Boise State University
Foundational Studies Program Course Application Form
Due to the Foundational Studies Program by August 19, 2011

After the Foundational Studies Program has approved a course, departments will continue through the regular department and college procedures. The approved course should be submitted to the University Curriculum Committee by October 1, 2011.

Table of Contents (Click title to go to that section)

Instructions: ............................................................................................................................................................ 1
Part I. Course Information...................................................................................................................................... 1
Part II. Syllabus Statement..................................................................................................................................... 2
Part III. Design for Accessibility........................................................................................................................... 2
Part IV. Evidence of Quality Course Design....................................................................................................... 3
Course Design Table .............................................................................................................................................. 4

Instructions:

1. Complete one form per course.
2. Attach this Foundational Studies Course Application Form to the back of the University Curriculum Committee “Request for Curriculum Action” form. Both forms should be submitted to the Foundational Studies Program Office by August 19, 2011.

Part I. Course Information

Course Number and Title: GEOS 101: Global Environmental Science

Type of Foundational Studies Course – (Choose One):
[ ] DLS (Disciplinary Lens – Social Science)
[ ] DLL (Disciplinary Lens – Literature and Humanities)
[ ] DLV (Disciplinary Lens – Visual and Performing Arts)
[ ] DLM (Disciplinary Lens – Mathematics)
[x] DLN (Disciplinary Lens – Natural, Physical, and Applied Sciences)
   Includes Lab: [x] Yes [ ] No
[ ] CID (Communication in the Discipline)
[ ] FF (Finishing Foundations)

Delivery Format(s) – (Check all that apply):
[x] Face to Face
[ ] Fully Online
[ ] Hybrid
[ ] Concurrent Enrollment
[ ] Other (briefly describe):
Part II. Syllabus Statement

Boise State's Foundational Studies Program provides undergraduates with a broad-based education that spans the entire university experience. GEOS 101 satisfies 4 credits of the Foundational Studies Program's Disciplinary Lens – Natural, Physical and Applied Science requirements. It supports the following University Learning Outcomes, along with a variety of other course-specific goals.

ULO 8. Apply knowledge and methods characteristic of scientific inquiry to think critically about and solve theoretical and practical problems about physical structures and processes.

GEOS 101: Global Environmental Science is designed to help students understand the major components of the Earth System (atmosphere, hydrosphere, lithosphere, biosphere), and the cycles through which they interact, from the perspective of an Earth Systems scientist. This course helps to achieve the goals of the Foundational Studies Program by focusing on the following course learning outcomes.

After successful completion of this course, you will be able to:

• Develop and articulate a question based on relevant geologic observations, 2) describe parallel, testable hypotheses that explain your observations, 3) design a simple experiment to test each hypothesis, and 4) evaluate the results of the experiment to decide which hypotheses are supported by the data.
• Clearly differentiate between observation and interpretation of geologic data, and summarize and relate observations in order to support an interpretation.
• Clearly and accurately apply scientific terms and principles to construct organized and concise written, oral, and graphical communication about important ideas such as Earth’s energy budget, atmospheric composition and circulation, the hydrologic cycle and water resources, plate tectonics and the rock cycle, landform development, and past and current climate change.
• Describe the primary ways in which humans are affected by each of the major components of the Earth System, explain how scientific understanding about these components and their interaction has a direct impact on societal wellbeing, and summarize scientific data illustrating ways in which human activities can in turn affect the Earth System.

Part III. Design for Accessibility

In the space below, briefly describe plans for providing access to course materials and activities (or equivalent alternatives) to all students in adherence with the Americans with Disabilities Act. Although these plans may vary from instructor to instructor, the descriptions provided below should be representative of intended departmental and instructor practices. (See example statements appended to this form.)

GEOS 101: Global Environmental Science: Online sections will include narrated lectures combining PowerPoint presentations with the instructor’s voice. Instructors will be encouraged to provide PowerPoint files with a textual transcript of the lecture in the notes section of each slide. Images used in the Blackboard site will have appropriate textual descriptions that can be read by screen reader software. In all sections, students will be able to submit assignments in a variety of formats,
including written papers and podcasts. Extra time on tests and other accommodations will be provided to students as needed per the policies of the Disability Resource Center.

Part IV. Evidence of Quality Course Design

Please use the table below (column headings for this table should not be changed) to provide evidence that the course has been carefully designed and is clearly aligned with Foundational Studies Program desired ULOs. All sections of the course should share similar student learning outcomes. Teaching and Learning Activities and Assessment Methods may vary from instructor to instructor. Please use the table to report representative strategies that may be used. Assessment activities used for reporting to the Foundational Studies Program should be consistent across different sections of the course.

