New Undergraduate Course Proposal Form

1. Department and Contact Information

<table>
<thead>
<tr>
<th>Tracking Number</th>
<th>Date &amp; Time Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>763</td>
<td>2008-10-23 15:49:39</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Department</th>
<th>College</th>
<th>Budget Account Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>Arts &amp; Sciences</td>
<td>125100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact Person</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex Levine</td>
<td>45508</td>
<td><a href="mailto:alevine@cas.usf.edu">alevine@cas.usf.edu</a></td>
</tr>
</tbody>
</table>

2. Course Information

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Number</th>
<th>Full Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHI</td>
<td>3100</td>
<td>Formal Logic</td>
</tr>
</tbody>
</table>

Is the course title variable?  N
Is a permit required for registration?  N
Are the credit hours variable?  N

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Section Type</th>
<th>Grading Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Class Lecture (Primarily)</td>
<td>Regular</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Clock Hours</th>
<th>Abbreviated Title (30 characters maximum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Formal Logic</td>
</tr>
</tbody>
</table>

Prerequisites
PHI 2101 or MGF 1106 or MGF 1107 or one semester of calculus

Corequisites

Co-Prerequisites

Course Description
PHI 3100 Formal Logic 6A QM (3) AS PHI A study of predicate calculus, predicate calculus with identity, formal semantics, and elementary metalogic. Strongly recommended for philosophy majors.

3. Justification

A. Indicate how this course will strengthen the Undergraduate Program. Is this course necessary for accreditation or certification?

The Philosophy Department currently offers two formal logic courses, PHI 2101 ("Introduction to Formal Logic") and PHI 5135 ("Symbolic Logic"). The Mathematics Department also irregularly offers MHF 5306 ("Mathematical Logic and Foundations I"). The USF undergraduate curriculum is thus missing an intermediate logic course, such as is offered at most of our peer institutions (The PHI 3100 designation is in use at UF and FSU, for example). This lack has three undesirable consequences we wish to avoid: 1) it places pressure on students and instructors in PHI 2101 to complete more material than ought reasonably to be expected of students with no logic or mathematics background; 2) students with some mathematics background who wish to take logic, and for whom the only option is PHI 2101, find this course insufficiently challenging; and 3) it places students who excel in PHI 2101 and wish to continue their training in logic in the position of having to take a 5000-level class that may well exceed their ability. The solution adopted by most philosophy departments nationwide has been to teach an intermediate logic course.
B. What specific area of knowledge is covered by this course which is not covered by courses currently listed?

If the course is approved, PHI 2101 will be understood to cover propositional logic (including truth tables, truth trees, and sentential calculus), along with some basic theory of computation. PHI 3100 would continue the logic sequence with predicate calculus, predicate calculus with identity and terms, axiomatized theories, formal semantics, and basic metalogic (soundness and completeness of PC). The undergraduate philosophy major requirements will be changed to allow the logic requirement to be satisfied with either PHI 2101 or PHI 3100, with the latter strongly encouraged. PHI 5135 could then presuppose the material in PHI 3100, focusing on topics in intermediate metalogic (including Gödel’s theorems).

C. What is the need or demand for this course? (Indicate if this course is part of a required sequence in the major.) What other programs would this course service?

The proposed PHI 3100 will allow philosophy majors with greater prior background in logic or mathematics to satisfy the logic requirement while receiving a greater intellectual challenge than in PHI 2101. For those who plan to pursue graduate studies in philosophy, it will serve as preparation for the much more demanding PHI 5135. Much of the enrollment in the proposed PHI 3100 is likely to come at the expense of PHI 2101, a consequence for which the Philosophy Department is prepared. As stated above, our major requirements will be revised to allow either PHI 2101 or PHI 3100 in satisfaction of the logic requirement, with the latter strongly encouraged.

D. Has this course been offered as Selected Topics/Experimental Topics course? If yes, what was the enrollment?

No.

E. How frequently will the course be offered? What is the anticipated enrollment?

One section of 50 students a year during Fall or Spring, and one a Summer if demand warrants.

F. Do you plan to drop a course if this course is added? If so, what will be the effect on the program and on the students? (Please forward the nonsubstantive course change form regarding the course to be deleted to the Council secretary.)

No. See above, Section 3B.

G. What qualifications for training and/or experience are necessary to teach this course? (List minimum qualifications for the instructor.)

Eighteen hours of graduate level coursework in philosophy, including coursework equivalent to PHI 5135.

4. Other Course Information

A. Objectives / Outcomes

Following successful completion of PHI 3100, students must –Translate sentences and arguments from a natural language into a formal language; --Construct and evaluate complex proofs; --Employ the tools of formal semantics toward evaluating the metalogical properties of proof procedures. --Competently manipulate both formal proof procedures and mathematical theories, as defined in logic.

