

Kenrick-Glennon Seminary

**Science and Theology:
In Dialogue for the New Evangelization
(3 credits)**



The present situation is heavily marked ... by fresh problems and questions brought up by scientific and technological discoveries. It strongly demands a high level of intellectual formation, such as will enable priests to proclaim, in a context like this, the changeless Gospel of Christ and make it credible to the legitimate demands of human reason. (Pastores Dabo Vobis, #51)

**Fall 2016 / Spring 2017
Tue – Fri, 9:00 – 10:15am**

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Science and Theology: In Dialogue for the New Evangelization **(3 credits)**

Course Description:

What are the challenges and resources that contemporary science brings to the proclamation of the Good News for the 21st Century? This course will address that question on three fronts:

1) Methodology: How does contemporary philosophy of science open up a space for faith in the process of knowing? We will investigate how the philosophy of “critical realism” accounts for the history of science better than its alternatives, and how critical realism accounts for the methodological similarities and differences between theology and science. (Barbour, Polkinghorne)

2) Cosmology: How does contemporary cosmology open up a space for reasonable belief in a creator? We will investigate current scientific ideas – like the bouncing universe and the BGV theorem – that both challenge and support the theological notions of creation and design. (Barbour, Barr, Spitzer)

3) Evolution: How can engaging (rather than dismissing) the scientific account of evolution help to ground a more adequate theology of suffering? We will investigate the science of evolution, the relation between evolutionary theory and the biblical account of God’s interaction with the world, and the interaction of science and theology in formulating a theology of suffering. (Barbour, Futuyma/Coyne, Haught).

Course Objectives /Student Learning Outcomes:

1. Seminarians will be able to evaluate philosophies of science on the basis of the history of science.
2. Seminarians will be able to evaluate similarities and differences between theological and scientific method as they relate to obtaining objective knowledge.
3. Seminarians will be able to explain and respond to major scientific proposals that challenge the theological notions of creation and design – e.g. bouncing universe, eternal inflation, many-worlds quantum theory, etc.
4. Seminarians will be able to explain and incorporate key discoveries in cosmology that support the theological notions of creation and design – e.g. symmetries, Tolman’s limit, the BGV theorem, etc.
5. Seminarians will be able to analyze common objections to the idea of evolution and scientific responses to those objections.

6. Seminarians will be able to compare evolutionary theory to the biblical account of God's dealing with humankind.

7. Seminarians will be able to formulate a theology of suffering that synthesizes scientific and biblical elements.

Texts:

Historical Background:

"The Newtonian Settlement and the Origins of Atheism." Fr. Michael J. Buckley. In *Physics, Philosophy and Theology: A Common Quest for Understanding*. Russell, Stoeger and Coyne, eds. (1988)

For important qualifications of and challenges to Buckley's thesis see:
Richard Popkin, *American Historical Review* 94:3 (June, 1989) pp. 704-5
John Millbank, *Modern Theology* 8:1 (January, 1992) pp. 89-92
David Wilson, *The Journal of Religion* 71:3 (July 1991) pp. 440-2

Methodology:

When Science Meets Religion, chapter 1. Ian Barbour (2000)
The Faith of a Physicist, chapter 2. John Polkinghorne. (1994)
Belief in God in an Age of Science, chapters 2 & 5. John Polkinghorne. (1998)

Cosmology:

When Science Meets Religion, chapter 2. Ian Barbour (2000)
Modern Physics and Ancient Faith. Stephen Barr. (2003)
New Proofs for the Existence of God. Fr. Robert Spitzer, S.J. (2010)

Evolution:

When Science Meets Religion, chapter 4. Ian Barbour (2000)
Exploring Reality: The Intertwining of Science and Religion, chapter 8. John Polkinghorne. (2005)
Science on Trial: The Case for Evolution. Douglas Futuyma. (1995) OR *Why Evolution is True*. Jerry Coyne. (2010)
Making Sense of Evolution: Darwin, God, and the Drama of Life. Jack Haught. (2010)

Course Calendar



Unit One: Methodology

Week 1:

Tue: Introduction and Overview of the Class

Fri: At the Origins of Modern Atheism (and qualifications) – *becoming aware of mistaken strategies for integrating theology and science in order to fashion more secure strategies*

Week 2:

Tue: Methodology in Theology and Science

Reading: Barbour, When Science Meets Religion, chapter 1.

Fri: Critical Realism and Its Alternatives

Reading: Polkinghorne, The Faith of a Physicist, chapter 2.

