

Exploring Science and Religion
Duke University
Phil 213 / Neurosci 233 / Ethics 213
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Course Description: This [Transformative Ideas \(TI\)](#) course, geared to sophomore STEM majors, introduces to students to central questions about the relationship between science and religion. Multiple religious traditions will be explored, and guest speakers from a range of scientific fields and religious perspectives will share their viewpoints. Core topics will include cultural-mythological depictions of the universe; the development of physics, astronomy and cosmology; Darwin and the growth of modern biology; theological views of evolution; chance and purpose in evolution; naturalism, intentionality, and teleology; evolution and morality; the neuroscience of the mind; the problem of consciousness; religious and scientific perspectives on identity and the self; ethics and technology; and religion and the psychology of happiness.

Course Goals and Objects:

- Students will acquire an up-to-date overview of the contemporary scientific evidence and models in cosmology, biology, and neuroscience that are relevant to core philosophical and religious questions.
- Students will gain a grasp of the relevant history of science and its interactions with various religious traditions at various stages.
- Students will be able to apply philosophical reasoning to scientific and religious questions, learning to distinguish between hard scientific evidence, plausible philosophical conjectures, and interpretations of that evidence.
- Students will hear from scientific practitioners in physics, biology, and neuroscience from within and outside Duke on the religious and philosophical implications of their work.

General Course Requirements and Grading:

Students will write 3 short response papers (4-5 pages). These will be equally weighed. Students will be expected to attend all class sessions (except for excused absences) and to participate regularly in class discussion.

There will also be 10 very short essays on the assigned readings/videos (1-2 pp double-spaced) which are graded as either a 100 or a 0. These are very straightforward and are mostly intended as an opportunity to express your thoughts on the readings and discuss any ideas you thought of questions you had, points you found interesting, etc.

Here's the total grade breakdown:

3 papers – 25% each
Short responses – 10% total (1% each x 10)
Participation – 15%

Participation: Since a large goal of this course is to consider our topics from multiple points of view, it is crucial that you participate regularly. Technically, there is a rubric for participation, broken down by how many class sessions you participated in. However, I rarely have to actually use this. As long as every 2-3 sessions you ask a question, share your thoughts, respond to an idea, etc. **and have no unexcused absences** you will get full participation.

Attendance: Discussion is crucial for this class, and therefore **it is expected that you will attend all class sessions unless there is some valid excuse which you discuss with me.** (I am happy to accommodate for reasonable exceptions, but you need to talk to me about it.) You have one (1) free unexcused absence that I will overlook. After that, **you will lose 1 of the 15 participation points for every unexcused absence.**

Classroom Expectations:

This seminar will rely heavily on discussion, and depends on the active input of all participants. For that reason, it cannot be stressed enough how important respectful and open dialogue is for this class. Therefore, a few simple rules will be in effect:

- (1) **Charitable disagreement:** All opinions and perspectives on the issues we discuss are welcome, and civil disagreement is encouraged. No one should feel compelled to agree or disagree with the authors we are reading, but I do ask that you honestly and charitably engage with the arguments we discuss and with your peers, and that you back up your views with reasoning.
- (2) **Raise your hands:** Please refrain from interrupting others. Many of the topics we'll discuss are exciting and you may want to respond immediately to a point someone brings up. That is quite understandable, but please raise your hand and I promise you'll be called on. We want to give everybody a chance to speak and express their thoughts.
- (3) **No phones:** Laptops and tablets are permitted, but no cell phones are allowed in the classroom. Put them away, so that others aren't distracted.

Topics and Reading List

(**Note:** Syllabus is tentative and may be changed)

Section I: Paradigm Shifts: Cosmos from Greece to the Scientific Revolution

Day 1 – Course Introduction; Myth and Worldview

- Hesiod, *Theogony*: lines 1-264
- Hesiod, *Theogony*: lines 378-542
- Selection from *Enuma Elish*
- Genesis 1-3 (NRSV-UE translation)

Day 2 – Mythology, the Presocratics and Early Science

- Hesiod, *Theogony*: lines 542-907
- Plato, *Phaedo* (pp. 50-68)

Day 3 – Plato's Rationalism: Knowledge and the Soul

- Plato, *Phaedo* (pp. 68-87)

Day 4 – Plato's Universe: A Cosmos 'As Perfect as Possible'

- Plato, *Phaedo* (pp. 87-100)
- Plato, *Timaeus* (27b – 45e)
- G. Vlastos, *Plato's Universe*, pp. 47-61

Day 5 – Aristotle's Universe: Anti-Mechanism and Teleology

- Aristotle, *De Caelo* II.14
- Ptolemy, *Almagest* I.7
- Lucretius, *On the Nature of Things* (pp. 2-17)
- J. Evans, *The History and Practice of Ancient Astronomy*, pp. 35-38
- BBC Documentary: 'Aristotle's Lagoon' ([link](#))

Day 6 – Atoms and the Void: Lucretius and Early Atomic Physics

- Lucretius, *On the Nature of Things* (pp. 34-50, 62-65, 66-72)

Day 7 – Death, the Afterlife and Ultimate Meaning

- Lucretius, *On the Nature of Things* (pp. 88-98, 135-143)

Day 8 – The Islamic Tradition: Aristotle through the Middle Ages

Potential Guest Lecture: Muzaffar Iqbal (Center for Islamic Sciences, Canada)

- Mehdi Golshani: "Creation in the Islamic Outlook and in Modern Cosmology" (selection)
- S. Nomanul Haq: "Moments in the Islamic Recasting of the Greek Legacy"

