Division of University Studies
UNST 206: Scientific Revolutions and Social Change

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Course Description

This course will focus on the philosophy and the scientific revolution of the 17th century and its impact on contemporary revolutions in the natural and social sciences. We will read a mixture of philosophical texts, scientific texts and contemporary texts. We will discuss both the relations between what we now call science and what we now call philosophy in the period of the scientific revolution.

Required Readings

You must do the assigned readings prior to coming to class. Buy the following books immediately and bring to each class: (1) *Darwin: A Norton Critical Edition*; and (2) Clifford D. Conner, *A People's History of Science*. In addition to these books, there will be various assigned articles which will be made available through Blackboard.

Course Requirements:

Each student is expected to be prepared for class, which means you are expected to have read all the required readings, be prepared to discuss the readings in class and to have completed class assignments for each class session. **Given the importance of class participation, attendance is mandatory.** Tardiness will not be tolerated. Absent or tardy students are responsible for any missed class work, including any changes to the syllabus or assignments announced in class. **Absence from class without an excuse will result in a letter grade reduction.** If you suffer prolonged illness or misfortune, you should consider dropping the course. Persistent tardiness and failure to observe established classroom etiquette will lead to failure of the course.

Each week, I will call on several student to give a **formal class presentation** on one of the readings assigned for that week. The presentation should both explain the main points of the reading and examine the reading from a critical perspective (by referring to the other readings assigned, if necessary).

Class presentations should be no shorter than 15 minutes and no longer than 20 minutes. Students should be prepared to answer questions after the presentation and to discuss their presentation with the class. Absence from class will clearly lead to a low grade for class participation and will also make it difficult to understand many of the texts in the required reading.

GRADING

Grades for this course will be determined as follows: (1) Assignments (100 points); (2) Class Participation (100 pts); (3) Midterm Exam (100 pts); (4) Final Exam (100 pts).

TENTATIVE COURSE SCHEDULE WITH ASSIGNED READINGS

Week 1 Religion Confronts Science
Readings: Neil deGrasse Tyson, "Holy Wars: An Astrophysicist Ponders the God Question";
Michael Shermer, "Genesis Revisited: A Scientific Creation Story,"

Week 2 Social History of Science
Readings: Conner, *A People's History of Science*, Ch. 1; Hessen, "The Social and Economic Roots of Newton's *Principia*"

Week 3 Prior to the Scientific Revolution
Readings: Conner, *A People's History of Science*, Chapters. 2, 4

Week 4 Scientific Revolution: From Copernicus to Darwin
Readings: Conner, *A People's History of Science*, Chapters 5-6

Week 5 The Union of Science and Capital
Readings: Conner, *A People's History of Science*, 7-8; Levins and Lewontin, "Applied Biology in the Third World: The Struggle for Revolutionary Science"

Week 6 The "Racial" Economy of Science
Readings: Allan M. Brandt, "Racism and Research: The Case of the Tuskegee Syphilis Study"; Ernest Just, "The Role of Foundation Support for Black Scientists, 1920-1929"
Film: The Deadly Deception

Week 7 Scientific Thought Before Darwin
Readings: de Beer, "Biology before the *Beagle*"; William Paley, "Natural Theology"; Herschel, "The Study of Natural Philosophy"

Week 8 Midterm Exam

Week 9 Darwin's Theory of Evolution
Readings: Darwin, Selections from *The Origin of Species*, 95-111

Week 10 Darwin's Theory of Evolution
Readings: Darwin, Selections from *The Origin of Species*, 111-174

Week 11 From Darwinism to the Neo-Darwinian Synthesis
Readings: Peter Bowler, "The Evolutionary Synthesis"

Week 12 From Darwinism to Social Darwinism
Readings: Andrew Carnegie, "The Gospel of Wealth"; Edward Wilson, "Sociobiology: The New Synthesis"; Stephen Jay Gould, "Biological Potentiality vs. Biological Determinism"

Week 13 Creationism and the Attack on Darwin's Theory of Evolution
Readings: Henry M. Morris, "Scientific Creationism"; National Center for Science Education, "Seven Significant Court Decisions Regarding Evolution/Creation Issues"; Pope John Paul II, "Message to the Pontifical Academy of Sciences"
Film: Kansas vs. Darwin

Week 14 Top Ten Myths About Evolution
Readings: Smith & Sullivan, 9-86

Week 15 Top Ten Myths About Evolution
Readings: Smith & Sullivan, 87-168

Week 16 Final Exam