

PHIL202

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

Course Summary

Course : PHIL202 **Title :** Philosophy of Science

Length of Course : 8

Prerequisites : N/A **Credit Hours :** 3

Description

Course Description: Philosophy of Science will introduce students to the origins and development of modern science and how that is distinguished from pseudo-science; the importance of deduction and induction and their separate methodologies; the process of the scientific method; scientific change and scientific revolutions, particularly that of Thomas Kuhn; and selected philosophical problems in the basic sciences, such as absolute space, biological classification, the modular mind, and recent discoveries of neuroscience.

Course Scope:

PHIL202 Philosophy of Science addresses the underlying assumptions of modern science and the scientific method. Science is based on particular ontological, cosmological, and phenomenological principles which define the limits of scientific inquiry and place scientific methodologies in specific philosophical contexts. The course will consider the relationship between science as a philosophical perspective and other philosophical views, as well as the perspectives of contemporary philosophers who analyze science and scientific practices.

Objectives

After successfully completing this course, you will be able to:

1. Define how "science" can be distinguished from "true science," "pseudo-science," and "scientism."
2. Describe the process of the scientific method in research and scientific investigation.
3. Describe the logical positivist philosophy of science.
4. Describe the structure of Thomas Kuhn's "paradigm shift" and the rationality of science.
5. Compare and contrast the positions of Gottfried Leibniz and Isaac Newton on the issue of absolute space.
6. Identify the problems in scientific classification.
7. Identify current discoveries in neuroscience.
8. Compare and contrast the approaches of science and religion in seeking universal truths about the human condition.

Outline

Week 1: Science vs. Non- Science

Learning Objectives

Define how "science" can be distinguished from "true science," "pseudo-science," and "scientism."

Readings

Text Readings:

Chapters 1-2 in *Theory and Reality*

Popper (294-301) in *Philosophy of Science: Contemporary Readings*.

Aristotle, *Posterior Analytics* Book 1 Chapters 1-2, Book 2 Chapters 1-2 in *From Aristotle to Einstein*

Web:

Firestein, Stuart. "The Pursuit of Ignorance." *TED Talks*.

Web. 1 Jan.2014.

Assignment

Timeline Entry 1

Week 1 Forum

Quiz 1

Week 2: Methodology of Science

Learning Objectives

Describe the process of the scientific method in research and scientific investigation.

Describe the logical positivist philosophy of science.

Readings

Text Readings:

Theory and Reality: Chs. 3-4 (39-74)

Philosophy of Science: Kitcher (71-91)

Early Writings: Bacon, "Preface" to *Novum Organum*

Assignment

Quiz 2

Week 2 Forum

Week 3: Scientific Revolutions

Learning Objectives

Describe the structure of Thomas Kuhn's "paradigm shift" and the rationality of science.

Readings

Text Readings:

Theory and Reality: Chapters 5- 6 (75-101)

Philosophy of Science: Shapere (410-420) and Kuhn (421-437)

Early Writings: excerpts from Einstein on Relativity Theory

Assignment

Timeline Entry 2

Quiz 3

Week 3 Forum

Week 4: Alternatives to Kuhn and a Case Study

Learning Objectives

Compare and contrast the positions of Gottfried Leibniz and Isaac Newton on the issue of absolute space.

Readings

Text Readings:

Theory and Reality: Chapter 7 (102-121)

Early Writings: Excerpts from Leibniz and Newton

Web:

Huggett, Nick, and Carl Hoefer. "[Absolute and Relational Theories of Space and Motion.](#)" *The Stanford Encyclopedia of Philosophy*. Ed. Edward N. Zalta. Web. 2009. 1 Jan. 2014.

"[Space and Time Newton and Leibniz.](#)" Interview with Frank Arntzenius. YouTube. 16 Nov. 2012. Web. 1 Jan. 2014.

Assignment

Essay Proposal Quiz 4

Week 4 Forum

Week 5: Beyond Philosophy of Science

Learning Objectives

Identify current discoveries in neuroscience.

Readings

Text Readings:

Theory and Reality: Chapters 8- 9 (122-148)

Philosophy of Science: Contemporary Readings: Anderson (459-488)

Web:

Longino, Helen, "The Social Dimensions of Scientific Knowledge." *The Stanford Encyclopedia of Philosophy*. Ed. Edward N. Zalta. 2013. Web. 1 Jan. 2014.

Assignment

Timeline Entry 3

Quiz 5

Week 5 Forum

Week 6: Philosophical and Scientific Naturalism

Learning Objectives

Compare and contrast the approaches of science and religion in seeking universal truths about the human condition.

