APPLICANT: Ronald C. Pine E-MAIL: pine@hawaii.edu

COURSE ALPHA and NUMBER: Phil 255

COURSE TITLE: Cosmology: Science and the Human Prospect

ESTIMATED NUMBER OF SECTIONS: Fall Spring 1

Is this request for a: □ New Course □ Modified Course □ Existing Course

□ Re-designation

Is this request for a: □ Certification □ Re-Certification. Date of last certification: 2001

DIVERSIFICATION AREA DESIGNATION SOUGHT:

□ DA (Arts) □ DP (Physical Sciences)
□ DB (Biological Sciences) □ DS (Social Sciences)
□ DH (Humanities) □ DY (Laboratory)

□ DL (Literature and Language)

What percentage of the CONTENT of this course focuses on this diversification area? 70%

What percentage of CLASS MEETINGS focuses on this diversification area? 70%

1. Please explain how the course SLOs align with the diversification area’s hallmarks.

DH1: Uses the terminology of historical, philosophical, language or religious studies;

SLO: Students will demonstrate in college level writing an understanding of historical and philosophical perspectives on the human relationship to the Universe. (See syllabus; note this course is always WI.)

Explanation: Students will learn basic philosophical perspectives as they apply to the history of science. They will learn the basic theories and terminology and apply them in writing to major issues in cosmology.

SLO: Students will demonstrate in college level writing a basic understanding of the different
cosmologies of Western culture, i.e., the Aristotelian-Ptolemaic, Copernican-Newtonian, 20th-21st
century. (See syllabus)

Explanation: Students will be introduced to intellectual history and world views associated with
scientific change. They will demonstrate in writing the relevance of understanding this history.

DH2: involves texts, artifacts, concepts, processes, theories or issues of concern in these studies;

SLO: Students will demonstrate in college level writing an understanding of the basic issues of
philosophy of science, including the central philosophical problem of cosmology -- the problem of
understanding the world, and our knowledge, as part of the world.(See syllabus)

Explanation: Students will be actively involved in the process of philosophical analysis and learn
how to apply concepts in the philosophy of science.

DH3: Demonstrates inquiry that involves the methods of study, reflection, evidence-gathering, and
argumentation that are employed in these studies.

SLO: All the SLO's. (See syllabus)

Explanation: Students will engage in philosophical reflection and argumentation. They will not
just study philosophy; they will do philosophy. The capstone paper requires that they articulate
their own cosmology by comparing and contrasting those that they have studied.

Explanatory notes. The hallmarks (three for each designation) are posted on the HCC Intranet. In
the text-box below, (a) re-state the hallmarks for the diversification designation you are seeking; (b)
for each hallmark provide the course SLO(s) that meet each hallmark (statement of the SLOs and
their numbers, e.g., SLO#1, should match what is given in the curriculum action form or course
syllabus; and (c) explain how the SLO(s) meet each hallmark.

2. Explain assessment strategies you plan to use (or have used, in the case of recertification) to
measure the degree to which students exit the course with the expected SLOs. If there are multiple
sections of the course, please discuss how assessment will be carried through all sections.

For this course I use embedded assessment, identifying specific questions on the final exam that
match the SLOs. As a WI course, I also use the WI assessment form. As a WI course I am also
making weekly assessments of student progress on objectives.

Explanatory notes. For this question, provide a clear connection between the course SLOs (e.g.,
understand research methodology) with assessment strategies (e.g., quizzes, final project). For multiple
sections of the same course, provide a plan for coordinating and assessing these SLOs across sections.

3. How have you used the assessment findings to modify or improve this course?

I only teach this course in the Spring and have only taught it twice recently. But I have made
changes to course delivery based on the above assessments. Most problematic is that students
need to understand the difference between deductive and inductive reasoning and how science
applies both. Understanding scientific evidence and at-risk probable but well-supported theories,
such as evolution theory, is an on-going pedagogical challenge, especially when some students have ideologies that inhibit understanding basic scientific concepts. There is constant thinking on my part on how to carefully sequence the curriculum..

