Course Change Proposal
Form A

<table>
<thead>
<tr>
<th>Academic Group (College):</th>
<th>Academic Organization (Department):</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Letters</td>
<td>Philosophy</td>
<td>April 9, 2010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Course Proposal:</th>
<th>Department Chair:</th>
<th>Submitted by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>New X Change Deletion</td>
<td>Thomas Pyne</td>
<td>Thomas Pyne</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does this course fulfill a requirement for single-subject or multiple subject credential students?</th>
<th>For Catalog Copy:</th>
<th>CCE (Extension):</th>
<th>Semester Effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes No X</td>
<td>Yes X No</td>
<td>Yes No _</td>
<td>Fall X Spring _, 2010</td>
</tr>
</tbody>
</table>

This course replaces experimental course Subject Area (prefix) and Catalog Nbr (course number):

If changing an existing course, should new version be considered a repeat of the original version? If so, the same Course ID will be maintained. If not, a new Course ID will be assigned. Note: In PeopleSoft terminology, the Course ID is the unique system identifier, not the Catalog Nbr.

<table>
<thead>
<tr>
<th>Change from:</th>
<th>Change to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Area (prefix) &amp; Catalog Nbr (course no.):</td>
<td>Title:</td>
</tr>
<tr>
<td></td>
<td>Units:</td>
</tr>
<tr>
<td>PHIL 61</td>
<td>Inductive Logic</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
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</table>

JUSTIFICATION:

Logic is a core discipline in philosophy. Until now the Philosophy Department had only classes in deductive logic (PHIL 60 and PHIL 160). But the Department concurs with the recommendations of its external consultant that a strong undergraduate program requires a dedicated class in inductive logic as well.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy. See http://www.csus.edu/umanual/acad.htm - Guidelines for Catalog Course Description)

Introduction to inductive logic and the problem of decision under uncertainty. Topics include: the nature of inductive rationality, philosophical theories of induction and probability, cognitive biases and common errors in inductive reasoning, and philosophical problems in defining risk, rational agency, and the expected value of an action. (3 units.)

Note:

<table>
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<tr>
<th>Prerequisite:</th>
<th>None</th>
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<tbody>
<tr>
<td>Enforced at Registration:</td>
<td>Yes No</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
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<td>Yes No</td>
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<table>
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<tr>
<th>Graded:</th>
<th>Instructor Approval Required?</th>
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<tr>
<td>Letter X Credit/No Credit</td>
<td>Yes No X</td>
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<table>
<thead>
<tr>
<th>Course Classification (e.g., lecture, lab, seminar, discussion):</th>
<th>Title for CMS (not more than 30 characters)</th>
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<tr>
<td>Lecture/Discussion</td>
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<tr>
<th>Cross Listed?</th>
<th>If yes, do they meet together and fulfill the same requirement, and what is the other course.</th>
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<td>Yes No X</td>
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<th>How Many Times Can This Course be Taken for Credit?</th>
<th>Can the course be taken for Credit more than once during the same term?</th>
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<tr>
<td>1</td>
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FOR NEW COURSE PROPOSALS OR SUBSTANTIVE CHANGES ONLY:

Description of the Expected Learning Outcomes: Describe outcomes using the following format: “Students will be able to: 1), 2), etc.” See the example at http://www.csus.edu/acaf/example.htm
Students will understand:
(1) the difference between deductive logic and inductive logic;
(2) errors of inductive reasoning;
(3) cognitive biases in inductive reasoning;
(4) axioms of probability;
(5) derivation and application of Bayes' Rule;
(6) the philosophical problem of induction;
(7) frequentist vs. subjectivist interpretations of probability;
(8) the nature of rational agency;
(9) the concept of risk;
(10) expected utility calculations;
(11) philosophy and ethics of risk assessment.

**Attach a list of the required/recommended course readings and activities [Note: it is understood that these are updated and modified as needed by the instructor(s).] This attachment should be forwarded only to your Dean's office, not Academic Affairs.**

**Assessment Strategies:** A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

Course will be assessed by a combination of homework, in-class quizzes and tests, and in-class midterm and final.

For whom is this course being developed?
Majors in the Dept. X Majors of other Depts _____ Minors in the Dept. _____ General Education _____ Other _____

Is this course required in a degree program (major, minor, graduate degree, certificate)? Yes X No __
If yes, identify program(s): Philosophy: Logic and Philosophy of Science Concentration.

