

Course: PHIL 8

Division: 10

Also Listed As:

Term Effective: 200930, INACTIVE COURSE

Short Title: INTRO PHIL/SCIENCE

Full Title: Introduction to the Philosophy of Science

<u>Contact Hours/Week</u>	<u>Units</u>	<u>Number of Weeks</u>	<u>Total Contact Hours</u>
Lecture: 3	3	17.34	Lecture: 52.02
Lab: 0			Lab: 0
Other: 0			Other: 0
Total: 3			Total: 52.02

Credit Status: D - Credit - Degree Applicable

Grading Modes: L - Standard Letter Grade

Repeatability: Repeatability: N - Course may not be repeated

Schedule Types: 02 - Lecture and/or discussion

Course Description:

The introduction to the Philosophy of Science is an investigation into the aims, methods, and world view of science and technology. Students will study selected problems concerning the character and reliability of scientific understanding, such as the nature of scientific theory and explanation, reality of theoretical entities, inductive confirmation of hypotheses, and occurrence of scientific revolutions. Discussion will be at the non-technical level of episodes from the history of science.

ADVISORY: Eligible for English 1A

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

GAV C2, effective 200070

GAV E2, effective 200070

CSU GE:

CSU C2, effective 200070

IGETC:

IGETC 3B, effective 200070

CSU TRANSFER:

Transferable CSU, effective 200070

UC TRANSFER:

Transferable UC, effective 200070

PREREQUISITES:

COREQUISITES:

STUDENT LEARNING OUTCOMES:

1. Have experienced a broad spectrum of knowledge within the field of applied moral philosophy that will improve their ability to think in abstract terms.
2. Have developed some quantitative and qualitative methods of analysis unique to philosophy.
3. Have improved their literacy of important concepts and issues in world cultures.
4. Have a more developed foundation upon which they can continue to learn.
5. Become more attentive to alternatives to violence and prejudice.

TOPICS AND SCOPE:

Inactive Course: 12/08/2008

Content

This outline was written in outline form. Note that there are 3 lecture hours per week for this course.

1. Introduction, deductive/inductive reasoning, scientific discovery, reason, and the world: an overview of perspectives, agency, pluralism, diversity of basic scientific methodologies and approaches.
2. An overview of ancient science (pre-Socratics, Greeks, Egyptians, Chinese) and the notion of the decline of ancient science. What was the role of science and the theories, their plausibility, their role and function in society?
3. Brief survey of Science of Asia and Medieval Europe.
 - a) science and technology of the Chinese
 - b) science of India
 - c) science of the Muslim world and its spread into Europe
 - d) Medieval Europe
4. Introduction to the role of philosophy and the scientific revolution of the 16th and 17th centuries.
 - a) Copernican System and its impact
 - b) Gilbert, Bacon, and the Experimental Method
 - c) Galileo
 - d) Descartes: the mathematical methods and the mechanical philosophy

e) some early modern applications of science and the scientific theory

5. 18th century science, the development of scientific traditions.

a) evolution and the great chain of being

b) cell theory

c) reaction form religious institutions

6. Relativity, and reactions to modern science

7. Midterm

8. In depth discussion on the nature of Theory and Observation

a) Hume on Scepticism

b) Carnap on Philosophy and Physics (materialism)

c) Popper on Science and conjecture and refutation

d) Lakatos on the history of science

e) Putnam on what theories are not

f) Objectivity, subjectivity, and bias. Gender, race, and class in scientific inquiry: is objectivity even possible as an ideal?

9. Rival Conceptions of the Scientific Explanation

a) Hempel and the laws of science and their roles in explanation

b) Explanations, prediction, and laws

c) What is truth? Is it attainable and would it explain anything?

d) The quest for explanatory unification

10. Paradigms and the Growth of Scientific knowledge:

a) Scientific paradigms and the notion of their hegemony

b) Objectivity, value judgments, and theory selection

c) Holism

d) Rationality

11. Realist/Antirealist Debates

a) science and the physical world

b) scientific realism

c) construction the real

12. FINAL EXAMINATION upon completion of Section 11.

In-class writing assignments.

Reader response papers.

Two examinations.

COURSE OBJECTIVES:

Upon completion of this course the student will be able to:

1. Demonstrate the ability to understand the context and perspectives in which scientific discoveries, conflicts and theories arise.

2. Demonstrate the ability to distinguish and evaluate arguments: the premises, conclusion, justification, and explication of the argument's focus.

3. Demonstrate improved ability to write analytically, critically, dialectically, and creatively about the philosophy of science and scientific issues. These insights encourage the student to be more tolerant, philosophically thoughtful, and socially productive.

4. Demonstrate increased understanding about diversity of cultures, traditions, and points of view on science, discovery, and reality. This new understanding is hoped to improve relations and the cooperation among individuals in society. It is particularly stressed that alternatives exist to violent reactions.

5. See the blending of cultures and traditions within the scope of

a particular theoretical development. That is, see how different groups approach a situation in question. Additionally, the student should see the rise of cultural imperialism in the ideal of a dominant perspective of reason and its role in society and science.

6. Describe the role of philosophy and science in ethics, in society.

7. Outline and articulate the role of the individual agent in hypothesizing and creating theory.

8. Describe the relationship between the individual, society, and others outside of the individual's assumed society in discussing and articulating ideas of reality, the impact of science in moral matters and rules of conduct.

9. List and describe the thinking of major philosophical writers on the matters discussed in the course.

METHODS OF INSTRUCTION:

Lecture, Discussion, Class Discussion, and in-class group projects.

METHODS OF EVALUATION:

The types of writing assignments required:

Essay exams

Term papers

The problem-solving assignments required:

Quizzes

Exams

The types of skill demonstrations required:

Class performance

Other: In-class discussion and group work

The types of objective examinations used in the course:

None

Other category:

None

The basis for assigning students grades in the course:

Writing assignments: 55% - 75%

Problem-solving demonstrations: 5% - 40%

Skill demonstrations: 5% - 10%

Objective examinations: 0% - 0%

Other methods of evaluation: 0% - 0%

REPRESENTATIVE TEXTBOOKS:

Daniel Rothbart: *Science, Reason, and Reality: Issues in the Philosophy of Science*. Harcourt Barce. 1998.

Stephen Mason: *A History of the Sciences*, MacMillan Publishing or other equivalent college level text.

Selected articles on science, technology, race and gender.

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: A

Noncredit Category: Y

Cooperative Education:

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department: PHIL
CSU Crosswalk Course Number: 8
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: E
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000456152
Sports/Physical Education Course: N
Taxonomy of Program: 150900