The primary focus of this course is to introduce students to the history and philosophy of science, particularly in the Islamic and the Western worlds. The philosophy here concerns worldviews: the assumptions about the nature of reality of the universe around us. If our assumptions affect our perceptions, worldviews shape what we ‘know’ and vice versa. The aim of this course is to enable students to see that no science is born in a vacuum, but in a world of assumptions about the nature of reality of what we perceive around us, that is, in the lap of one worldview or another. In time, anomalies found in a given ‘science’ may necessitate altering the existing worldview. But it is important to realize that worldviews are never determined by ‘natural sciences’ alone, and that every worldview necessarily affects how we perceive or ‘know’ the world and interact with it.


In addition, there will be several handouts given out on topics not covered in the books above.

**CLASS SCHEDULE**

Week 1: February 16
Introduction, Objective, Outline, and a brief discussion of the meaning of the term ‘worldview’. (Required reading: Dewitt 3-13)

**Religious and Traditional Worldviews**

Week 2: February 23
Science and the worldviews of World Scriptures (Req: handouts; Recommended: Quadir Chapt1 Section 1.1 and Chapt2 section 2.1)

Week 3: March 2
Worldviews of the Pre-Socratics and Plato (Req: handouts)

Week 4: March 9

**First Exam** (1st hour)
Aristotelian Worldview (Req: Dewitt 81-99)
(Exams will be based on the lectures. Readings will help clarify the issues.)

Week 5: March 16
Problems with Aristotelian Worldview (Dewitt 100-124)

Week 6: March 23
In what ways did Islamic astronomers alter and challenge the Aristotelian/Ptolemaic worldview? Watching in the class Part 3 of the BBC documentary *Science and Islam* : http://www.youtube.com/watch?v=9yca9s2MYN4
(Exams will be based on the lecture and discussions)
Week 7: March 30
Relationship between Islamic/Traditional Cosmologies and Sciences
For the next exam, students must know the contents of the discussion in the class.
(Req: handouts; Recommended: Quadir Chapt 5)

Week 8: April 6
Second exam
Challenging the Religious and Traditional Worldviews
The Copernican Revolution (Req: Dewitt 125-139)

Week 9: April 13
The Scientific Revolution of the 17th century: Kepler, Bacon, Galileo, Descartes and Newton
(Req: Dewitt 140-186 and Recommended: Quadir Chapt 1 section 1.3-1.4.
Exams will be based on the lectures. Readings will help clarify.)

SPRING BREAK

Week 10: April 27
The Newtonian worldview, the Enlightenment and the Industrial Revolution.
Watch the documentary on the Industrial Revolution in England during the 18th and 19th century (BBC production): http://www.youtube.com/watch?v=JhF_zVrZ3RQ.
(Recommended: Quadir Chapt 1 section 1.5)
(Students must watch the documentary prior to coming to the class. For the exams, students must know the contents of the lecture and the general outline of the documentary).

Consequences of Modern Science
Week 11: May 4
Distinctions between Modern Science and Traditional Science (Req: hand-outs)
Modern Scientific Worldview, Scientism and their effects including the Environmental Crisis
(Req: Dewitt 187-192 and Quadir pp. 158-161 and 163-167)
Recommended: The Truth About Climate Change Part I (BBC)
http://www.youtube.com/watch?v=a51mWYhVmek

Week 12: May 11
Third Exam (1st hour)
The Theory of Evolution and its critique (Req: handout)
Recommended documentaries:

Pro-Evolution:
Evolution - The Link to Our Past https://www.youtube.com/watch?v=eicdP24L2gQ
Opposed to Evolution:
What are the limits of Darwinism? A presentation by Prof. Michael Behe:
http://www.youtube.com/watch?v=V_XN8s-zXx4

Recommended Talk:
From Darwin to Hitler (2004): A talk by Richard Weikert, professor of history, California State University Stanislaus: http://www.youtube.com/watch?v=w_5EwYpLD6A
The New Science and its implications
Week 13: May 18
Introduction to the Theory of Relativity (Req: Handout)

Week 14: May 25
Quantum Theory (Req: Dewitt 233-246)
Recommended documentary: The Holographic Universe—Quantum Physics—1 of 5
http://www.youtube.com/watch?v=4HtR7nESmkQ. Watch only the **first 35 minutes**

**Final grade will be based as follows:**
Participation and Conduct in the class: 10%
First exam: 20%
Second exam: 20%
Third exam: 20%
Final exam: 30%