Explanatory notes. If this is a new course, enter “N/A” as an answer. Courses being re-certified should include a summary of how assessment strategies and measures (Question #2) were used to modify or improve the course. Again, if multiple sections of the course are offered, provide an explanation for review of assessment across sections.

Reminder: If this is an application for an EXISTING or MODIFIED course, please attach a copy of your course syllabus that includes information described in the instruction part of this form. If this is a new course proposal, please attach a copy of the Curriculum Action Proposal for a new course.

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DIVERSIFICATION BOARD DECISION:

☑ Approved

Re-Certification Due: Fall 2016

☐ Not approved

If not approved, reasons for disapproval:

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Diversification Chair Signature: [Signature] Date: 8/15/11
Philosophy 255, Course Overview

WI and Diversification in Humanities

Before you enter this course, read carefully this overview, course evaluation, course assignments, course mechanics, and self-check activities.

Course Title: Cosmology: Science and the Human Prospect

Instructor: Professor Ronald C. Pine, Ph.D.

Course Credits: 3

General Education area: Diversification in Humanities

Prerequisites: English 100 and possess basic Internet skills. As a WI course, English 100 (C grade or higher) in the UH system or an equivalent college level composition course is an absolute prerequisite.

COURSE DESCRIPTION:

An interdisciplinary study of science and philosophy from a humanistic perspective. A scientific description of the Universe and its constituents, and its implications for human life will be discussed. Also, the central philosophical problems of cosmology will be discussed: The problem of understanding the world, including ourselves, and our knowledge, as part of the world.

Course Objectives and Student Learning Outcomes: Students will demonstrate in college level writing

- an understanding of historical and philosophical perspectives on the human relationship to the Universe.
- an understanding of the different cosmologies of Western culture, i.e., the Aristotelian-Ptolemaic, Copernican-Newtonian, 20th-21st century.
- an understanding of the scientific method by surveying its modern results and studying its historical development.
- an understanding of the basic issues of philosophy of science, including the central philosophical problem of cosmology -- the problem of understanding the world, and our knowledge, as part of the world.

COURSE PURPOSE:

This course is an interdisciplinary study of science and philosophy from a humanistic perspective. Its aim is to have students appreciate the vastness of the Universe and the wonder of its parts, and the philosophical significance of this for improving the quality of human life. A theme of the joy and seemingly limitless growth potential of human intelligence will be emphasized. The goal will not be a complete understanding in detail of every scientific topic discussed. It is not intended to replace introductory courses in Astronomy, Biology, and Physics. The goal is to impart to the student a "feel" for the scientific method and an appreciation for the scientific endeavor. It will present the worldview of the modern science and discuss the
implications of this view for the human prospect. It is an attempt to present the Big Picture in order that we may better understand ourselves and appreciate what is truly human and valuable.

COURSE CONTENT:

The course is a general survey one. The method will be to approach the study of science and the results of science from a philosophical perspective, such that the most important topics in science and many traditional topics in philosophy and intellectual history are discussed simultaneously. Accordingly, the following will be covered.

A. Science:

- Astrophysical theories on the origin and structure of the Universe; the Big Bang and Many Universe Theories
- Darwin's theory of natural selection and Eco-Evo-Devo; why Intelligent Design is not science.
- The scientific method and the history of science.
- Newtonian physics and modern science: Relativity theory, Quantum physics, and String Theory.
- The possibility of extraterrestrial life and communication.
- The Human Brain, intelligence, convergent and divergent evolution.