Readings

Text Readings:

Theory and Reality: Chapters 10-11 (149-172)

Philosophy of Science: Contemporary Readings: Hanson (321-340)

Web:

Papineau, David. "Naturalism." *The Stanford Encyclopedia of Philosophy* Ed. Edward N. Zalta. 22 Feb. 2007. Web. 1

Jan. 2014.

Assignment

Quiz 6

Week 6 Forum

Week 7: Scientific Realism and Explanation

Learning Objectives

Identify the problems in scientific classification.

Readings

Text Readings:

Theory and Reality: Chapters 12-13 (173-201)

Philosophy of Science: Contemporary Readings: Van Fraassen (56-70)

Assignment

Timeline Entry 4 Research Essay Quiz 7

Week 7 Forum

Week 8: Philosophy of Science Today

Learning Objectives

Define how "science" can be distinguished from "true science," "pseudo-science," and "scientism."

Describe the process of the scientific method in research and scientific investigation.

Describe the logical positivist philosophy of science.

Describe the structure of Thomas Kuhn's "paradigm shift" and the rationality of science.

Readings

Text Readings:

Theory and Reality: Chapters 14-15 (202-231)

Philosophy of Science: Contemporary Readings: Salmon (385-401)

Assignment

Research Presentation

Quiz 8

Forum discussion

Evaluation

Reading Assignments: You are expected to keep up with course reading in order to successfully complete discussions forums and assignments. The required reading for each week is listed in the Readings and Resources section of the lesson.

Supplemental Readings: Links to additional resources may be provided in the online classroom. These are recommended to deepen your understanding of course materials, but are not required to complete basic assignments, such as discussion forums. They will be especially helpful in writing your essays.

Forum Assignments: Each course week will include 1 discussion forum based on that week's lessons and readings. You are required to post an initial 250-word response to the discussion prompt no later than Thursday; you must also post 2 substantive peer responses (100+words) to another student's post no later than Sunday. Discussion boards will be graded based on length, thoughtfulness, and relevance.

Homework Assignments: Each course week will include homework assignments. These assignments may include summaries of readings, study questions, or activities related to developing the final research paper (below). Detailed evaluation criteria for each assignment are included with the assignment instructions.

Exams/Quizzes: The course will include 8 weekly quizzes.

Research Project: For the final project, each student will write a 1500-2000 word research paper in MLA format using 5-10 peer-reviewed sources and create a 5-10 minute presentation of the results. Project topics will be developed over several weeks in a series of graded homework assignments.

Please visit the "Assignments" section of the classroom for details regarding assignments, including the Research Proposal, Research Essay, and Research Presentation. Visit the "Forums" section of the classroom for weekly forum descriptions, posting requirements, and grading rubrics. Visit the "Tests & Quizzes" section of the classroom to access weekly quizzes.

Grading:

Name	Grade %
Forums	30.00 %
Week 1 Forum	3.75 %
Week 2 Forum	3.75 %
Week 3 Forum	3.75 %
Week 4 Forum	3.75 %
Week 5 Forum	3.75 %
Week 6 Forum	3.75 %
Week 7 Forum	3.75 %
Week 8 Forum	3.75 %
Homework Assignments	30.00 %
Week 1 - Timeline Entry 1	6.00 %
Week 3 - Timeline Entry 2	6.00 %
Week 4 - Research Proposal	6.00 %
Week 5 - Timeline Entry 3	6.00 %
Week 7 - Timeline Entry 4	6.00 %
Research Paper and Presentation	20.00 %
Week 7 - Research Essay	10.00 %
Week 8 - Research Presentation	10.00 %
Quizzes	20.00 %
Week 1 Quiz	2.86 %
Week 2 Quiz	2.86 %
Week 3 Quiz	2.86 %
Week 4 Quiz	2.86 %
Week 5 Quiz	2.86 %
Week 7 Quiz	2.86 %
Week 8 Quiz	2.86 %

Materials

Book Title: Theory and Reality: An Introduction to Philosophy of Science-E-book available in the APUS Online Library

Author: Godfrey-Smith, Peter

Publication Info: University of Chicago Press

ISBN: 9780226300634

Book Title: Philosophy of Science: Contemporary Readings

Author: Balashov, Yuri, and Alex Rosenberg, eds

Publication Info: Routledge

ISBN: 9780415257824

Book Title: You must validate your cart to get access to your hard copy book(s). If needed, instructions are available here - <http://apus.libguides.com/bookstore/undergraduate>

Author: N/A

Publication Info: N/A

ISBN: N/A

Book Title: Early Writings in the Philosophy of Science: From Aristotle to Einstein - e-book available inside the classroom

Author: Canfield Fuller, Sarah, ed

Publication Info: APUS ePress

ISBN: PHIL202-NTMO

Required Readings

Chakravartty, Anjan. "Scientific Realism." *The Stanford Encyclopedia of Philosophy*. Ed. Edward N. Zalta. 2013. Web. 1 Jan. 2014.

