

Request for Courses in the Core Curriculum

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

Person Making Request: James Cohen

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Course Number and Title: BIOL 1311 - Principles of Biology II

Please attach in separate documents:

Completed Catalog Add/Change Form

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 Outcomes: Upon successful completion of this course, students will be able to:

- apply critical thinking to examine primary literature concerning plant biology in order to effectively defend a conclusion.
- effectively discuss topics in economic botany and the multiple manners in which plants influence society, and vice versa.
- design an experiment using plants as a model system and analyze a data set to determine a conclusion.
- collaborate effectively on a research project and on a presentation of scientific results.
- describe the diversity of plant life on Earth, along with the structure and form of different groups of plants.
- describe the various manners in which plants reproduce.
- understand and describe basic plant physiology.

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

Communication

American History

Mathematics

Government/Political Science

Language, Philosophy, & Culture

Social & Behavioral Science

Creative Arts

Component Area Option

Life & Physical Sciences

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

Critical Thinking

Teamwork

Communication Skills

Personal Responsibility

Written Communication

Social Responsibility

Oral Communication

Visual Communication

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:

One of the discussion and written assignments is the "Potato assignment." After reading a chapter on the potato from the book *Botany of Desire*, students will write a 1 page essay assessing the methodologies used to grow potatoes from around the world, discussing which method they find most effective in terms of gross production and environmental impact, as well as the role of genetic modification in modern agriculture. 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 written essay or classroom discussion, or the written essay can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Communication Skills:

As part of the "Potato assignment," students will write a 1 page essay assessing the methodologies used to grow potatoes from around the world, discussing which method they find most effective in terms of gross production and environmental impact, as well as the role of genetic modification in modern agriculture. The instructor can score the written essay for organization, focus, style and grammar using a modified WIN rubric, or the written essay can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Empirical & Quantitative Skills:

One of the discussion and written assignments is the "Transpiration Project" during which the students measure the rates of transpiration under different environmental conditions. In addition to calculating the loss of water from each individual plant, the students calculate the mean, median, standard deviation and standard error for each environmental condition. They also conduct a t-test to examine whether or not there is a significant difference in water loss across environmental conditions. The instructor can assess the logical reasoning behind the calculations and the appropriateness of the statistical analysis, or the written project report can be up loaded for evaluation by the Core Curriculum Assessment Committee.

Teamwork:

During the "Transpiration Project," students work in groups of four to design the experiment, collect data and perform the analysis. The students will be given a survey to assess their participation on the project as well as an evaluation of their each member's contribution.

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 13, 2013.