B. Philosophy:

- Metaphysics, Cosmology, and Epistemology.
- The scientific method, empiricism and the problem of induction.
- Questions of discovery and justification. The line of demarcation between philosophy, religion, and science.
- The Presocratics, Sophists, and Greek Philosophy. Plato and mathematics.
- Realism and Instrumentalism and the status of scientific theories. Paradigms and issues of objectivity/subjectivity.
- Immanuel Kant and categories of experience.
- Modern Science and the ontological status of mathematics

Texts and Resources:

*Science and the Human Prospect*, by Ronald C. Pine
Handouts and Internet resources on case studies and contemporary ethical issues.
Qualified students with disabilities will receive appropriate accommodations in this course. Students with disabilities may obtain information on available services online at honolulu.hawaii.edu/disability. Specific inquiries may be made by contacting Student ACCESS at 844-2392, by e-mail at access@hcc.hawaii.edu, or by simply stopping by the office located in 2/409.

**Schedule:** Below is the 16-week schedule.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Chapter 1: The World View of Modern Science -- Curiosity and Cognitive Values: Assignment 1</td>
</tr>
<tr>
<td>2</td>
<td>Chapter 2: Scientific Method and Cognitive Values: Assignment 2</td>
</tr>
<tr>
<td>3-4</td>
<td>Chapter 3: Evolution and Philosophical Issues: Assignment 3</td>
</tr>
<tr>
<td>5</td>
<td>Chapter 4: The Ancient Greeks -- Cultural Roots of Science: Assignment 4</td>
</tr>
<tr>
<td>6</td>
<td>Chapter 5: The Copernican Revolution -- Cultural Roots of Science: Assignment 5</td>
</tr>
<tr>
<td>7-8</td>
<td>Chapter 6: Newtonianism -- Cultural Roots of Science continued: Assignment 6</td>
</tr>
<tr>
<td>9</td>
<td>Chapter 7: Our Time, Understanding the Theory of Relativity: Assignment 7</td>
</tr>
<tr>
<td>10-11</td>
<td>Chapter 8: Our Time, Understanding Quantum Physics: Assignment 8</td>
</tr>
<tr>
<td>12</td>
<td>Draft of Major Paper</td>
</tr>
<tr>
<td>13</td>
<td>Chapter 9: Evolution in a Darwinian Universe: Assignment 9</td>
</tr>
<tr>
<td>14</td>
<td>Chapter 10: The Human Prospect -- Meliorism and Nihilism: Assignment 10</td>
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<tr>
<td>15</td>
<td>Feedback and Final Discussion</td>
</tr>
<tr>
<td>15</td>
<td>Final Exam Preparation</td>
</tr>
<tr>
<td>15</td>
<td>Final Draft of Paper</td>
</tr>
<tr>
<td>16</td>
<td>Exam Preparation</td>
</tr>
<tr>
<td></td>
<td>Final Exam</td>
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</table>
Philosophy 255: Course Evaluation

Your final grade for the course will be determined by your performance on one major paper (5 pages), ten online essays (one and a half pages each), class discussion, and an inclusive final exam (multiple choice). **Students must demonstrate a writing ability at the English 100+ level for a C grade or higher.** The weight assigned to each activity is as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Points Possible</th>
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</thead>
<tbody>
<tr>
<td>Online Class Essays, Discussion and Participation</td>
<td>250 points possible</td>
</tr>
<tr>
<td>Paper</td>
<td>100 points possible</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 points possible</td>
</tr>
<tr>
<td>Total Points Possible</td>
<td>450 points</td>
</tr>
</tbody>
</table>

Your final grade for the course will be assigned according to the following schedule of total points accumulated:

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>405-450</td>
<td>A</td>
</tr>
<tr>
<td>360-404</td>
<td>B</td>
</tr>
<tr>
<td>297-359</td>
<td>C</td>
</tr>
<tr>
<td>248-296</td>
<td>D</td>
</tr>
<tr>
<td>Under 248</td>
<td>F or N</td>
</tr>
</tbody>
</table>

Note: A "C" grade or higher is necessary for receiving WI credit. An incomplete grade (Inc.) is given only for special circumstances, usually an inability to finish a part of the course for a very good reason. An N grade at HCC means "no grade." It is usually given in place of an F grade if a student has a very good reason for why he or she performed poorly in the course. If disasters beyond your control occur to you while you are taking this course, please feel free to discuss the N-grade possibility with me.
Philosophy 255: Course Assignments and Papers

Reading Assignments: The contents section of the overview page makes clear that we will be reading Chapters 1-10 in the book *Science and the Human Prospect*. There will be lectures and Internet resources to read also.

