

History/Physics 50 (First Year Seminar)
Time and the Medieval Cosmos

Tuesday and Thursday, 11-12:15, Alumni Hall, rm. 205



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COURSE DESCRIPTION

What is the cosmos? How do celestial bodies like the sun, moon, planets and stars seem to move, as viewed from Earth? What is the relationship between motion and space, time and history? How did people in the medieval past view the cosmos? What did the motions of heavenly bodies mean to them? What might such past views of the cosmos teach us today?

An interdisciplinary, team-taught first year seminar, *Time and the Medieval Cosmos* asks students to wrestle with these sorts of questions. The course introduces students to the basic motions of the solar system as viewed from the Earth and the mechanical and mathematical models used to reproduce them. Students will also learn how the reckoning of time connects to the motions of the celestial bodies and how to calculate the date of Easter in the Gregorian Calendar. Historically speaking, difficulties in calculating this date drove innovations in mathematics, engineering, and astronomy.

This course will also immerse students in the world of medieval and early modern education, theology, and natural philosophy, challenging them to understand the historical conditions that shaped views of the cosmos in the European Middle Ages. It will also explore the challenges posed to those medieval views of space, time, and the globe by the “discovery” of the New World and the Copernican model of the universe. Throughout the semester, the class will raise broader questions about the relationship between faith and reason, and the role of institutional authorities in determining the boundaries of “acceptable” knowledge.

REQUIRED TEXTS

D. Lindberg, *The Beginnings of Western Science*, 2nd ed.

Bede, *On the Nature of Things and On Times*, trans. C. Kendall and F. Wallis

Additional Readings will be posted on Sakai under Resources or distributed in class

COURSE OBJECTIVES & OUTCOMES

As an interdisciplinary course, *Time and the Medieval Cosmos* will challenge students to think like physicists and historians—two modes of inquiry and analysis that are not often placed together. Specifically, students in this class will learn how to:

- describe the basic motions of the stars and planets
- calculate lunar phases and Easter dates in the cyclical calendar
- contextualize and analyze historical primary source materials
- assess ancient, medieval, and modern cosmological models
- think critically about traditional definitions of medieval versus modern science

ASSIGNMENTS AND GRADING

As typical in a seminar, students will be expected to actively engage with the course materials and participate in class discussions. It is critical to complete all readings before class. The course includes a number of quizzes and tests. Over the course of the semester, students will also complete a number of assignments related to a historical figure from the course materials.

- Attendance: 5%
- Course Commitment and Participation: 15%
- Note-Taking Exercise: 5%
- Primary Source Inquiry Exercise: 10%
- Secondary Source Inquiry Exercise: 10%
- Final Presentations: 15%
- Weekly quizzes and pop-quizzes: 20%
- Midterm: 10%
- Final: 10%

Students will receive further details about these assignments as the semester progresses.

RESOURCES & OTHER INFORMATION

Students who wish to sharpen their writing skills or seek coaching for written assignments are encouraged to contact the UNC Writing Center (<https://writingcenter.unc.edu>).

For general assistance, mentoring, or counseling about student life, contact the Learning Center (<https://learningcenter.unc.edu>) or Student Wellness (<https://studentwellness.unc.edu>)

All students must be familiar with and abide by the Honor Code, which covers issues such as plagiarism, falsification, unauthorized assistance or collaboration, cheating, and other grievous acts of academic dishonesty (see <https://studentconduct.unc.edu>).

The Professors reserve the right to make reasonable changes to the syllabus, including project due dates and test dates. These changes will be announced as early as possible.

READINGS & ASSIGNMENTS

Course Introduction

Week 1

(8/20) Astronomy, Science, Clocks, and Calendars

(8/22) History and the Study of the Past

The Heavens and the Christian Cosmos

Week 2

Read: *Beginnings of Western Science*, chapters 1-5

(8/27) Astronomy and the Motions of the Heavens (I)

Assignment due: Note-taking exercise

(8/29) Astronomy and the Motions of the Heavens (II)

Assignment due: Weekly Quiz I

Week 3

Read: *Beginnings of Western Science*, chapter 7; Brown, "Bede's Life in Context"

(9/3) The Christian Cosmos

(9/5) The Problem of Easter

Week 4

Read: Bede, *On the Nature of Things* and *On Times*, 107-116

(9/10) The Moon, Seasons, and Calendar

(9/12) The Science of Computus

Assignment due: Weekly Quiz 2

Week 5

Bede, *On the Nature of Things* and *On Times*, 117-131; *On the Reckoning of Time* (handout)

(9/17) The Ages of the World

(9/19) The End of the Cosmos

Assignment due: Secondary Source Inquiry Exercise

Week 6

Bede, *Ecclesiastical History of the English People* (handout)

(9/25) Debate: The Synod of Whitby

(9/27) The Medieval Cosmos So Far (I)

The Cosmos Questioned

Week 7

Read: *Beginnings of Western Science*, chapter 8

(10/1) Visit to Special Collections

(10/3) Islamic science

Week 8 [Clemens]

Beginnings of Western Science, chapter 9; Buridan, "Questions on the Four Books on the Heavens," Oresme, "On the Book of the Heavens" (handouts)

(10/8) Aristotelian Natural Philosophy and Mechanics

(10/10) The Intention and Remission of Forms and Mean Speed Theorem

Assignment due: Weekly Quiz 3

Week 9

(10/15) Practice Problems in Mechanics

Take-home midterm issued

(10/17) Fall Break: no class

Week 10

Beginnings of Western Science, chapter 10; Aquinas, *On the Power of God* (handout)

(10/22) Debate: The Eternality of the World

(10/24) The Medieval Cosmos So Far (II)

Assignment Due: Take-home Midterm

The Cosmos Reimagined

Week 11

Read: Columbus, *Four Voyages* (handout)

(10/29) New Worlds

(10/31) Imagined Worlds

Assignment Due: Primary Source Inquiry Exercise

Week 12

Copernicus, "On the Revolution of the Celestial Orbs" (handout)

(11/5) The Copernican Revolution (I)

(11/7) The Copernican Revolution (II)

Assignment due: Weekly Quiz 4

Week 13

Beginnings of Western Science, chapter 14

(11/12) Visit to Morehead? A third "debate" over Copernicus?

(11/14) Time and the Medieval Cosmos So Far (III)

Week 14

(11/19) Student Presentations (I)

(11/21) Student Presentations (II)

Week 15

(11/26) Student Presentations (III)

(11/28) Thanksgiving: No Class

Week 16

(12/4) Course Wrap-Up

Final Exam: 12/12, noon