Week 3:

Critical Realism in Theology and Science

Tue: *Reading: Polkinghorne, Belief in God in an Age of Science, chapter 2.*

Fri: *Reading: Polkinghorne, Belief in God in an Age of Science, chapter 5.*

ASSIGNMENT 1: Short Essay (See “Assignments” for description)

Unit Two: Cosmology

Week 4:

Cosmology in Theology and Science

Tue: *Reading: Barbour, When Science Meets Religion, chapter 2.*

Fri: *Reading: Barr, Modern Physics and Ancient Faith, chapters 4-8.*

Week 5:

The Argument from Design: Symmetries

Tue: *Reading: Barr, Modern Physics and Ancient Faith, chapters 9-11*

Fri: *Reading: Barr, Modern Physics and Ancient Faith, chapters 12-13*

Week 6:

The Anthropic Principle

Tue: *Reading: Barr, Modern Physics and Ancient Faith, chapters 14-15*

Fri: *Reading: Barr, Modern Physics and Ancient Faith, chapters 16-18*

Week 7: Guest Lectures by Dr. Tom Sheahen – The Science of Cosmology

New Proofs for the Existence of God: Arguments for a Beginning, Arguments for Design

Tue: *Reading: Spitzer, New Proofs for the Existence of God, Part One, Chapter 1*

Fri: *Reading: Spitzer, New Proofs for the Existence of God, Part One, Chapter 2*

Week 8: ASSIGNMENT 2 - Classroom Presentation (See “Assignments” for description)



Unit Three: Evolution

Week 9:

Evolution in Theology and Science

Tue: Reading: Barbour, *When Science Meets Religion*, chapter 4.

Fri: Reading: Polkinghorne, *Exploring Reality: The Intertwining of Science and Religion*, chapter 8. (The problem of evil in an evolutionary context.)

Week 10: The Science of Evolution

Tue: Reading: Futuyma Chapters 1&2 (or Coyne 1&2)

Fri: Reading: Futuyma Chapters 3&4 (or Coyne 3&4)

Week 11: The Science of Evolution

Tue: Reading: Futuyma Chapters 5&6 (or Coyne 5&6)

Fri: Reading: Futuyma Chapters 7&8 (or Coyne 7)



"Creating a world in need of development, God in some way sought to limit himself in such a way that many of the things we think of as evils, dangers or sources of suffering, are in reality part of the pains of childbirth which he uses to draw us into the act of cooperation with the Creator." -Pope Francis, Laudato si', #80.

Week 12: Guest Lectures by Dr. Rob Wood – The Science of Evolution

Tue: Reading: Futuyma Chapters 9&10 (or Coyne 8)

Fri: Reading: Futuyma Chapters 11&12 (or Coyne 9)

Week 13:

Evolution in Theology

Tue: Reading: Haught, *Making Sense of Evolution*, chapters 2&3.

Fri: Reading: Haught, *Making Sense of Evolution*, chapters 5&6.

Week 14: ASSIGNMENT 3 : Elevator Speech on Creation and Evolution (See "Assignments" for description)

ASSIGNMENT 4: Final Essay - Evolution and Suffering (See "Assignments" for description)

Assignments

1) Short Essay: 3-5 pages (Student Learning Objectives 1&2)

Drawing on the work of Ian Barbour and John Polkinghorne, explain: A) Why “critical realism” gives a better account of the history of science than methodological anarchism or deductionism. (It might help if you focus on one particular episode or series of episodes in the history of science.) B) How critical realism can account for the similarities and differences between scientific and theological method while maintaining that both pertain to knowledge.

(Teacher Evaluation)

2) Classroom Presentation: 15 minutes (Student Learning Objectives 3&4)

Focusing on the work of either Stephen Barr or Fr. Robert Spitzer, A) Explain one scientific theory for why the world did NOT have a beginning or is designed. Respond to this theory. B) Explain one scientific theory for why the world DID have a beginning or is designed. How do we incorporate this theory into the theology of creation?

(Teacher + Peer Evaluation)

3) Elevator Speech: 60 seconds x 2 (Student Learning Objectives 5&6)

a) You are in an elevator when someone notices your collar, and says: “Surely, Father, you don’t believe in evolution. After all, that’s opposed to the Bible.” You have 60 seconds. Respond.

b) You are in an elevator when someone notices your collar, and says “Surely, Father, you’re not opposed to evolution. After all, we don’t read the Bible literally.” You have 60 seconds. Respond.

(Teacher + Peer Evaluation)

4) Final Essay: 5-8 pages (Student Learning Objectives 5,6&7)

Write an essay formulating a theological approach to the question of suffering that draws from the science of evolution and the biblical account of God’s dealing with humankind.

(Teacher Evaluation)