

Topics in the History of Science: Science and Religion in the Seventeenth Century

Course Number: Historical Studies 541

Institution: University of Calgary

Instructor: M. J. Osler

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The purpose of this course is to explore the different ways that science and religion interacted during the seventeenth century. Special attention will be devoted to the theological dimensions of natural philosophy and the role of theological issues in the search for a new philosophy of nature. Reading of primary sources along with relevant interpretative material will provide the basis for class discussions and research papers.

1. Course Requirements

For Undergraduate Students

Take-home mid-term: 15%

Take-home final: 20%

Research paper: 40%

Participation: 25%

For Graduate Students

Annotated bibliography: 25%

Research paper: 50%

Participation: 25%

ALL WRITTEN WORK MUST CONFORM TO THE Department of History Essay Guide, which is available in the bookstore and on the History Department's Home Page. Be sure to read the section on plagiarism carefully and make sure that you give proper credit to the sources of your work. Failure to do so will result in a failing grade and possible disciplinary action.

NB: All assignments must be completed in order to pass the course

2. Textbooks

Robert Boyle, *A Free Enquiry into the Vulgarly Received Notion of Nature*, edited by Edward B. Davis and Michael Hunter (Cambridge University Press)

Edwin Arthur Burt, *The Metaphysical Foundations of Modern Science*

Betty Jo Teeter Dobbs and Margaret C. Jacob, *Newton and the Culture of Newtonianism* (New Jersey: Humanities Press, 1995)

3. Reserve Books

David C. Lindberg and Ronald L. Numbers, *God and Nature*

John Hedley Brooke, *Science and Religion, Some Historical Perspectives*

Margaret J. Osler, *Divine Will and the Mechanical Philosophy*

Henry More, *A Collection of Several Philosophical Works*, 2 vols.

Richard S. Westfall, *Science and Religion in Seventeenth-Century England*

John Brooke and Geoffrey Cantor, *Reconstructing Nature: The Engagement of Science and Religion*

H. G. Alexander, ed., *The Leibniz-Clarke Correspondence*

B. J. T. Dobbs, *The Janus Faces of Genius: The Role of Alchemy in Newton's Thought*

Charles B. Schmitt and Quentin Skinner, editors, *The Cambridge History of Renaissance Philosophy*

Jan Wojcik, *Robert Boyle and the Limits of Reason*

4. Weekly Assignments

Readings for each week must be completed before the class meeting in order to ensure that an informed discussion can take place.

Jan. 11 Introduction

Margaret J. Osler, "Mixing Metaphors: Science and Religion or Natural Philosophy and Theology in Early Modern Europe," *History of Science*, 1998, 35: 91-113.

Brooke and Cantor, *Reconstructing Nature*, Section 1

John Hedley Brooke, *Science and Religion: Some Historical Perspectives*, Chapters 1 and 2.

Jan. 18 The Search for a New Philosophy of Nature

Required:

Paul Oskar Kristeller, "Humanism," in *The Cambridge History of Renaissance Philosophy*

And the section on "Natural Philosophy"

Burtt, *The Metaphysical Foundations of Modern Science*, Chapters I-III

Suggested:

Gary B. Deason, "Reformation Theology and the Mechanistic Conception of Nature," in Lindberg and Numbers, *God and Nature*

Jan 25 The Foundation of the Mechanical Philosophy: The Restoration of Ancient Atomism

Required:

Walter Charleton, *Physiologia*, Book I, Chaps. III, IV, V; Book II, Chaps. I, III, IV; Book III, Chaps. I, XV, and selected others

Suggested:

Robert Kargon, *Atomism in England*

Feb. 1 The Foundation of the Mechanical Philosophy: The Cartesian alternative

Required:

Descartes, Principles of Philosophy, Parts I and II (translated by Valentine Rodger Miller and Reese P. Miller)

Descartes, Discourse on Method

Burt, Chapter IV

Suggested:

Daniel Garber, Descartes' Metaphysical Physics

Peter Dear, Mersenne and the Learning of the Schools

Feb. 8 Divine Will and the Mechanical Philosophy

Required:

M. J. Osler, Divine Will and the Mechanical Philosophy, Introduction, Chaps. 1-6.

Suggested:

Francis Oakley, Omnipotence, Covenant, and Order

Feb. 15 Hobbes and the Danger of Materialism

Required:

Thomas Hobbes, De corpore, Parts II and IV

Burtt, Chapter V (pp. 126-134)

Suggested:

Frijthof Brandt, Thomas Hobbes' Mechanical Conception of Nature

M. M. Goldsmith, "Hobbes: Ancient and Modern," in Tom Sorell, *The Rise of Modern Philosophy*

Feb. 22 Physics and the Immortality of the Soul

Required:

Either, Kenelm Digby, *The Second Treatise . . . in Two Treatises*

Or, Walter Charleton, *The Immortality of the Soul*

March 1 Reading Week

March 8 Henry More and the Limits of Mechanism

Required:

Henry More, *An Antidote Against Atheism*

Burtt, Chapter V (pp. 140-161)

Suggested:

Alan Gabbey, "Henry More and the Limits of Mechanism" and

Alison Coudert, "Henry More and Witchcraft," both in Sarah Hutton, ed., *Henry More*

John Henry, "Occult Qualities and the Experimental Philosophy: Active Principles in Pre-Newtonian Matter Theory," *History of Science*, 1986, 24: 335-381.

March 15 Boyle and Providential Natural Philosophy, I

Required:

Robert Boyle, *A Free Enquiry into the Vulgarly Received Notion of Nature*, Introduction and pp. 1-78
Suggested:

John Henry, "Henry More versus Robert Boyle: The Spirit of Nature and the Nature of Providence," in Hutton, ed., *Henry More*

Margaret J. Osler, "The Intellectual Origins of Robert Boyle's Philosophy of Nature: Gassendi's Voluntarism and Boyle's Physico-Theological Project," in Richard Kroll, Richard Ashcraft, and Perez Zagorin, eds., *Philosophy, Science, and Religion in England, 1640-1700*.

March 22 Boyle and Providential Natural Philosophy, II

Required:

Robert Boyle, *A Free Enquiry into the Vulgarly Received Notion of Nature*, pp. 79-165.

Burtt, Chapter VI

Suggested:

Keith Hutchison, "What Happened to Occult Qualities in The Scientific Revolution?" *Isis*, 1982, 73: 233-253.

March 29 Boyle and the Limits of Natural Philosophy

Required:

Robert Boyle, *A Discourse of Things above Reason*

Richard S. Westfall, Chapters 5, 6, 7

Suggested:

Jan W. Wojcik, "The Theological Context of Boyle's Things above Reason," in Michael Hunter, ed., *Robert Boyle Reconsidered*

Jan W. Wojcik, *Robert Boyle and the Limits of Reason*

April 5 Theology and Alchemy in Newton's Natural Philosophy

Required:

Dobbs and Jacob, *Newton and the Culture of Newtonianism*, Chapter 1

Burt, Chapter VII

Suggested:

B. J. T. Dobbs, *The Janus Faces of Genius*

Richard S. Westfall, *Never at Rest*

April 12 *The Leibniz-Clarke Correspondence*

Required:

H. G. Alexander, ed., *The Leibniz-Clarke Correspondence*

Margaret C. Jacob, "Christianity and the Newtonian Worldview," in Lindberg and Numbers, *God and Nature*