BESC 204: Molds and Mushrooms:** The Impact of Fungi on Society and the Environment surveys classification and diversity of fungi and highlight environmental and societal issues impacted by fungi. Through interaction with media, readings, lectures and class discussion students review and evaluate data and observable facts related to science-based studies of fungi and their role in the environment, with particular emphasis on the role of the scientific method in interpreting current data about each issue. A major theme will be to examine environmental and food safety issues in the context of these studies, with particular emphasis on the role of the scientific method in interpreting current data about each issue. For example, students will critically analyze the hypothesis that indoor toxic molds are not directly associated with sick building syndrome. Though some molds found in built environments produce toxins detrimental to human health, the current position of the CDC is that ingress of the toxic molds into the human respiratory system is not indicated.

**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):**

Learning Outcomes:
You will apply information learned through readings and other media posted within the learning management system.
You will comprehend the interdisciplinary concepts integral to environmental science and fungal biology.
You will be able to explain the effect of specific fungal metabolites on the environment and society.
You will assess current perceptions of indoor toxic fungi.

Assessment:
Students will take four unit exams to assess their comprehension of the reading and lectures. Students will write a position paper on the health risks of indoor molds. Instructor and group peer review of the position papers will enhance students comprehension and critical thinking of the topic. Use of the scientific method through hypothesis testing will be utilized to critically assess current data on the topic using instructor evaluation of the group project. Furthermore, creative and critical thinking will be assessed.

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

Learning Outcomes:
Recognize the impact of globalization on the environment and dissemination of pathogens of plants and animals.
Texas A&M University

Core Curriculum

Initial Request for a Course Addition to the Fall 2014 Core Curriculum

Participate in class discussions and actively listen to student presentations
Work effectively in a group to create a position paper on toxic molds
Work effectively in a group to create a multimedia presentation on a topic of current interest in environmental fungal biology

Assessment:
Students will work in groups to create a position paper on indoor toxic molds, and to create a multimedia presentations that highlights a topic of current interest in environmental fungal biology. Assessment of these team projects includes use of a standard metric by the instructor and peer review to address the quality of the end product and also the quality of individual participation in its creation.

Students will work in groups to create multimedia presentations that highlight current issues at the interface of fungal biology and environmental biology. These assignments require students to practice oral, written and visual communication skills. Effective group work will require oral negotiation among team members and the research papers, websites and news articles themselves will require effective narration. Students will work together to create the multimedia project including written, visual and oral outputs. The multimedia projects will be evaluated based on effective use of visual communication to include: graphs, photographs, animation, video clips or simulations as appropriate. Students will be expected incorporate data in their presentations to effectively convey the issues specific to the country. Assessment of the assignments includes the quality of the end product (based on a rubric provided, used by both the instructor and members of the class via peer review) and also the quality of individual participation in its creation (based on within group reflection on peer performance).

Student participation in class discussions also constitute oral communication. To deal with issues of class size and introvert/extravert inherent differences these discussions will be staged in a variety of different contexts (e.g. spontaneous responses to questions during lecture, think-pair-share arrangements, small groups with prompts provided prior to class) to provide ample opportunity for students to perform. Participation will involve subjective assessment by the instructor of the degree to which students contribute meaningfully to class discussion as well as evidence of active listening.

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

Learning Outcomes:
Apply information learned through readings and other media
Analyze current data on indoor toxic molds and develop an informed position while working in a team

Assessment:
Students will take four unit exams to assess their comprehension of the reading and other media. Students will write a position paper on the health risks of indoor molds and will create a multimedia project addressing current issues at the interface of fungal biology and environmental studies.
Assessment of group projects will be by the instructor and group peer review, and is designed to encourage students to reflect on the relationship between their worldview and the concepts in the course. Thus grading will be based on both effective communication (see communication) and also their critical evaluation of observable facts and data presented in source material to include scientific writing, journalistic source and websites. It is important to note, students will be prompted to support their positions with appropriate reference to data and observable facts (e.g. graphs, figures, specific conclusions from studies, etc) and the degree of effectiveness of this will be part of the assessment.
Texas A&M University
Core Curriculum

*Initial Request for a Course Addition to the Fall 2014 Core Curriculum*

Teamwork (to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal):

**Learning Outcomes:**
- Participate in class discussions and actively listen to student presentations
- Work effectively in a group to create a position paper on toxic molds
- Work effectively in a group to create a multimedia presentation on a topic of current interest in environmental fungal biology

**Assessment:**
Students will work in groups to create a position paper on indoor toxic molds, and to create a multimedia presentations that highlight a topic of current interest to environmental fungal biology. Assessment of these team projects includes use of a standard metric by the instructor and peer review to address the quality of the end product and also the quality of individual participation in its creation (based on group reflection of peer performance).

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