B. Major Topics

Predicate calculus, predicate calculus with identity and terms, axiomatized theories, formal semantics, and basic metalogic (soundness and completeness of PC).

C. Textbooks
5. Syllabus

Your college will forward an electronic copy of your syllabus to Undergraduate Studies when your course is approved for submission.
Course Syllabus
PHI 3100—Formal Logic
Alex Levine, FAO 226, alevine@cas.usf.edu, Office Hours T-Th 11:00-1:00

Course Description.

PHI 3100 Formal Logic 6A QM (3) AS PHI A study of predicate calculus, predicate calculus with identity, formal semantics, and elementary metalogic. Strongly recommended for philosophy majors. Prerequisites: PHI 2101 or MGF 1106 or MGF 1107 or one semester of calculus.

Formal logic is the study of invariant argument and inference forms. To study the forms themselves, we must abstract from any particular content. Toward this end, we will develop a formal or symbolic language. We will also develop a proof procedure for this language, with rules analogous to those of everyday arguments stated in English. With these tools in hand, we will be in a position to study the differences between valid and invalid arguments. Finally, we will develop further tools, allowing us to talk about the proof procedure we have developed, and to demonstrate that it has certain interesting properties. Along the way, we will explore connections between formal logic and other formal disciplines, including mathematics and computing theory.

Course Text:


Evaluation and Course Policies:

There will be regular homework assignments, seven in all, roughly every two weeks, with each assignment distributed in class the week before it is due. As an incentive toward attendance, assignments will not be distributed online. A total of 25 points will be awarded for homework assignments, due at the beginning of the first class meeting of each week, with no late papers accepted. The student’s lowest three homework scores will be discounted. Two mid-term examinations will be worth 20 points each. They will be given during regular class hours, on the dates announced below. The final examination will be worth 35 points, and grades for the semester will be assigned on a 100-point scale as follows:

A+: 100+; A: 99-94; A-: 90-93; B+: 87-89; B: 84-86; B-: 80-83; C+: 77-79; C: 74-76; C-: 70-73; D+: 67-69; D: 64-66; D-: 60-63; F: 0-59.

This course may not be taken for S/U credit, and no Incompletes (grades of “I”) will be granted except in cases of dire illness. Grades will be posted on blackboard as soon as they become available. It is your responsibility to keep yourself informed of your progress throughout the semester. If you wish to discuss any of your grades with me, you
must do so within a week after it has been posted. Late or retrospective grade appeals will not be considered.

Attendance at all lectures and discussion sections is mandatory. Documented absence for illness or religious observance will be excused.

I really hate to have to say this on any syllabus, but sad experience has proved it necessary. The minimum sanction for any student found to have committed plagiarism on any assignment will be a grade of FF for the entire semester—not just an F for the assignment. For more information on the significance of the FF grade, or if you are uncertain as to what constitutes plagiarism, please consult pp. 45-46 of the Undergraduate Catalog (under the heading “Academic Dishonesty”), or come see me. Your decision to remain in this course constitutes agreement to abide by course policies, and to accept the announced penalty for failing to so abide. It is illegal to sell lecture notes or recordings without the permission of the instructor. All such permission is hereby denied. Your notes and recordings are for your own use only.

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Blackboard, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor Blackboard site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.

Students with disabilities are responsible for registering with Students with Disabilities Services in order to receive academic accommodations. SDS encourages students to notify instructors of accommodation needs at least 5 business days prior to needing the accommodation. A letter from SDS must accompany this request.

Schedule of Readings and Examinations

Please have the reading and homework for each week completed by the first meeting of that week. “BMN” refers to The Logic Book.

Week of: Readings and Examinations:

Introduction and Review

Aug. 25 BMN 1.1-1.4
Sep. 1 BMN 1.5-2.1

The syntax of L

Sep. 8 BMN 2.2-2.5
**Sentential Calculus**

- **Sep. 15**  
  BMN 3.1-3.4

- **Sep. 22**  
  BMN 3.5-3.6. **September 22: First Mid-term**

- **Sep. 29**  
  BMN 5.1

- **Oct. 6**  
  BMN 5.2-5.3

**Predicate Calculus**

- **Oct. 13**  
  BMN 5.4-5.5

- **Oct. 20**  
  BMN 7.1-7.3

- **Oct. 27**  
  BMN 7.4-7.5

- **Nov. 3**  
  BMN 7.7-7.8

- **Nov. 10**  
  BMN 8.1

**The semantics of L and metalogic**

- **Nov. 17**  
  BMN 8.2-8.4. **Nov. 17: Second Mid-term**

- **Nov. 24**  
  BMN 10.1-10.3

- **Dec. 1**  
  BMN 10.5

The final exam will be given during final exam week. The date and time are TBD.