Day 9 – Galileo, Copernicus, and the Scientific Revolution

- Peter Millican: "Science from Aristotle to Galileo"
- Descartes *Meditations* 1

Day 10 – Descartes on the Self and Skepticism

- Descartes *Meditations* 2

Day 11 – Descartes on God and Certainty

- Descartes *Meditations* 4 and 5

Day 12 – Descartes' Mind-Body Dualism in a Physical World

- Descartes: *Meditations* 6

Day 13 – Mechanism, Determinism, and Hume on Miracles

- Selection from Pierre-Simon Laplace, *A Philosophical Essay on Probabilities* (1 p.)
- Stephen Hawking: "Does God Play Dice"?
- Brian Davies: *An Introduction to the Philosophy of Religion*, Ch. 10: pp. 217-238 (focus on pp. 221-238)

Section II: Evolution, Naturalism, and Theological Traditions

Day 14 What is Evolution?: Chance, Randomness, and Natural Selection

Guest Lecture: Dan McShea (Biology, Duke University)

- Darwin, C. 1859. *On the Origin of Species*, chapter 14, pages 459-490. (31 pages), Darwin online: <http://darwin-online.org.uk/content/frameset?itemID=PC-Virginia-Francis-F373&viewtype=text&pageseq=1>
- Kauffman, S. 1991. Antichaos and adaptation. *Scientific American* (6 pages)

Day 15 – Science “versus” Religion?: Texts, Tradition, and Truth

- Stephen Jay Gould: “Non-Overlapping Magisteria” ([link](#))
- Shai Cherry, “Three Twentieth-Century Jewish Responses to Evolutionary Theory”
- Don Lopez, *Buddhism and Science: A Guide for the Perplexed*, pp. 146-152

Day 16 – Convergence, Landscapes and Directionality In Evolution

- Gould, S.J. 1994. The evolution of life on earth. *Scientific American*. (6 pages)
- George McGhee: "Convergent Evolution: A Periodic Table of Life?"
- Michael Ruse: “Purpose in a Darwinian World”
- Video: “Fitness Landscapes Explained” (10 mins, [link](#))

Day 17 – Metaethics, Human Nature and Species-Based Morality

Guest Lecture: Dan McShea (Biology, Duke)

- Daniel McShea and Robert McShea, “Biology and Value Theory”
- Daniel McShea, “Feelings as Proximate Causes”

Day 18 – Evolutionary Skepticism: Knowledge and Ethics

- Sharon Street: A Darwinian Dilemma for Realist Theories of Value

Day 18 – Teleology, Intentionality and Naturalism

Guest Lecture: Dan McShea (Biology, Duke)

- Dan McShea and Alex Rosenberg: “Darwin Makes a Science”
- Michael Ruse: “Athens” (From *On Purpose*)

Day 19 – Nature and Reason in Judaism

- Hava Tirosh-Samuelson, “Nature in the Sources of Judaism”
- Leo Strauss, “Athens and Jerusalem: Some Introductory Reflections”

Day 20 – Religion and Science: A Contemporary Islamic Perspective

- Taner Edis, *Islam's Encounter with Modern Science*, ch. 2: “Conflicts of Content”
- Taner Edis, *Islam's Encounter with Modern Science*, ch. 3: “Clashes of Culture”

Section III – Psychology, the Self and Happiness: Scientific and Religious Perspectives

Day 20 – Naturalism and the Mind: Consciousness, Persons and Materialism

- Edward Feser, *The Philosophy of Mind*: Ch. 3, “Materialism” (pp. 49-75)
- Edward Feser, *The Philosophy of Mind*: Ch. 4, “Qualia”
- Lynne Rudder Baker, “Persons and the Natural Order”

Day 21 – Persons, Identity and the Self

- John Perry, *A Dialogue on Personal Identity and Immortality*
- Tamar Szabo Gendler, “Personal Identity and Thought Experiments”
- Laurie Paul, “Who Will I Become?”

Day 22 – Psychology and the Social Construction of the Self

Day 23 – Buddhist Perspectives on Identity and the Self

- “Anatta-lakkhana Sutta, Maha-nidana Sutta, and Milindapanha: Theravada Philosophy of Mind and the Person” (tr. Peter Harvey)
- “Santaraksita’s Tattvasamgraha: A Buddhist Critique of the Nyaya View of the Self” (tr. Matthew T. Kapstein)
- James Giles, “The No-Self Theory: Hume, Buddhism and Personal Identity”

Day 24 – The Neuroscience of the Mind: An Introduction

- Len White, “Notes on Brain Anatomy”

Day 25 – Leonard White’s Brains

Class visit to Prof. Len White’s brain lab; meet downstairs at the brain lab in Levine Science Research Center (enter the glass ‘box’ sticking out at LSRC and go downstairs)

Day 26 – Religious Narratives and the Psychology of Happiness

Guest Lecture: Patty van Cappelen (Social Science Research Institute (SSRI), Duke)

Day 27 – Technology, Religion and Science: Moral and Enhancement?

- Rosalind Picard, “What Technology Can and Can’t Do” (lecture)
- Nicholas Agar, “The Sociologist – James Hughes and the Many Paths of Moral Enhancement” in *Humanity’s End*: (MIT Press, 2010)
- James Hughes, “Moral Enhancement Requires Multiple Virtues. *Cambridge Quarterly of Healthcare Ethics* 24 (1):86-95.
- James Hughes, “Using Using Neurotechnologies to Develop Virtues: A Buddhist Approach to Cognitive Enhancement”

Day 28 – Final Day Project: Class Reflections