Section Assignments: There will be 10 section assignment opportunities that will involve using an Laulima Discussion Forum bulletin board program to post short descriptive essays on topics that I assign and/or reactions to course topics. **Only one late submission will be accepted.** These descriptive essays or reactions will be relatively short, about one and half pages each. These posting assignments are intended to not only substitute for a classroom experience, but are also sequenced in such a way to help you develop your thoughts and the presentation of your thoughts that will be incorporated into the major paper.

For each section assignment there will be a basic question that you must respond to with a short essay. In addition, you should make an additional comment related to the topic, reading or another student comment, or ask a good question. So for each section assignment there will be a **minimum of two posts required.** The short essay should be about 3-4 paragraphs. The additional comment and/or question should demonstrate that you have done the readings. They should be about specific concepts covered in the reading, issues raised by the reading, or issues raised by another student's comment. The additional comment or question is due **one day before** the short essay is due. For any post in the discussion forums and each short essay, in addition to content, as a WI course, grammar, spelling, and organization are important.

Thus, each section assignment is worth 25 points (20 points for the short essay; 5 points for the comment or question). So to receive the full 25 points, you will not only need to write a good essay that shows that you have done the reading, but also make an additional comment or ask good questions. The best students learn to kill two birds with one stone. They ask good questions related to the essay topic **BEFORE** they work on their short essay. Hopefully, a good question will receive a good answer from me and/or another student. **Ideally we would function as a team.**

Because this is WI course I will be giving feedback via e-mail on the short essays and via Word attachments to e-mail for the paper.

Please feel free also to e-mail me at any time if you have questions at:

pine@hawaii.edu (primary e-mail address for our course)

rncpine@yahoo.com (backup e-mail addresses)

Major Paper: You will have one, five page minimum, double-spaced paper to write. We will be using a draft/revision method of interaction. For the paper, I will be giving you the paper focus with guidelines several weeks in advance of the due date for a draft of the paper. When you hand in the first draft of the paper, I will not grade the paper at that time, but ten points will be deducted from the final draft if the first draft is not handed in on time. I will give you significant feedback. With that feedback, you will then have some time (see schedule) to polish your paper and hand in a final draft. I will then grade the final draft based on understanding of content, clear writing, organization, and grammar.

**Note:** For efficient interaction and WI feedback, it is preferable that you use the widely used
Microsoft Word word processing program, and know how to send Word attachments via e-mail. If you don't have or use this program, and/or don't know how to send an e-mail attachment, be sure to let me know early in the semester. It is also possible to use the program OpenOffice that is almost identical to Word and is free online. If you use WordPerfect or Works, we will have problems unless you test with me various submission options. Later versions of these word processors allow saving documents in what is called “Rich Text Format” and “Word 97 Format.” But we will need to test the process. So, important, if you are using either or these word processors, let me know EARLY in the semester.

Final Exam: We will have a final exam at end of the course. The exam must be taken at an approved proctoring test location, generally at one of the public colleges in the State of Hawaii (click here) or an approved college or military testing site out of state. If you are not going to be taking the exam within the State of Hawaii, you need to let me know early in the semester and we need to arrange proctoring early.

To do well in this course you should find yourself doing a little bit of writing day by day. The total amount of writing is only about 20 pages for the whole semester (16 is the bare minimum WI requirement). Good writing takes time. You have to think about every sentence and paragraph. Proofreading every submission is essential. Furthermore, the essay and WI-method of evaluation used in this course are based on the assumption that clear, well-organized writing is a way of acquiring, analyzing, and communicating knowledge, and that the act of writing does not merely record thought or even simply reformulate it -- it generates thought. In other words, in many disciplines you don't really know what you know until you write about it. To fully understand the WI aspect of this course, please also see the WI application for this course. It will help you understand the connection between the University of Hawaii system WI hallmarks and the standards that must be applied to evaluation of your work.

