

PHIL 018: PHILOSOPHY OF SCIENCE

Originator

msmith

Justification / Rationale

Adding online modalities.

Effective Term

Fall 2022

Credit Status

Credit - Degree Applicable

Subject

PHIL - Philosophy

Course Number

018

Full Course Title

Philosophy of Science

Short Title

PHILOSOPHY/SCIENCE

Discipline**Disciplines List**

Philosophy

Modality

Face-to-Face

100% Online

Catalog Description

An introduction to the core philosophical issues raised by the unprecedented success of scientific inquiry since the beginning with the origins of modern science in the 16th century through the conceptual revolution in physics in the twentieth century. Topics include the logic and epistemology of scientific discoveries, observation vs. explanation, causation and the laws of nature, realism and antirealism regarding scientific knowledge, and the conflicts and compatibilities between the sciences and religions. This course is offered in the Spring semester.

Schedule Description

The conceptual basis of the natural sciences. Advisory: ENG 061 and at least one previous college level course in philosophy or the natural sciences. IGETC: 3B

Lecture Units

3

Lecture Semester Hours

54

Lab Units

0

In-class Hours

54

Out-of-class Hours

108

Total Course Units

3

Total Semester Hours

162

Prerequisite Course(s)

Advisory: ENG 061, and at least one previous college level course in philosophy or the natural sciences.

Required Text and Other Instructional Materials**Resource Type**

Book

Author

Nagel, Thomas

Title

Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly Wrong

Edition

1st

City

New York, New York

Publisher

Oxford University Press

Year

2012

College Level

Yes

Flesch-Kincaid Level

14

ISBN #

978-019991975

Resource Type

Book

Author

Rosenberg, Alex

Title

Philosophy of Science: A Contemporary Introduction

Edition

3rd

City

New York, New York

Publisher

Routledge

Year

2011

College Level

Yes

Flesch-Kincaid Level

14

ISBN #

978-0415891

Resource Type

Book

Author

Sokal, Alan

Title

Beyond the Hoax: Science, Philosophy and Culture

Edition

1st

City

New York, New York

Publisher

Oxford University Press

Year

2010

College Level

Yes

Flesch-Kincaid Level

14

ISBN #

978-019956183

Class Size Maximum

45

Entrance Skills

Construct focused theses.

Requisite Course Objectives

ENG 061-Use theses to organize paragraphs into coherent analyses.

ENG 061-Demonstrate the ability to think critically and express ideas using various patterns of development.

ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Entrance Skills

Select, develop, and organize ideas in a structured format.

Requisite Course Objectives

ENG 061-Use theses to organize paragraphs into coherent analyses.

ENG 061-Demonstrate the ability to think critically and express ideas using various patterns of development.

ENG 061-Recognize features of style such as purpose, audience and tone integrate these elements into academic and professional writing.

ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Entrance Skills

Compose essays using combined rhetorical modes

Requisite Course Objectives

ENG 061-Recognize features of style such as purpose, audience and tone integrate these elements into academic and professional writing.

ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Entrance Skills

Demonstrate awareness of audience by use of appropriate tone and diction in all compositions.

Requisite Course Objectives

ENG 061-Recognize features of style such as purpose, audience and tone integrate these elements into academic and professional writing.

Entrance Skills

Exhibit proficiency in correct usage of grammar, punctuation, and mechanics in all compositions.

Requisite Course Objectives

ENG 061-Use theses to organize paragraphs into coherent analyses.

Entrance Skills

Analyze, explain, evaluate, and contrast selected prose and poetry, both from text and researched sources.

Requisite Course Objectives

ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Entrance Skills

Demonstrate skill in researching information, including CD-ROM and on-line sources.

Requisite Course Objectives

ENG 061-Demonstrate the ability to use research skills including library resources such as books, periodicals, electronic databases and online resources such as the internet.

Entrance Skills

Paraphrase, summarize, and quote using MLA documentation for all published sources in all compositions.

Requisite Course Objectives

ENG 061-Utilize a handbook to properly cite and document source material in MLA format.

Entrance Skills

Generate and develop ideas, and to clarify and organize thoughts through writing.

Requisite Course Objectives

ENG 061-Use theses to organize paragraphs into coherent analyses.

ENG 061-Demonstrate the ability to think critically and express ideas using various patterns of development.

ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Course Content

1. The question of the demarcation between science and pseudo-science.
2. Deductive and inductive inferences.
3. The inference to the best explanation.

