Proposal for Changes to the General Education Category/Flag

Natural Sciences

(Write name of category or flag under consideration)

Date: 3/8/12

Signature: Given Harper and Gabe Spalding

(Name of Faculty member who prepared this proposal)

Names of faculty convened for proposal development:

Given Harper, Gabe Spalding -- convener
Tim Rettich -- CC representative
Zahia Drici -- Associate Dean of Curriculum
Joerg Tiede, Dave Bollivar, Jon Dey, Becky Roesner, Melinda Baur, Will Jaeckle, Brian Brennan, Ram Mohan, Seung-Hwan Lee, Andrew Shallue, Mark Liffiton, Brian Walter, Greg Pouch, Narendra Jaggi, Amanda Vicary, Joe Williams, Thushara Perera, Manori Perera, Pilar Mejia, Brad Sheese, Linda Kunce, Bob Hippensteele, Mignon Montpetit, Melvyn Jeter,
The Natural Sciences (2 course units)

Category Description:

Current Language:
Courses in this category help students develop the capacity for scientific literacy in preparation for responsible citizenship. Through laboratory and other learning experiences, students explore the methods by which scientists discover and formulate laws or principles that describe the behavior of nature in both living and non-living realms. Students also examine how scientific thinking applies to their own lives, and address the issues that scientific and technological advances bring to society. Two courses in this category are required, one of which deals primarily with scientific methods and laboratory techniques, and the other primarily with societal and ethical issues resulting from scientific techniques or findings. In addition, one of these courses must concern primarily life science concepts, and the other primarily physical science concepts.

Proposed Language:
Courses in this category help students develop the capacity for scientific literacy in preparation for responsible citizenship. Through laboratory and other learning experiences, students explore the methods by which scientists discover and formulate laws or principles that describe the behavior of nature in both living and non-living realms. Students also examine how scientific thinking applies to their own lives, and address the issues that scientific and technological advances bring to society. Two courses in this category are required, one of which deals substantively with scientific methods and laboratory techniques, and the other substantively with societal and ethical issues resulting from scientific techniques or findings. In addition, one of these courses must concern primarily life science concepts, and the other primarily physical science concepts.

Category Goals

Current Language:
In keeping with the overall goals of the General Education program, in particular the goal of, developing students’ capacities for critical thinking, and of developing students’ knowledge and understanding of the fundamental processes and relationships of nature and culture, and their evolution over time, all courses in the “Natural Sciences” category seek to:

Proposed Language:
No Changes.

Course Criteria

Current Language:
To achieve these goals, offerings at the 100- or 200-level in this category incorporate the following criteria in a balance appropriate to the course. In addition to meeting criteria 1-3 and 4a or 4b, courses proposed for credit at the 300- or 400-level require an appropriate research component, and involve a degree of critical thinking not normally found in lower level courses.

Proposed Language:
No Changes.

Current Language:
1. acquaint students with important life and/or physical science concepts, as well as the connections among different areas of science;

Proposed Language:
No Changes.

Current Language:
1. Courses focus on life science or physical science concepts, and will examine the ways in which one area of science contributes to and is affected by at least one other area.

Proposed Language:
No Changes.
<table>
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<tr>
<th>Current Language:</th>
<th>Proposed Language:</th>
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<td>2. develop students' understanding of the roles that critical analysis, abstract thinking, and imagination play in the scientific enterprise;</td>
<td>Current Language: 2. Courses consist of information originating from the use of the scientific method, and will engage students in the application or discussion of the scientific method. Proposed Language: No Changes.</td>
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<tr>
<td>Proposed Language: 2. develop students' understanding of the roles that critical analysis, abstract thinking, creativity, and imagination play in the scientific enterprise;</td>
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<td>Current Language: 3. introduce students to the usefulness of applying scientific concepts to the understanding of everyday experiences.</td>
<td>Proposed Language: No Changes.</td>
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<td>Proposed Language: No Changes.</td>
<td>CURRENT LANGUAGE: 3. Students are given examples of how scientific concepts learned in class can be used in less formal, non-academic settings. Proposed Language: No Changes.</td>
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<td>Current Language: 4a. (in scientific methods courses) develop students' understanding of how scientific problems are studied in a laboratory environment. OR 4b. (in scientific issues courses) improve understanding of scientific and technological issues which affect society and consider strengths and limitations of science in dealing with these issues.</td>
<td>Proposed Language: 4a. (in laboratory courses) develop students' understanding of how scientific problems are studied in a laboratory environment. OR 4b. (in scientific issues courses) improve understanding of scientific and technological issues which affect society and consider strengths and limitations of science in dealing with these issues.</td>
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<td>Proposed Language: 4a. (in laboratory courses) develop students' understanding of how scientific problems are studied in a laboratory environment. OR 4b. (in scientific issues courses) improve understanding of scientific and technological issues which affect society and consider strengths and limitations of science in dealing with these issues.</td>
<td>Proposed Language: No Changes.</td>
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<td>Proposed Language: 4a. Students attend a regularly scheduled lab that averages two hours per week of laboratory instruction over the course of the semester. At least twenty percent of the course grade is determined from this laboratory work. OR 4b. Students participate in discussions or assignments that require them to address the impact of scientific knowledge on society, and to evaluate the role that science and scientists play in these issues.</td>
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Rationale:

The faculty of the Natural Sciences Division had several discussions about the Natural Sciences General Education category. In late February members of the Division voted to keep the requirement as it is currently listed, and to make minor language changes meant to clarify terms that the faculty agreed needed improvement.