

**General Education Course Information Sheet**  
*Please submit this sheet for each proposed course*

Department & Course Number Philosophy 98T  
 Course Title Infinity in Philosophy  
 Indicate if Seminar and/or Writing II course Seminar

1 Check the recommended GE foundation area(s) and subgroup(s) for this course

**Foundations of the Arts and Humanities**

- Literary and Cultural Analysis \_\_\_\_\_
- Philosophic and Linguistic Analysis X
- Visual and Performance Arts Analysis and Practice \_\_\_\_\_

**Foundations of Society and Culture**

- Historical Analysis \_\_\_\_\_
- Social Analysis \_\_\_\_\_

**Foundations of Scientific Inquiry**

- Physical Science \_\_\_\_\_  
*With Laboratory or Demonstration Component must be 5 units (or more)* \_\_\_\_\_
- Life Science \_\_\_\_\_  
*With Laboratory or Demonstration Component must be 5 units (or more)* \_\_\_\_\_

2. Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) chosen.

The proposed course traces the conceptions of infinity as they occur in theories and arguments through the history of philosophy. Course readings are philosophical works, and course essays are philosophical in nature.

3. "List faculty member(s) who will serve as instructor (give academic rank):  
 Eileen S. Nutting (graduate student) [Mentor: John Carriero (professor)]

Do you intend to use graduate student instructors (TAs) in this course?      Yes                  No  
 \_\_\_\_\_  
 If yes, please indicate the number of TAs    x

3. Indicate when do you anticipate teaching this course over the next three years:

2011-2012	Fall	_____	Winter	_____	Spring	<u>X</u>
	Enrollment		Enrollment		Enrollment	18

3. GE Course Units

Is this an ***existing*** course that has been modified for inclusion in the new GE?      Yes                  No      X  
 If yes, provide a brief explanation of what has changed.

Present Number of Units:      N/A                                  Proposed Number of Units:      **5**

3. Please present concise arguments for the GE principles applicable to this course.

<input type="checkbox"/> General Knowledge	The central course concept, infinity, appears in a wide range of disciplines. Students will be trained in the careful and rigorous philosophical methods of examining and developing arguments. They will also get a taste of other methods, e.g., mathematical proof.
<input type="checkbox"/> Integrative Learning	The approaches to infinity we consider range from (a) the philosophical; to (b) the mathematical; to (d) the scientific. They also cover a wide range of historical periods (ancient, medieval, early modern, contemporary).
<input type="checkbox"/> Ethical Implications	
<input type="checkbox"/> Cultural Diversity	Diverse world-views pervade the readings for this course. For example, the centrality of God is inescapable in our medieval readings, as is the analogous centrality of math and science in contemporary readings. These philosophers are products of diverse cultures.
<input type="checkbox"/> Critical Thinking	Assignments and discussions are designed (a) to get students to improve reading comprehension through close reading and interpreting presented views charitably and robustly, and then (b) to critically examine those views. Both are critical thinking skills.
<input type="checkbox"/> Rhetorical Effectiveness	Enormous emphasis will be placed on the clarity and precision of written and oral communication. Essays steadily increase in complexity to allow students to reinforce more basic skills in argument and communication while developing more advanced ones.
<input type="checkbox"/> Problem-solving	Close readings teach students to glean information from textual sources. Interpreting views/arguments trains students to develop fragments into coherent pictures. Critical appraisals of those views teaches students to assess the quality of developed ideas.
<input type="checkbox"/> Library & Information Literacy	

**(A) STUDENT CONTACT PER WEEK (if not applicable write N/A)**

1. Lecture:	N/A	(hours)
2. Discussion Section:	3	(hours)
3. Labs:	N/A	(hours)
4. Experiential (service learning, internships, other):	N/A	(hours)
5. Field Trips:	N/A	(hours)

**(A) TOTAL Student Contact Per Week** 3 **(HOURS)**

**(B) OUT-OF-CLASS HOURS PER WEEK (if not applicable write N/A)**

1. General Review & Preparation:	3	(hours)
2. Reading	5	(hours)
3. Group Projects:	N/A	(hours)
4. Preparation for Quizzes & Exams:	N/A	(hours)

- |                                    |     |         |
|------------------------------------|-----|---------|
| 5. Information Literacy Exercises: | N/A | (hours) |
| 6. Written Assignments:            | 4   | (hours) |
| 7. Research Activity:              | N/A | (hours) |

<b>(B) TOTAL Out-of-class time per week</b>	<b>12</b>	<b>(HOURS)</b>
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<b>GRAND TOTAL (A) + (B) must equal at least 15 hours/week</b>	15	<b>(HOURS)</b>
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# INFINITY IN PHILOSOPHY

Philosophy 98T, Spring 2012

Instructor: Eileen Nutting

330 Dodd Hall

enutting@humnet.ucla.edu

Office Hours: TBD

## Course Description

This is a seminar on the history of the concept of infinity. We will attempt to understand the different conceptions of infinity that we find in the writings of some intellectual giants of the past. We will learn how to apply these conceptions of infinity to examples beyond the ones that we find in historical texts. We will also examine the way the concept of infinity has been used in philosophical arguments over the past 2500 years.