Gelman, Andrew, and Cosma Rohilla Shalizi. "Philosophy and the Practice of Bayesian Statistics."

British Journal of Mathematical and Statistical Psychology 66 (2013): 8-38.

Huggett, Nick, and Carl Hoefer. "Absolute and Relational Theories of Space and Motion." *The Stanford Encyclopedia of Philosophy* (Fall 2009 Edition). Ed. Edward N. Zalta. Web. 1 Jan. 2014.

Longino, Helen, "The Social Dimensions of Scientific Knowledge." *The Stanford Encyclopedia of Philosophy*. Ed. Edward N. Zalta. 2013. Web. 1 Jan. 2014.

Additional Resources

Firestein, Stuart. "The Pursuit of Ignorance." *TED Talks*. Web. 1 Jan. 2014.
http://www.ted.com/talks/stuart_firestein_the_pursuit_of_ignorance.html (18:33)

"Space and Time Newton and Leibniz." Interview with Frank Arntzenius. YouTube. 16 Nov. 2012.

Web. 1 Jan. 2014.

Websites

In addition to the required course texts the following public domain Websites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note web site addresses are subject to change.

Site Name	Website URL/Address
Stanford Encyclopedia of Philosophy	http://plato.stanford.edu/
Internet Encyclopedia of Philosophy	http://www.iep.utm.edu/
Center for the Philosophy of Science	http://www.pitt.edu/~pittcntr/
Dipity (timeline tool)	http://dipity.com/

Course Guidelines

Citation and Reference Style

- Students will follow MLA format as the sole citation and reference style used in written assignments submitted as part of coursework to the Humanities Department.
- Please note that no formal citation style is graded on forum assignments in the School of Arts & Humanities—only attribution of sources (please see details regarding forum communication below).

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

Late Assignments

School of Arts & Humanities Late Policy

Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals, I understand you must manage competing demands on your time. Should you need additional time to complete an assignment, please contact me before the due date so we can discuss the situation and determine an acceptable resolution.

Work posted or submitted after the assignment due date will be reduced by 10% of the potential total score possible for each day late up to a total of five days, including forum posts/replies, quizzes, and assignments. ***Beginning on the sixth day late through the end of the course, late work, including forum posts/replies, quizzes, and assignments, will be accepted with a grade reduction of 50% of the potential total score earned.***

Turn It In

Assignments are automatically submitted to Turnitin.com within the course. Turnitin.com will analyze an assignment submission and report a similarity score. Your assignment submission is automatically processed through the assignments area of the course when you submit your work.

Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com or Scribd. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc). See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.
- It is the student's responsibility to ensure the all submitted work can be accessed and opened by the instructor.

Disclaimer Statement

- Course content may vary from the outline to meet the needs of a particular group or class.

Communicating on the Forum

- Forums are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting day/time after which the instructor will grade and provide feedback, it is not sufficient to wait until the last day to contribute your comments/questions on the forum. The purpose of the forums is to actively participate in an on-going discussion about the assigned content.
- "Substantive" means comments that contribute something new and important to the discussion. Thus a message that simply says "I agree" is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.
- Students must post a response to the weekly forums prompt and post the required number of replies to other students – refer to the grading rubric and/or forum instructions for specific expectations on number of replies and word count requirements.
- The main response to the forum is due mid-week – refer to the grading rubric and/or forum instructions for specific expectations. Late main response posts to a forum may not be accepted without prior instructor approval.
- Replies must be posted in the week due and replies after the end of the each week may not be graded.

Quizzes and Exams

- Quizzes and exams may consist of true/false, multiple choice, and short essay questions. Each quiz/exam is accessible only once. Once a quiz/exam is accessed, you will not be able to access it again if you disconnect. Therefore, allocate time to complete your quiz. Weekly quizzes must be submitted by midnight Eastern Time, Day 7 of the assigned week. Late quizzes or exams will not be accepted without prior instructor approval.

University Policies

[Student Handbook](#)

- [Drop/Withdrawal policy](#)
- [Extension Requests](#)
- [Academic Probation](#)
- [Appeals](#)
- [Disability Accommodations](#)

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.