

A Dialogue Between Religion and Science

Institution: Point Park College

Instructor: Dr. Ragaa Shalaby

Professor of Physics/Biophysics

Course Description:

When the question is raised about the relationship between Religion and Science at this late date in the twentieth century, too frequently those who are questioned reply either that they have no interest in the question or they give answers directly related to their current views about religious beliefs and/or scientific theories.

The goal is to offer a course that is instrumental in bridging the gap that exists between students' religious beliefs, which are mostly inherited from their parents and shaped by their environment, and the scientific theories that they are exposed to and that impacts their daily lives. Most of my students have fundamental metaphysical commitments that they hold absolutely. They would not at first realize that their beliefs are shaped by many factors (family, prevailing public systems of thought, moral guidance with hidden agenda...). The approach I would adopt is to lead the students to learn about the newest conceptual ideas presented by modern science and to examine how these ideas impact upon their thinking about religion. The attitude I would communicate would be one of dialogue where neither discipline has a privileged position but both are open to examination and interpretation. My focus would be rooted in the perspective quality of human knowledge. Since both Religion and Science are ways of knowing, I would emphasize that each perspective makes some reality appear and at the same time makes other reality disappear.

As is evident from the syllabus, the different topics are addressed from both a science and religion perspective and then a dialogue exploring the convergence and the conflict follows.

As of January 1999, Point Park College started an honors program with emphasis on the implementation of interdisciplinary study and scholarship. The program has a director and a council of faculty from different departments of the college who will oversee the quality of the program and address the cognitive development of the students. The science and religion course that is proposed here will be part of the offerings in this program and will be a required core course. The course will be offered to senior and junior level students. My expectation is that students from the sciences, humanities, journalism, social science and the arts would participate in the course. However, to start, I anticipate the class size to be about twenty students.

SYLLABUS AND OUTLINE

Fall 1999

Course title: A dialogue between Science and Religion

Course Number: NSET (Honor) 395

Instructor: Dr. Ragaa Shalaby

Co-Instructors: Dr. Rex Stevens, Professor of Philosophy

Dr. Edward Hogan, Professor of Psychology

Dr. Charles Quillin, Professor of Biology

Dr. John Kudlac, Professor of Geology and Civil Engineering

Credit structure: One term, three credits

Class time: The course will consist of two 75 minute classes per week for 14 weeks. The class time will be split between lecture and tutorial discussion based on the previous lecture and assigned readings.

Text: *The Fire in the Equations* (Grand Rapids, Eerdmans, 1995) by Kitty Ferguson

Great Ideas in Physics (McGraw Hill Publishing) by Alan Lightman

Religion and Science: Historical and contemporary issues by Ian Barbour (Harper San Francisco, 1997), provides a clear analysis of issues in the relation of religion and science.

Science and Religion: From Conflict to Conversation (NY Paulist Press, 1995), by John F. Haught, provides the basic categories for relating science and religion - conflict, contrast, contact and conformation - as well as the boundary conditions examined.

These texts will be supplemented by additional reading which will be made available to the students.

Course Requirements and Grading

1. Reading and Journal: Readings are assigned to supplement lectures and to stimulate class discussion. Students will keep a journal on the reading which include a brief reflection of about one typewritten page, collected once a week. Students are expected to be in every class with assignments read and written. Students come to class prepared to engage in the discussion. This will count for 25% of the grade.

2. Paper: One 10-15 typewritten research paper. In consultation with your professor(s) you will choose one of the critical issues in the relationship between science and religion. The chosen topic and the bibliography are due on or before the seventh week of the term (October 14, 1999). The final paper is due on or before December 6, 1999. The paper should reflect the emphasis of the course, demonstrate a grasp of the key issues, have a balanced discussion between science and religion and aim at an integrative approach. Each student will present his/her paper to the class (50% of the grade).

3. Final exam 25% of the grade.

Course Outline

Week 1:

Students are asked to respond to the following questions:

- ⌋ Why do you want to take the course?
- ⌋ What is your background?
- ⌋ How do you define religion? What does it mean to you?
- ⌋ How do you define science? How does science relate to you and influence your life?
- ⌋ In your opinion can science and religion intersect? Are they adversaries or allies in search for the truth?
- ⌋ What is truth, God, reality?

We will discuss these issues and the students will write their journals and submit them. The points brought by the students will be discussed in the next class. (*these questions will be revisited at different points in the course*)

Assignment: Haught - Chapter 1

Barbour's articles in physics, philosophy, theology pp (21-45)

Week 2: Historical Perspective

Review of historical interactions between science and religion concentrating on key events and periods of significance in the science religion conflict. For example, Galileo, The Enlightenment, Darwin and The Fundamentalist/Modernist controversies.