Since this is a philosophy class, rather than an intellectual history class, we will attempt to evaluate these historical conceptions of infinity. We will ask questions about whether or not the various conceptions are viable and/or useful, and about whether or not the relevant philosophical arguments employ the concept of infinity in legitimate ways.

Some of the ideas we consider in this course will be mathematical ideas. Do not be intimidated! You will not be asked to read *any* mathematical work, and no mathematical background is required to understand any of the material we will cover (except, perhaps, the ability to continue the natural number sequence: 1, 2, 3, 4, 5, 6, 7, ...).

## Course Expectations

This course is worth 5 credits, and the workload is set accordingly. You should expect to do a little more work than average for this course – ideally you will dedicate about 12 hours/week outside of class to reading, writing, studying, and thinking hard about the issues under consideration. These are university guidelines. Students are expected to complete *all* of the weekly readings and submit all four essays on time. Given the seminar style, students are also expected to participate actively in classroom discussions.

## Course Objectives

1. Skill: extract the structure and content of an argument from a philosophical text
2. Skill: critically appraise uses of concepts in philosophical arguments (practicing with concept of infinity)
3. Skill: improve ability to write and speak in a way that facilitates the communication of complex ideas
4. Content: understand at least three different conceptions of infinity and how to apply them
5. Skill: pursue an ordinary question or insight and develop it into a substantial paper project
6. General: appreciate great historical figures as complex thinkers with sophisticated ideas

## Grading

Participation: 10%

Essay 1: 15%

Essay 2: 20%  
Essay 3: 25%  
Final Essay: 30%

## Weekly Readings

Philosophy can be difficult to read. It takes a different style than most of the things you are familiar with reading, and that style can come across as dense and hard to penetrate. Don't be discouraged if you have trouble with the reading, especially in the first few weeks. Try to make sense of what you can, but much of seminar discussion will be dedicated to making sense of the readings and developing the skills necessary to read philosophy more fluently.

Each week, three or four key passages will be identified in the reading for the upcoming week. Each student will be assigned to pay particular attention to one or another of those passages. If asked, you will be expected to introduce the passage that you have been assigned. Questions about that passage may be directed to you. This does not mean that you must completely *understand* the passage, but you must be familiar with it for class, and you must be able to identify some of the areas that confuse you.

## Participation

I expect this to be an interactive seminar. This is for your own benefit; the more you practice asking questions and engaging in dialogue in the seminar setting, the better you will develop your critical thinking skills. But participation alone does not necessarily contribute to developing these skills; *high quality* participation does.

You will be graded on the *quality* of your participation in seminar. The best participation is *honest, thoughtful, on-topic, and understanding-aimed or truth-aimed*. High quality participation can come in many forms, including asking questions in order to make sense of the material, presenting ideas that you think will further the discussion, and responding to questions about the passages you have been assigned in a manner that shows that you engaged with the reading.

## Essays

You will write four essays for this course. The form of these essays will likely be very different from the essays you are accustomed to writing. Fortunately, there are resources available to help you. For links to philosophical writing guides by Jim Pryor, Peter Horban, and me, go to my departmental website:

<http://www.philosophy.ucla.edu/index.php/user-profile-one/userprofile/enutting>

### *Essay 1: ~500 words, due in Week 2*

Prompt: In the first two paragraphs of Chapter 5 of Book III of the *Physics*, Aristotle argues that “It is impossible that the infinite should be a thing which is itself infinite, separable from sensible objects.” In plain and ordinary English, explain what claim Aristotle is making here and how he argues for it.

Before writing: notice that this short essay is *entirely expository*. No part of this essay should be dedicated to agreeing or disagreeing with Aristotle's claim or argument. Instead, your task is

simply to translate Aristotle-speak into ordinary English, and to describe Aristotle's ideas in a way that your friends here at UCLA could understand fairly easily.