Also, very very important. Please read the course policy on Plagiarism.
Philosophy 255: Course Mechanics

- As an online course we have lots of flexibility up to a point. Although there are deadlines for section assignments and a draft of the major paper, you get to decide during the week when you participate in the course. Via e-mail and our discussion forums I will be available to you throughout each week. You can of course also call me at 845-8163. Leave a clear voice mail message if I am not in. I return calls and e-mails almost always the same day. Usually within hours. Every morning I try to answer all discussion forum questions before my on-campus courses begin. I will also be answering discussion forum questions throughout the day. Late at night and on the weekends expect me to be a little slower. I do have a family and a life.

- Following the Schedule, doing the reading in a timely manner, posting questions early in the week using the Laulima class discussion program, and posting the short essays for the section assignments are very important. The posting location (Laulima Discussion program) for the short essay section assignments will also be used for class discussion and questions.

The first draft of the paper is very important. Students who put quality time into the draft, in terms of proofreading for grammatical and spelling mistakes, enable me to have more time to help them with the conceptual presentation which virtually guarantees a good grade. Late night-before-the-draft is due, last minute, it's-only-a-draft papers are obvious and are not received with much aloha by me. The secret to good writing is "revise, revise, revise," and that takes quality time.

As noted in the Assignments section, our goal is not a lot of writing but rather quality writing. So, all correspondence with me -- paper, section assignment short essays, questions, comments, even e-mails should go through a draft-revision process with careful proofreading. If you don't already know how, I will teach you how to use a word processor first to compose all your writing and then cut and paste that writing into e-mails or our Laulima Discussion Forum program (class bulletin board). Your major paper will be submitted to me via e-mail word processor attachments. Since the word processor program Word is used by 99% of the computing world, it is the best program to learn to use for this process if you don't already know how to use it. If you don't use this program (either on a Mac or PC) it will make interaction more difficult, but not impossible. Another alternative is the program OpenOffice, a virtual clone of Word. This program can be downloaded free on the Internet. Later versions of WordPerfect and Works also work well, as long as they have the save-as options of "Rich Text Format" and/or "Word 97 Format." As the Course Assignments section notes, if you are not using Word, you need to let me know early in the semester.

- The readings, class interaction, posting assignments, and the draft of the paper should require at least 5 hours per week. Please understand that for every hour you don't put in one week, you will have to add that many hours to the next week's work to catch up.

- Each chapter from the textbook Science and the Human Prospect represents essentially the main lecture portion of the course. Each chapter will also have a lecture supplement that highlights and repeats important points in the chapter. Once the Main Page for the course is activated at the Laulima gateway site, the Main Page will be the gateway page for the rest of the semester. You will read supplementary lectures, post your short essays, and get further explanations (summaries) on important concepts covered in the chapters.
To access the course after registering, login at the UH Laulima site: https://laulima.hawaii.edu/portal
Use your UH e-mail login name and password.

To summarize the basic mechanics, here is how the course works. Follow the Schedule and do the appropriate reading. Next access the Main Page and read the supplement lecture for the appropriate reading. Go to the Laulima Discussion and Private Messages in Laulima, click on the appropriate section Discussion/Assignment and post any questions you have on the reading. Read the question for a short essay. Prepare a short essay via a word processor that demonstrates your understanding of the reading assignment and lecture. Post (cut and paste) your essay using the Laulima Discussion program. Be sure to ask questions, prepare a general comment, or comment on at least one other student's comment the day before the short essay is due. Following the schedule, prepare a draft for the major paper on the topic I assign. Hand it in by the draft due date (noted on the Main Page) for feedback. Revise the draft after receiving my feedback and hand it in at the end of the course (due date noted on Main Page).