4. Occam's Razor and ontological parsimony.
5. The nature of scientific explanations.
6. The analysis of causal relations.
7. The status of the natural laws.
8. Realism about scientific theories.
9. Antirealism about scientific theories.
10. The measurement problem in quantum mechanics.
11. The units of selection problem in philosophy of biology.
12. Why has modern science been so successful?

Course Objectives

	Objectives
Objective 1	Demonstrate knowledge of the characteristic logical inferences governing scientific explanation.
Objective 2	Explain how scientific explanations of natural phenomena are distinct from the prediction and control of natural phenomena.
Objective 3	Describe the contribution of the now-defunct philosophy of logical positivism to contemporary philosophy of science.
Objective 4	Describe how a law of nature differs from an exceptionless regularity.
Objective 5	Explicate a philosophical argument supporting scientific realism.
Objective 6	Explicate a philosophical argument supporting scientific antirealism.

Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Students will summarize and discuss the basic conceptual foundations of scientific inquiry.
Outcome 2	Students will recognize that the borders between science and philosophy, and between physics and metaphysics, are not sharp ones.
Outcome 3	Students will discriminate between proposed examples of pseudo-science and genuine science, and critically defend their judgments.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Discussion	Building students' comprehension of philosophical, logical, and scientific concepts.
Lecture	Delivery of information, and the interpretation, and analysis of philosophical, logical and scientific concepts.

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Written homework	Building students' comprehension of philosophical, logical, and scientific concepts.	Out of Class Only
College level or pre-collegiate essays	Assessment of students' comprehension of philosophical, logical, and scientific concepts.	In and Out of Class
Mid-term and final evaluations	Assessment of students' comprehension of philosophical, logical, and scientific concepts.	In and Out of Class
Tests/Quizzes/Examinations	Assessment of students' comprehension of philosophical, logical, and scientific concepts.	In and Out of Class

Assignments

Other In-class Assignments

1. Attendance of lectures by instructor and occasional guest speakers, including the taking of detailed notes thereon.
2. Viewing of films, including the taking of notes thereon.
3. Listening to sound recordings and taking notes thereon.

4. Special reports by students, in panel or singly.
5. Examinations of various types, such as essay and multiple choice.

Other Out-of-class Assignments

1. Readings in the textbooks and in recommended supplementary literature.
2. Composition of brief analytical essays.

Grade Methods

Letter Grade Only

Distance Education Checklist**Instructional Materials and Resources****Effective Student/Faculty Contact**

Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?

Within Course Management System:

Chat room/instant messaging
Discussion forums with substantive instructor participation
Online quizzes and examinations
Private messages
Regular virtual office hours
Timely feedback and return of student work as specified in the syllabus
Weekly announcements

External to Course Management System:

Direct e-mail
Synchronous audio/video

Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.

The methods listed above are the most successful ways to accomplish regular effective contact in an online learning environment. Announcements, email, regular virtual office hours, chat rooms/instant messaging, etc., insure that online students receive the same information and opportunities to interact with instructors as do students enrolled in non-virtual learning environments.

If interacting with students outside the LMS, explain how additional interactions with students outside the LMS will enhance student learning.

Synchronous instruction replicates the coherence and immediacy of the in-person classroom.

Other Information**CSU GE**

C2 - Humanities

IGETC GE

3B - Humanities

MIS Course Data**CIP Code**

38.0101 - Philosophy.

TOP Code

150900 - Philosophy

SAM Code

E - Non-Occupational

Basic Skills Status

Not Basic Skills

Prior College Level

Not applicable

Cooperative Work Experience

Not a Coop Course

Course Classification Status

Credit Course

Approved Special Class

Not special class

Noncredit Category

Not Applicable, Credit Course

Funding Agency Category

Not Applicable

Program Status

Program Applicable

Transfer Status

Transferable to both UC and CSU

Allow Audit

No

Repeatability

No

Materials Fee

No

Additional Fees?

No

Approvals**Curriculum Committee Approval Date**

11/18/2021

Academic Senate Approval Date

12/09/2021

Board of Trustees Approval Date

01/21/2022

Chancellor's Office Approval Date

03/11/2010

Course Control Number

CCC000461855

Programs referencing this courseAnthropology AA-T Degree (<http://catalog.collegeofthedesert.eduundefined/?key=14>)Philosophy AA-T Degree (<http://catalog.collegeofthedesert.eduundefined/?key=17>)Liberal Arts: Arts, Humanities Communication Studies AA Degree (<http://catalog.collegeofthedesert.eduundefined/?key=26>)