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.

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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

<table>
<thead>
<tr>
<th>Course Number and Title: PHYS 101: Introduction to Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Foundational Studies Course – (Choose One):</td>
</tr>
<tr>
<td>[ ] DLS (Disciplinary Lens – Social Science)</td>
</tr>
<tr>
<td>[ ] DLL (Disciplinary Lens – Literature and Humanities)</td>
</tr>
<tr>
<td>[ ] DLV (Disciplinary Lens – Visual and Performing Arts)</td>
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<tr>
<td>[ ] DLM (Disciplinary Lens – Mathematics)</td>
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<tr>
<td>[x] DLN (Disciplinary Lens – Natural, Physical, and Applied Sciences)</td>
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<tr>
<td>Includes Lab: [x] Yes [ ] No</td>
</tr>
<tr>
<td>[ ] CID (Communication in the Discipline)</td>
</tr>
<tr>
<td>[ ] FF (Finishing Foundations)</td>
</tr>
</tbody>
</table>

| 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. PHYS 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.

PHYS 101: Introduction to Physics is designed to develop an understanding of the nature of basic physics principles. 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:

- Understand and apply basic principles to motion, energy, electricity, magnetism, light, relativity, atoms, fission and fusion.
- Apply laboratory procedures to formulate and assess physical problems.
- Use a historical framework to understand the physical and technological processes surrounding us and how these ideas might relate to social responsibility.
- Critically assess physical concepts and their relation to real world applications.

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.)

PHYS 101: Introduction to Physics: All instructors are committed to working with the university's Disability Resource Center (DRC) to meet the needs of students with documented disabilities. Students that feel they may need accommodations will be met with privately, and steered to the DRC for further coordination. Approved accommodations may include (but are not limited to): checking pdf reading assignments for readability by a screen reader, videos chosen for use in the course will be those that have been close-captioned by the content producer to provide access to students with hearing impairment, graphics in PowerPoint presentations used in class lectures will be verbally described to students on an as-needed basis, providing textual descriptions accessible by screen readers to images used on the course web site, extra time on tests and oral examinations, or other accommodations.
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.
### Boise State University
Foundational Studies Course
Spring 2014

Course Number and Title: PHYS 101: Introduction to Physics

## 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 | * Use scientific method to develop, implement, and analyze the results of a lab experiment  
* Interpret and analyze graphs and plots | * Group presentation of lab report showing appropriate organization and analysis of results  
* Multiple choice test questions that require the higher levels of thinking. Specific questions will be used as evidence for the Foundational Studies Program | * Progression through the semester from guided template for the experiment to student generated approach.  
* Laboratory exercises that support the collection and interpretation of data.  
* Lectures that model the interpretation of data. Activities would require the use of clickers that allow students to work on their interpretation skills. |
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</table>
| ULO 8.2: Understanding of Knowledge and Inquiry | * Clearly understands the difference between evidence (data) and explanation (theory)  
* Is able to connect evidence & explanation to build an argument  
* Understands the role of these kinds of arguments in building knowledge in the discipline | This ULO criterion is addressed in the ULO above (Process of Inquiry and Analysis in Response to Evidence or Observation). | Per attached review, please add detail here to distinguish the way in which the Understanding of Knowledge and Inquiry will be assessed and activities. If drawing on assignment above, please briefly describe how. | |
| ULO 8.3: Communication of Scientific and/or Technological Understandings | * 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. | * Compile and organize student generated data in a coherent manner.  
* Use appropriate physics terminology in the analysis of real-world situations and lab results.  
* Apply understanding of the organizing principles and theories of physics, such as Force & Motion, Conservation Laws, Electricity & Magnetism, and Light & Optics, to explanations of the physical world. | * Group lab reports  
* Homework assignments  
* Class participation | * Model problem solving strategies using in-class examples from varied physical situations  
* Think/pair/share activities |
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</thead>
<tbody>
<tr>
<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>Understand the physical and technological processes surrounding us and how these ideas might relate to social responsibility</td>
<td>* Written analysis of a student selected topic of interest within the stated range of topics regarding technology. * Participation in online discussion board.</td>
<td>* Discussion of historical developments * In-class physical demonstrations</td>
</tr>
</tbody>
</table>

5-16-2013

**Foundational Studies Program Director Signature**

**Date**
Feedback from Review Committee:

ULO 8 criteria "Process of Inquiry and Analysis in Response to Evidence or Observation" and "Understanding of Knowledge and Inquiry" are not the same and should not be addressed with the statement ... "This ULO criterion is addressed in the ULO above (Process of Inquiry and Analysis in Response to Evidence or Observation)."

(Also, the outcomes that are listed in the syllabus portion of the application do not appear in the ULO 8 portion of the document, but it is unclear if this is an issue that needs to be addressed.)

Feedback from the FSP Director:

I concur with the review committee and would ask that the department add detail to the Understanding of Knowledge Inquiry for the purpose of achieving greater coherence across class sections. The course development table can provide a framework for faculty to guide basic criteria covered in each of the class sections. It is completely acceptable (and encouraged) to meet multiple criteria with the same assignments, but there each of these areas have different foci.

I am less concerned with the repetition of class outcomes verbatim in the course design table. As I read the table, I see the course outcomes reflected.