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes _____ No X _____
If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any). None

*The Department Chair's signature below indicates that affected programs have been sent a copy of this proposal form.*

**Approvals:** If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

<table>
<thead>
<tr>
<th>Signatures:</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Department Chair:</td>
<td>4/9/10</td>
</tr>
<tr>
<td>College Dean or Associate Dean:</td>
<td>4-22-10</td>
</tr>
<tr>
<td>CPSP (for school personnel courses ONLY)</td>
<td></td>
</tr>
<tr>
<td>Associate Vice President and Dean for Academic Programs</td>
<td></td>
</tr>
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Distribution: Academic Affairs (original), Department Chair and College Dean. Dean's office to send original after approval to Academic Affairs, at mail zip 6016. An electronic copy must also be sent.

9/10/2008
College of Arts and Letters Curriculum Committee
CHECK-OFF LIST FOR COURSE APPROVAL

Name of Department: Philosophy                  Effective Date: Fall 2010
Proposed Course Number: 61                    Course Name: Inductive Logic
Contact Person: Thomas Pyne                    Instructor:
Projected Enrollment: 30                     Units of Credit: 3
Has the course been offered before? No        If yes, under what number?
Suggested Course Classification: Lecture/Discussion Unit distribution: lecture ___ lab ___ activity ___

List the prerequisite(s) for the proposed course. 3 units in philosophy

For which students or programs is the course designated?
___ X Majors in the department
___ X Minors in the department
___ Majors of other departments (e.g., An A&L course designed for Business Administration majors)
___ General service
___ Other (specify) Distance Education

If approved by the A & L Curriculum Committee, will this course be submitted for consideration in the General Education Program? ___ Yes ___ X Not currently planned

Method of Presentation:
___ Lecture ___ Lecture/Activity ___ X Lecture/Discussion ___ Lecture/Laboratory
___ Activity ___ Laboratory ___ Seminar ___ Films and/or other visuals
___ Performance ___ Other (specify) __________________________

If different amounts of credit will be available for the proposed course, indicate differences in course requirements for earning the units.

If the course can be taken more than one time for credit, what is the justification for the repetition? How will the two (or more) experiences differ?

What courses currently offered in Arts and Letters or other colleges/departments most closely resemble the proposed course? None

Can the course be implemented within the existing departmental allocation? Yes
If this is a new course, how will it be integrated into your present allocation: Program changes in the major make this an alternative to PHIL 60 in most concentrations. Thus, a part of the allocation to PHIL 60 will be diverted to PHIL 61.

List the objectives/goals/expected learning outcomes.
By the end of the course a student should understand:
- the difference between deductive logic and inductive logic;
  errors of inductive reasoning;
- cognitive biases in inductive reasoning;
  axioms of probability;
- derivation and application of Bayes' Rule;
  the philosophical problem of induction;
- frequentist vs. subjectivist interpretations of probability;
- the nature of rational agency;
- the concept of risk;
- expected utility calculations;
- philosophy and ethics of risk assessment

What student assessment tools will be used? (e.g., exams, papers, portfolios.)
Weekly homework and quizzes, midterm and a final.

In addition to filling out the Check-Off List form, please submit a course syllabus containing the following information:

I. Course Content and Objectives
   (Brief discursive overview of major topics and goals)

II. Required Texts
    (e.g., textbooks, class handouts, journals, newspapers, web pages, videos, etc.)

III. Course Format
     (e.g., lecture, lecture-discussion, seminar, composition, activities, studio, etc.)

IV. Course Requirements
    A. Class Participation
    B. Examinations
    C. Research Paper or Term Project or Short Papers, etc.
    D. Attendance
    E. Other Policies

V. Student Evaluation: How are the requirements in IV weighted in determining the course grade?
(e.g., attendance 10%, midterm 23%, etc.)

VI. Semester Outline
(Course topics ordered weekly)
Catalogue Description

An introduction to inductive logic and the problems of decision under uncertainty. Topics include: the nature of inductive rationality, philosophical theories of induction and probability, cognitive biases and common errors in inductive reasoning, and philosophical problems in defining risk, rational agency, and the expected value of our actions. (3 units.)

Learning Objectives

The aim of this course is to acquaint the student with the philosophy and logic of uncertainty. Whereas elementary deductive logic is confined to the study of conditions under which sets of premises may be said to guarantee the truth of a conclusion, inductive logic studies conditions under which sets of premises confer some degree of probability on a conclusion. In this course the student will learn how statistical information, personal probabilities, and considered judgments of personal and social utility can be brought to bear on human inferences and decision. Students will also learn about cognitive biases and errors that result in false inference and suboptimal decisions. This material will be developed against the background of philosophical problems associated with the nature or rational agency, inductive generalization, and utilitarian calculations of personal and social benefit.