Please see below.
## Course Design Table

<table>
<thead>
<tr>
<th>Foundation ULO 8 Criteria</th>
<th>Foundation ULO 8 Notions of Exemplary Work</th>
<th>Course Learning Outcomes: By the end of this course, each student should be able to…</th>
<th>Assessment Method: Evidence of Student Learning</th>
<th>Planned Teaching &amp; Learning Activities / Pedagogy</th>
</tr>
</thead>
</table>
| ULO 8.1: Process of Inquiry and Analysis in Response to Evidence or Observation | Skillfully and thoroughly formulates a research question or testable hypothesis.  
* Constructs a model to test evidence and observations  
* Skillfully uses model to either confirm existing explanations or formulate new hypotheses | Develop and articulate questions based on relevant geological observation  
Describe parallel, testable hypotheses that explain their observations  
Design simple experiment to test each hypothesis  
Evaluate the results of the experiment to decide which hypotheses are supported by the data | Summative assessment of learning outcome based on:  
Short-answer exams delivered in laboratory (scores from selected sections of grading rubrics reported to Foundations Program)  
Multiple-choice exams delivered via Blackboard (selected mid- and higher-order thinking skill questions reported to Foundations Program) | Learning outcome supported by:  
Hands-on laboratory activities  
Lecture, think-pair-share activities, and in-class demonstrations using the scientific method  
Formative assessment and metacognition opportunities through post-lab quizzes and short in-class quizzes |

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Boise State University  
Foundational Studies Course  
Spring 2014  

Course Number and Title: GEOS 101: Global Environmental Science
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<tbody>
<tr>
<td><strong>ULO 8.2:</strong> Understanding of Knowledge and Inquiry</td>
<td>Clearly understands the difference between evidence (data) and explanation (theory)</td>
<td>Clearly differentiate between observation and interpretation of geologic data, and summarize and relate observations in order to support an interpretation.</td>
<td>Summative assessment of learning outcome supported by:</td>
<td>Learning outcome supported by:</td>
</tr>
<tr>
<td>Is able to connect evidence &amp; explanation to build an argument</td>
<td></td>
<td></td>
<td>Short-answer exams delivered in laboratory (scores from selected sections of grading rubrics reported to Foundations Program)</td>
<td>Hands-on laboratory activities</td>
</tr>
<tr>
<td>* Understands the role of these kinds of arguments in building knowledge in the discipline</td>
<td></td>
<td></td>
<td>Multiple-choice exams delivered via Blackboard (selected mid- and higher-order thinking skill questions reported to Foundations Program)</td>
<td>Lecture, think-pair-share activities, and in-class demonstrations using the scientific method</td>
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Formative assessment and metacognition opportunities through post-lab quizzes, short in-class quizzes, knowledge surveys at beginning of course and prior to each exam, and pre-lecture reading quizzes
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<td>ULO 8.3: Communication of Scientific and/or Technological Understandings</td>
<td>Produces clear, accurate, well-organized written and oral communications about scientific and technological understandings * Use of scientific language, representational tools, and notation covered in the course is skillful.</td>
<td>Clearly and accurately apply scientific terms and principles to construct organized and concise written, oral, and graphical communication about important ideas such as Earth’s energy budget, atmospheric composition and circulation, the hydrologic cycle and water resources, plate tectonics and the rock cycle, landform development, and past and current climate change.</td>
<td>Summative assessment of learning outcome based on: Written and graphical representation of results from laboratory exercises (scores from selected sections of grading rubrics reported to Foundations Program) Oral presentation on the origin and impacts of a major energy resource available to society (scores from selected sections of grading rubric reported to Foundations Program) Multiple-choice exams delivered via Blackboard (selected questions reported to Foundations Program)</td>
<td>Learning outcome supported by: Hands-on laboratory exercises Lecture, think-pair-share activities, and in-class demonstrations of appropriate language and notation Formative assessment and metacognition opportunities through graded drafts of presentation components pre-lab quizzes post-lab quizzes pre-lecture reading quizzes short in-class quizzes and knowledge surveys at beginning of course and prior to each exam</td>
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<td>ULO 8.4: Understanding of interactions of science and technology with humans and environment</td>
<td>Skillfully assesses the potential connection of scientific and/or technological developments to humans and the environment. Able to articulate possible implications of these relationships.</td>
<td>Describe the primary ways in which humans are affected by each of the major components of the Earth System. Explain how scientific understanding about these components and their interaction has a direct impact on societal wellbeing. Summarize scientific data illustrating ways in which human activities can in turn affect the Earth System.</td>
<td>Summative assessment of learning outcome supported by: Oral presentation on the origin and impacts of a major energy resource available to society (scores from selected sections of grading rubric reported to Foundations Program). Multiple-choice exams delivered via Blackboard (selected mid- and higher-order thinking skill questions reported to Foundations Program).</td>
<td>Learning outcome supported by: Lecture, think-pair-share activities, and case studies of current environmental issues Hands-on laboratory activities Formative assessment and metacognition opportunities through graded drafts of presentation components short in-class quizzes, knowledge surveys at beginning of course and prior to each exam.</td>
</tr>
</tbody>
</table>

5-16-2013

Foundational Studies Program Director Signature Date