Assignment: Barbour, pp (3-74);

John Brooke; Science and Religion: Some Historical Perspectives, pp (33-51)

God: (Hackett Publishing, 1996), Timothy Robinson, editor. pp (58-78)

Week 3 and 4: Cosmology and Creation:

Religious World View

Explore and discuss the various definitions of religion and how religious people claim to “know” about the universe. The Christian doctrine of creation, revelation and incarnation will be the major topics, however brief references to other world views will be incorporated.

Assignment: T. William Hall et al., Religion: An Introduction, pp (166-176);

Roger Schmidt, Exploring Religion, pp (6-26,144-151, 159-175);

Meredith McGuire, Religion: The Social Context, pp(14-20, 26-37)

The Scientific World View

Discuss the scientific method and the scientific approaches to knowledge. Explore what do scientist mean when they claim to “know” about the nature of reality. Investigate the role played by experiments in science. Do experiments provide positive evidence for a phenomena, or can they only falsify scientific theories? Discuss the distinction between controlled, repeatable experiments that are carried in a laboratory, and observations that are the way of study in fields like geology and astronomy.

Assignment: Ferguson pp (4-88);

Karl Popper, “Falsification” in Hutchingson, pp (142-146);

John Polkinghorne, Beyond Science, pp (3-38)

Weeks 5, 6 and 7:

We will explain the different types of origin issues that arise within both religion and science. We will consider the biblical basis for the doctrine of creatio ex nihilo and the notion of there being a first moment in time before which there was only God. We will then discuss the same doctrine from a scientific perspective, talk about the “Big Bang” hypothesis and other scientific questions relating to origins, with a review of the supporting evidence.

Assignment: Barbour, chapters 7, 8 and 9;

Polkinghorne, chapter 5

Hall, pp (44-54);

Ninian Smart, World Views: Cross-cultural explorations of Human Beliefs, pp (85-89);

Edward W. Kolb, “The Big Bang Origin of the Universe”, in Mathews and Varghese, pp (55-85)

Ferguson, pp (89-125)

Robert John Russell, “Cosmology, Evidence for God or Partner for Theology?” in Evidence of Purpose, ed. John Marks Templeton (New York: Continuum Publishing, 1994).

Templeton/Herman, chapter 4

Week 8, 9, 10: Evolution and the Origin of Life

Discuss human evolution and its implication, reviewing evidence, problems and controversies surrounding the issue. Examine current scientific thinking about human nature, purpose and meaning in human life. Discuss the theological implications of Darwinian evolution. Consider origins and functions of religious stories on human origin and examine these from different cultures with main emphasis on Genesis. Investigate cultural presuppositions about the meaning of biblical texts, and God’s relationship and way of relating to people. Explore if a biblical perspective of creation have to be static or can continuous creation (Dynamic Process) be the way God interacts with the world? Present video on “Creation vs. Evolution” debate. Review ways of relating scientific and religious ideas about human origins using Barbour’s models.

Assignment: Haught, Chps 3, 4

Barbour, chp 3, pp (49-57), and chp 9, pp (221-249, 263-280)

Ninian Smart, Sacred Texts of the World

Peacocke, Chp 2

Weeks 11, 12 and 13:

Explore how does God act in a world presumably governed by natural law. Different perspectives are presented. The function that the laws of physics from quantum theory, chaos theory... play in enabling one to predict the behavior of a given system will be explored, followed by consideration of the limitation of this predictive power and the implication for theology. Relate the scientific thought about quantum physics, chaos theory to the Christian doctrine of the sovereignty of God, since quantum theory raises the question of certainty and objective reality for both science and religion.

Assignment: Barbour, Chps 7, 10, 11, 12

Polkinghorne, Chp 6

Ferguson, pp (178-225)

Polkinghorne article in Origin and Evolution of the Universe, pp (333-342)

Russell's article in Origin and Evolution of the Universe, pp (343-374)

Lightman, Chp 4

Weinberg's "Toward the Final Laws of Physics" (1986 Dirac Memorial Lecture)

Haught's article in Progress Theology, vol 3, number 1, 1998

Kaiser's Article in Progress Theology, vol 3, number 1, 1998

Week 14:

Free discussion of questions raised by the science-religion dialogue and the limitations of each and complimentary of the two areas in describing "ultimate reality".

Assignment: Haught, Chp 8

Ferguson pp (225-283)

Sperry "A Search for Beliefs to Live by Consistent With Science" in Mathew and Varghese pp (313-333)

Week 15:

Final Exam