By the end of the course a student should understand:

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(10) expected utility calculations;
(11) philosophy and ethics of risk assessment.
Course Rules

Attendance

Attendance is compulsory. You are allowed a maximum of three absences. For each absence over three your final grade will be reduced by 5 points (5%). I do not distinguish between excused and unexcused absences. You are late if you come to class after I take role. If you are late you must tell me on that day or it will be counted as an absence. All of the following count as one absence.

- Physical absence for more than half of the period.
- Any form of distracting behavior or inattention.
- Three tardies.

Special arrangements are possible for students who encounter extreme circumstances, e.g., death in the family, long-term illness, etc., however it is the student's responsibility to notify me of these circumstances immediately. No after-the-fact explanations of serial absences will be accepted.

Collaboration Policy

Cooperative learning is encouraged on take-home assignments. Because much work is of a formal, problem solving nature, it will be difficult to detect cheating on these assignments. But there is an in-class midterm and final exam for this course which counts for 50% of your grade. If you freeload off of others on take-home assignments, you will probably fail the midterms and the class.

Late Policy and Makeup Tests

Late assignments are downgraded by 10% for every day they are late. An assignment is a day late if I receive it anytime up to 24 hours after the beginning of the class period when it is due. No assignment will be accepted over a week late. All makeup tests are scored as late. Students who know they will be absent on a certain date can sometimes arrange to take the test early.

E-mail Submissions

E-mail submissions are acceptable only as a way of stopping the late clock. You must follow any e-mail submission with hard copy at the next class meeting. Failure to do this nullifies prior stopping of the late clock. Note that unless you spend some time learning how to use logical notation on the computer, e-mailing an assignment will be
impossible.

**Assignment Format Requirements**

- All work must be neatly presented and proofread.
- Assignments may be handwritten, but they must be neat. If I can't read something, I will simply mark it wrong.
- Assignments with multiple pages **must** be stapled.
- All work must demonstrate a college-level comprehension of English.
- Assignments that fail to meet the above criteria will be assessed a 10% reduction for each type of violation.

**Course Requirements**

**Assignments**

Your grade in this course will be based on 7 homework sets and 2 exams. You must complete at least 5 of these sets to receive a passing grade.

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<th>Number</th>
<th>Value</th>
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<td>Homework</td>
<td>5</td>
<td>10 pts.</td>
<td>50 pts.</td>
</tr>
<tr>
<td>Midterm</td>
<td>1</td>
<td>25 pts.</td>
<td>25 pts.</td>
</tr>
<tr>
<td>Final</td>
<td>1</td>
<td>25 pts.</td>
<td>25 pts.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-</td>
<td>-</td>
<td>100 pts.</td>
</tr>
</tbody>
</table>

Your final grade is based on 100 pts. In calculating your final grade fractional point totals are rounded up to the nearest whole point. Grades are assigned on a standard scale with minuses (-) added to scores below 100 ending in 0 and 1 and plusses (+) added to scores ending in 8 or 9. Note: You are responsible for monitoring your performance in this course. Be sure to pay close attention to the drop deadline. Do not hesitate to talk to me if you are experiencing problems at any time during this course.

**Course Materials**

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Students with Special Needs

Students who have special special learning or testing needs must notify the instructor with the appropriate documentation by the end of the second week of the semester.

Course Schedule

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<th>Sections</th>
<th>ImportantDueDates*</th>
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</tr>
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<td></td>
</tr>
<tr>
<td>Week 5-6</td>
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<td></td>
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<td>Week 11</td>
<td>Sections 11 &amp; 12 Philosophical approaches to Risk and Probability</td>
<td></td>
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<td>Week 11-12</td>
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<td></td>
</tr>
<tr>
<td>Week 12-13</td>
<td>Sections 16-19: Probability as Frequency: Stability, Normal Approximations, Significance &amp; Power, Confidence and Inductive Behavior</td>
<td></td>
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<td>Week 14-15</td>
<td>Sections 20-22: The Problem of Induction</td>
<td></td>
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<td>Week 16</td>
<td>Final</td>
<td></td>
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Syllabus: Philosophy 061
Inductive Logic

Catalogue Description

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