*Essay 2: ~1000 words, due in week 4*

Prompt: Three essay prompt options will be distributed by email the day after seminar meets in week 2. (Potential prompts may be affected by the direction of the day's discussion.) Pick one. You are asked to explain an argument and come up with an objection to it. Skip a line after the end of the essay, and write a sentence in italics telling me whether or not you think your objection would withstand careful scrutiny. Write another italicized sentence explaining why. Your two-sentence evaluation of the objection will have no impact on your grade.

**Please bring two copies of your second paper to class.** In class, you will read and provide feedback on a paper written by a classmate on one of the two prompts you did not pick. In addition to giving you some insight into another topic, and giving your classmate some additional feedback, this will give you some idea of what is required to communicate to an audience that is not entirely immersed in your particular topic.

Before writing: you will receive your first essays back in seminar in week 3. Some of the comments on your first paper will be about your writing style. Read these comments and try to incorporate suggestions into the way you write this second essay.

*Essay 3: ~1500 words, due in week 7*

Prompt: You will receive four or five essay prompts by email the day after seminar meets in week 4. Pick one. This third essay builds on the components of the first two essays. You are asked to explain an argument, raise an objection to that argument, and critically assess the objection.

Before writing: you will receive your second essay back in seminar in week 5. Read the comments you get on writing style in that paper, and try to incorporate them into the way you write this third essay.

*Final Essay: ~2000 words, due 5pm Friday of Exams Week*

Final Essay Prompt: You will have to come up with your own prompt for this essay. In seminar, we will discuss strategies for coming up with an essay prompt. (I will also let you know if you have an idea that I think would make a promising final essay). **Tentative essay prompts will be due in week 8, and everyone will present 2-3 minute briefs of their topics to their classmates in week 10.** After each brief, there will be an opportunity for questions, observations, and suggestions from others in the class (and from me).

This essay can take one of several forms. You might do something in the style of essay 3, just in greater depth. Or, you might consider an argument or idea we have encountered and attempt to construct an account of infinity that we can use in that argument or idea to make it more plausible. Or you might try to ground one conception of infinity in another conception of infinity. Other options are open as well. We will discuss possibilities in class.

**Academic Honesty**

All essays must be *entirely your own* work. It is acceptable (and encouraged!) for you to discuss the readings with classmates, but essays are to be completed independently. In class, we will discuss

what does and what does not qualify as plagiarism. The basic idea is this: you plagiarize when you use words or ideas that are not your own, and fail to cite the sources of those ideas or words.

Practice academic honesty. Failing to do so has three harmful consequences:

- (1) it prevents you from developing the skills and knowledge that the assignment is designed to help you develop;
- (2) it prevents you *and your classmates* from being graded fairly; and
- (3) it is immoral.

If you get caught, there are additional bad consequences for you:

- (4) you will have an unpleasant conversation with me about it;
- (5) I will report your plagiarism case to the dean, who has the power to suspend you, expel you, or put you on academic probation; and
- (6) your grade will inevitably suffer.

Plagiarism just isn't worth it.

## Schedule

### Week 1

Preliminaries, overview of the course, intuitive ideas of infinity, introduction to Aristotle

### Week 2

Read before class: Aristotle's *Physics*, Book III, 4-8 (203b15-208a25)

Essay 1 due.

Essay 2 prompts distributed.

### Week 3

Read before class: Aristotle's *Physics*, Book VI (231a20-241b20), and Book VIII, 8-10 (261b27-267b26). The first part is on Zeno's Paradoxes, and the second part is on the Prime Mover.

Essay 1 returned.

### Week 4

Read before class: Aquinas *Summa Theologiae* Pars I q.2 a.3 (*Does God exist?*) (Available on Fred

Freddoso's website: <http://www.nd.edu/~afreddos/summa-translation/TOC-part1.htm> )

Aquinas's arguments are in the spirit of Aristotle's in *Physics VIII*.

Essay 2 due.

Essay 3 prompts distributed.

### Week 5

Read before class: Bonaventure *Commentaria in Quatuor Libros Sententiarum* (*Commentaries on the Four Books of Sentences*) Book II, Commentary on Discussion 1, Question 1, Article 2 (Available at:

<http://www.franciscan-archive.org/bonaventura/opera/bon02019.html>);

Aquinas *On the Eternity of the World* (Robert Miller's translation available at:

<http://www.fordham.edu/halsall/basis/aquinas-eternity.html>)

Essay 2 returned.

### Week 6

Read before class: Aquinas *Summa Theologiae* Pars I q.14 a. 12, q.7, q.8, q.10 a.1-4 (*God as infinite*)  
(Available at Fred Freddoso's website, see link above)

*Week 7*

Read before class: Leibniz and Berkeley excerpts (in Robert Baum *Philosophy and Mathematics: From Plato to the Present*, pp. 167-170 and 184-192)  
Essay 3 due.

