

Interdisciplinary Course
Origins:
A Dialogue Between Scientists and Humanists

Physics 43 – Religious Studies 43

Enrollment Code: 38075

Spring 2009

TR 3:30-4:45 PM; NH1105

<http://www.physics.ucsb.edu/~tt/ORIGINS09>

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Course Description:

This course is intended to introduce students to the ways in which different disciplines have addressed the concept of origins. In particular, this course is organized as a dialogue between science, religion, and history, or more broadly, between science and humanities. The dialogue will be focused around how religion and science raise and answer fundamental questions about the origins of the cosmos. Is the Earth a special or unique place? How do science and religion understand time, its beginnings and its ends? What is the place of the human in the universe? Discussion of these questions will not only provide the students with an understanding of some of the main theories, but also with questions of methodology and the epistemological foundation of different disciplines.

Required Textbooks:

Martin Rees, *Our cosmic habitat*, Princeton UP 2001

Adam Frank, *The constant fire: beyond the science vs. religion debate*, UC Press 2009

NB: note that there this book MUST be read by June 2nd, because this book will be the basis for our roundtable discussion. You can read the book the week before the deadline, or you can start reading the book whenever you want: we leave you the choice, as long as all students read it by the deadline above.

All the other reading assignments have been collected into a course reader, available for purchase at the A.S. Publication Window, located in the University Center.

Course Protocol and Requirements:

The course is structured around lectures, discussion sections, and roundtable discussion in lecture. Students are asked to complete the weekly readings BEFORE lecture, and to come prepared for the discussion both in lecture and section –we remind students that participation in the section is mandatory.

GRADING SCHEME:

Section participation: 15% (any assignment that the TA might give you will be graded within this rubric)

Midterm (in-class, essay questions): 30%

Paper (1,800 words): 40%

Final (in-class, multiple choice): 15%

There will be no make-up or early exams, so please plan your schedules accordingly. Please note that the papers are due on or before May 26th, and that late papers will not be accepted, unless in exceptional and exceptionally well-documented circumstances. More details on the topic and format of the paper will be given in class. Finally, please note that all the assignments have to be fulfilled in order to pass the class.

Seminar Topics and Reading Assignments:

March 31 – Introduction to the course (Professors Hecht, Treu, Tutino)

April 2 – Methodological Introduction (Professor Hecht)

Reading Assignment: Selections from Amos Funkenstein, *Theology and the Scientific Imagination*. Immanuel Kant, *Religion within the Limits of Reason Alone*.

April 7 – Methodological Introduction (Professor Tutino)

Reading Assignment: Marc Bloch, *The Historian's Craft*, excerpts

April 9 – Is Earth a Special or Unique Place? (Professor Tutino)

Reading Assignment: H.Gatti, *Giordano Bruno and Renaissance Science*, excerpts

April 14 – Is Earth a Special or Unique Place? (Professor Tutino)

Reading Assignment: Galileo Galilei's *Letter to Castelli*, Robert Bellarmine's *Letter to Foscarini* and M.A. Finocchiaro, 'Science, Religion, and the Historiography of the Galileo Affair'

April 16 – Is Earth a Special or Unique Place? (Professor Hecht)

Reading Assignment: Genesis 1:1-2:4; "Hainuwele and the 'Creative Murder,'" "Io and the Maori Cosmogony," "Polynesian Theogony and Cosmogony," "An Earth-Diver Creation Myth," "Mesopotamian Cosmogony," and "Who can say whence it all came, and how creation happened?"

April 21 – Is Earth a Special or Unique Place? (Professor Hecht)

Reading Assignment: Selections from the decision of the US District Court for the Middle District of Pennsylvania, 20 December, 2005 and Ronald L. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*.

April 23 – Methodological Introduction (Professor Treu)

Reading Assignment: Karl Popper, *The logic of scientific discovery*, Chapters 1 and 10, extracts in reader.

April 28 – Is Earth a Special or Unique Place? (Professor Treu)

Reading Assignment: Martin Rees, *Our cosmic habitat*, part I. Discussion of scientific evidence of extrasolar planets.

April 30 – Is Earth a Special or Unique Place? (Professor Treu)

Reading Assignment: Martin Rees, *Our cosmic habitat*, part I. Discussion of our location in the Universe, homogeneity and isotropy of the Universe.

May 5 – Roundtable discussion (Professors Hecht, Treu, Tutino)

May 7 – **MIDTERM**

May 12 – Time, Beginning, End (Professor Hecht)

Reading Assignment: Selections from Moshe ben Nachman "Introduction" to the Commentary on Torah" and Baruch Spinoza, "How to Read Scripture" from *Tractatus Theologico-Politicus* (1670).

May 14 – Time, Beginning, End (Professor Hecht)

Reading Assignment: Albert Einstein, "Science and Religion," *Nature* (1940).

May 19 – Time, Beginning, End (Professor Tutino)

Reading Assignment: Augustine, *Confessions*, Book XI

May 21 – Time, Beginning, End (Professor Tutino)

Reading Assignment: G.T.Moran, 'Conceptions of Time in Early Modern France: an approach to the history of collective mentalities', *Sixteenth Century Journal* vol.XII n.4 (1981), pp.3-16; E.P. Thompson, 'Time, work-discipline, and industrial capitalism', *Past and Present*, vol.38 (1967), pp.56-97

May 26 – Time, Beginning, End (Professor Treu) **PAPER DUE!**

Reading Assignment: Rees, *Our cosmic habitat*, part II. A brief history of cosmic time.

May 28 – Time, Beginning, End (Professor Treu)

Reading Assignment: Rees, *Our cosmic habitat*, part II. A brief history of cosmic time.

NB: In order to prepare for the roundtable discussion, you must have finished reading Adam Frank's *The constant fire*.

June 2 – Roundtable discussion (Professors Hecht, Treu, Tutino)

June 4 – Review for the final (Professors Hecht, Treu, Tutino)

June 11 - FINAL EXAM 4-7PM