Request Form for General Education Certification:
Natural Science Requirement (Please include a syllabus)

Faculty Member(s):
Course Number:
Course Name:
This Course is currently Listed in the Undergraduate Catalog  Yes___  No____
(If your answer is “No”, please explain the status with the curriculum committee)________________________________________
____________________________________________________________________
Department of faculty member(s):________________________________________
Course Description:

I. Explain how the proposed course satisfies each of the following Approval Criteria for Natural Science:

1. Have as its primary purpose the study of fundamental principles of natural or physical science.

2. Provide experience in the practice of science as part of a coordinated 2-course sequence, both with accompanying labs to provide appropriate depth.

3. Apply physical/natural principles to analyze and solve problems.

4. Any proposed sequence should provide an appreciation for the impact science has on society.
II. Please provide an example of a signature assignment that the proposed course would use to enable assessment of each of the three natural science learning outcomes, using the evidence and grading rubric for the respective outcomes

Student Learning Outcome 1: Students apply physical/natural principles to analyze and solve problems. (List SLO 1 on syllabus.)

Evidence: - Students will generate a written document (paper, poster, etc.) in which they:
  - Identify the information or data needed to address a particular problem or issue.
  - Design or utilize an appropriate discipline-based approach to solve or address the problem.
  - Provide an appropriate analysis of data or information, either provided or generated, to make conclusions relative to the original question.

Standard At least 80% of students score 3 or 4 on each dimension of rubric.

Rubric for SLO 1

<table>
<thead>
<tr>
<th>Dimension/ Criterion</th>
<th>Does not meet Expectations (1)</th>
<th>Approaches Expectations (2)</th>
<th>Meets Expectations (3)</th>
<th>Exceeds Expectations (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framing a problem: Explain the solving problem process</td>
<td>Demonstrates a limited ability in using discipline-specific language or knowledge to explain analytical methods.</td>
<td>Demonstrates some ability in using discipline-specific language or knowledge to explain analytical methods.</td>
<td>Demonstrates a coherent ability in using discipline-specific language or knowledge to explain analytical methods.</td>
<td>Demonstrates a comprehensive and consistent ability in using discipline-specific language or knowledge to explain analytical methods.</td>
</tr>
<tr>
<td>(SLO1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Analysis: Use data or evidence to make a conclusion</td>
<td>Evidence or relevant conceptual ideas are presented but is unorganized, poorly presented and/or unrelated to the focus of the problem.</td>
<td>Evidence or relevant conceptual ideas are generally related to the focus of the problem but the use of evidence/ideas is conceptually inaccurate or is not effective at revealing important patterns.</td>
<td>Evidence or relevant conceptual ideas are specifically related to the focus of the problem and the use of evidence/ideas is conceptually accurate or is effective at revealing important patterns.</td>
<td>Evidence or relevant conceptual ideas are specifically related to the focus of the problem and the use of data supports assertions and patterns.</td>
</tr>
<tr>
<td>(SLO1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student Learning Outcome 2: Students develop an understanding of the impact that science has on society. (List SLO 2 on syllabus.)

Evidence: Students will use discipline-based knowledge or evidence to defend or critique a proposed solution to a science-related societal issue.

Standard At least 80% of students score 3 or 4 on each dimension of rubric.
## Standard Rubric for SLO 2

<table>
<thead>
<tr>
<th>Dimension/ Criterion</th>
<th>Does not meet Expectations (1)</th>
<th>Approaches Expectations (2)</th>
<th>Meets Expectations (3)</th>
<th>Exceeds Expectations(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Societal Position: Relate evidence to a societal issue (SLO2)</td>
<td>Unable to develop an opinion from evidence that relates to a societal issue.</td>
<td>Able to develop an opinion from evidence, but does not relate it to a societal issue.</td>
<td>Able to develop an opinion from evidence and relate it to a societal issue.</td>
<td>Able to develop a comprehensive opinion from evidence and relate it to a societal issue with examples.</td>
</tr>
<tr>
<td>Impacting Society: Support a position or opinion related to society (SLO2)</td>
<td>Unable to develop a position using rhetoric or evidence from a societal issue.</td>
<td>Incomplete use of rhetoric or evidence to support the position of a societal issue.</td>
<td>Able to use rhetoric or evidence to support the position of a societal issue.</td>
<td>Able to critique rhetoric or evidence from both sides of a societal issue and make a conclusion.</td>
</tr>
</tbody>
</table>
III. SYLLABUS REQUIREMENT

Syllabi should include the following:
“General Education Student Learning Outcomes” section where the general education outcomes are listed. After listing the outcomes, there should be a clear statement indicating where those outcomes will be assessed “These outcomes will be assessed in…final exam, essay 2, etc”. The name of the assignment will have to match the one given under Evaluation/Grading Distribution/ and it should indicate clearly the percentage of the grade that the assignment has in the course.

Example:

<table>
<thead>
<tr>
<th>General Education Student Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Students apply physical/natural principles to analyze and solve problems.</td>
</tr>
<tr>
<td>• Students develop an understanding of the impact that science has on society.</td>
</tr>
</tbody>
</table>

These outcomes will be assessed on the SHORT ESSAY #3 (you must specify which one!!!)

Later in the syllabus… it should show the weight in the grade

Grades

Grades on individual assignments reflect the quality of your work in terms of how it meets the respective goals for each project. Your final grade will be calculated according to the following formula:

- Homework and Discussion 10%
- Quizzes 10%
- Short Essays (3, 2-3 pgs. each, in-class and take home) 15%
- Midterm Exam 20%
- Comparative Analysis Paper (6-8 pgs.) 20%
- Final Exam 25%
IV. APPROVAL AND SIGNATURES.

1. Signature of Department Chair or Program Director:

__________________________________________  Date: ________________

2. Signature of Academic Dean:

__________________________________________  Date: ________________

3. Signature of Provost:

__________________________________________  Date: ________________

4. Signature of Committee on General Education Chair:

__________________________________________  Date: ________________

5. Signature of Faculty Senate Secretary:

__________________________________________  Date: ________________

Date Approved by Faculty Senate: _________________