*Week 8*

Read before class: Mathematical handouts (by me). (These handouts are written for a non-mathematical audience. They provide overviews of the Weierstrass definition of continuity, the Dedekind definition of infinity, nonstandard models of arithmetic, and Robinson arithmetic. These contemporary mathematical ideas bear on some of the issues we have considered about infinity, especially the ideas of Zeno, Bonaventure, Leibniz, and Berkeley.)  
Essay 3 returned.  
Final Essay prompts due.

*Week 9*

Read before class: Russell, "Mathematicians and Metaphysicians"

*Week 10*

Recap week (no new reading)  
In-class briefs on final essay topics

*Exams Week*

Friday 5pm: Final Essay due





## New Course Proposal

### Philosophy 98T Infinity in Philosophy

**Course Number** Philosophy 98T

**Title** Infinity in Philosophy

**Short Title** INFINITY-PHILOSOPHY

**Units** Fixed: 5

**Grading Basis** Letter grade only

**Instructional Format** Seminar - 3 hours per week

**TIE Code** SEMT - Seminar (Topical) [T]

**GE Requirement** Yes

**Major or Minor Requirement** No

**Requisites** Satisfaction of entry-level Writing requirement. Freshmen and sophomores preferred.

**Course Description** Seminar, three hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Freshmen/sophomores preferred. Exploration of philosophical history of concept of infinity. Consideration of different notions of infinity in writings of intellectual giants like Aristotle, Aquinas, and Bertrand Russell on topics like space, God, and numbers. Letter grading.

**Justification** Part of the series of seminars offered through the Collegium of University Teaching Fellows.

**Syllabus** File [Philosophy 98T.doc](#) was previously uploaded. You may view the file by clicking on the file name.

**Supplemental Information** Professor John Carriero is the faculty mentor for this seminar.

**Grading Structure** Participation: 10%  
Essay 1: 15%  
Essay 2: 20%  
Essay 3: 25%  
Final Essay: 30%

**Effective Date** Spring 2012

**Discontinue Date** Summer 1 2012

<b><u>Instructor</u></b>	Name	Title
	Eileen S. Nutting	Teaching Fellow

**Quarters Taught**  Fall  Winter  Spring  Summer

**Department** Philosophy

<b><u>Contact</u></b>	Name	E-mail
	CATHERINE GENTILE	cgentile@oid.ucla.edu

**Routing Help**

### ROUTING STATUS

**Role:** Registrar's Office

**Status:** Processing Completed

**Role:** Registrar's Publications Office - Hennig, Leann Jean (lhennig@registrar.ucla.edu) - 56704

**Status:** Added to SRS on 6/20/2011 2:08:04 PM

**Changes:** Description

**Comments:** Edited course description into official version.

**Role:** Registrar's Scheduling Office - Thomson, Douglas N (dthomson@registrar.ucla.edu) - 51441

**Status:** Added to SRS on 6/2/2011 7:20:37 PM

**Changes:** Short Title

**Comments:** No Comments

**Role:** FEC School Coordinator - Soh, Michael Young (msoh@college.ucla.edu) - 65282

**Status:** Returned for Additional Info on 5/25/2011 10:44:03 AM

**Changes:** No Changes Made

**Comments:** Routing to Registrar's Office

**Role:** FEC Chair or Designee - McClendon, Muriel C (mcclendo@history.ucla.edu) - 53918

**Status:** Approved on 5/25/2011 8:25:23 AM

**Changes:** No Changes Made

**Comments:** No Comments

**Role:** L&S FEC Coordinator - Soh, Michael Young (msoh@college.ucla.edu) - 65282

**Status:** Returned for Additional Info on 5/18/2011 5:29:06 PM

**Changes:** No Changes Made

**Comments:** Routing to Vice Chair Muriel McClendon for FEC approval

**Role:** CUTF Coordinator - Gentile, Catherine (cgentile@oid.ucla.edu) - 68998

**Status:** Approved on 5/12/2011 3:37:40 PM

**Changes:** No Changes Made

**Comments:** on behalf of Professor Kathleen Komar, chair, CUTF Faculty Advisory Committee.

**Role:** Initiator/Submitter - Gentile, Catherine (cgentile@oid.ucla.edu) - 68998

**Status:** Submitted on 5/12/2011 3:36:39 PM

**Comments:** Initiated a New Course Proposal

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Comments or questions? Contact the Registrar's Office at  
[cims@registrar.ucla.edu](mailto:cims@registrar.ucla.edu) or (310) 206-7045