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Office and office hours: AB4 402 MWF 11:00-11:50, TTH 9:30-10:50, and other times by appointment

**COURSE DESCRIPTION:** PHL 372: Philosophy of Science is a three semester credit hour course that surveys topics in the philosophy of science including the logic of explanation in the physical and social sciences, the relations of science to the realm of value, and a look at the mind-body problem.

**COURSE OBJECTIVES:** (1) Students will be able to explain variety of views about the nature of science, in particular the contrast between individualistic views of science such as logical empiricism, falsificationism, and Bayesianism versus views that stress scientific knowledge as a social product, (2) will be able to describe some of the conceptual issues raised in particular areas of science, especially creation vs. evolution in biology and reductionism in psychology, and (3) will be able to develop their own views on the matters discussed.

**TEXTS:**

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| (1) <i>Theory and Reality</i><br>University of Chicago Press (2003)                    | by Peter Godfrey-Smith<br>ISBN 0-226-30063-3 |
| (2) <i>Finding Darwin's God</i><br>Cliff Street Books/Harper Collins Publishers (1999) | by Kenneth R. Miller<br>ISBN 0-06- 093049-7  |
| (3) <i>Social Empiricism</i><br>MIT Press (2001)                                       | by Miriam Solomon<br>ISBN 0-262-69352-6      |
| (4) <i>Neither Brain nor Ghost</i><br>MIT Press (2007)                                 | by W. Teed Rockwell<br>ISBN 0-262-68167-6    |

**ELECTRONIC RESERVE ITEMS:** There will be several items on electronic reserve at the library. THESE ITEMS ARE DEFINITELY NOT OPTIONAL. To access the items, go to the SHSU homepage and click on the [Library](#) button. A list of library sites will appear and then click on the [Resources](#) button. You will then see a button for [Electronic Reserves](#). Follow the directions to locate the items on reserve for PHL 372 under my name. You need a password to enter, and the password is on the Blackboard site under Course Documents.

**BLACKBOARD:** The syllabus and many other course documents such as review questions for the exams will be posted on Blackboard from time to time. To access them, you will go to the SHSU homepage and click on [Blackboard](#), type in your SHSU username and password, and then a menu of courses should appear. Click on PHL 372 and, after you are at the course site, then locate the relevant documents.

**GRADING:** There will be three major exams, each worth 100 points, and a final exam worth 100 points, so there are 4 exams worth a total of 400 points. There will also be a set of writing assignments that constitute a major grade. The assignments will use The Analyzer© template created by Dr. Joseph Neisser to guide analytic reading. There will be 9 such assignments each worth 12 points for a total of 108 possible points. NOTE: each of the Analyzers may be turned in early, but no late work will be accepted. The points from the writing assignments are added to the 400 points from exams, plus a few extra credit points based on class participation. To determine your final average, simply divide your overall point total by 5. All tests are announced in advance, and there will be time for review before each exam. The grading scale is 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, below 60 = F.

**ABSENCES:** In accordance with University regulations, I will take roll every period. I make no use of the absence record in determining grades. However, if you do not attend class, you must drop the course before the deadline of Thursday, May 8; otherwise, you will receive an F.

**MAKE-UPS:** I hate to give make-up exams. If I give one, it is likely to be longer and harder than the regular test since you would have more time to prepare for it. You must have valid reason for missing an exam. Another test the same day, for example, does not count. If you must miss a test, see me as soon as possible to let me know your reason for missing it. YOUR EXCUSE MUST BE WRITTEN AND

APPROPRIATELY DOCUMENTED. AN EXCUSE THAT DOES NOT WITHSTAND VERIFICATION WILL RESULT IN A GRADE OF ZERO FOR THAT EXAM. If your excuse is valid, then we will make the necessary arrangements for you to take a make up exam as soon as possible.

STANDARD POLICIES: Each of these standard policies is stated in full on the Blackboard website for this course under Course Documents. I have extracted from the full statement a key element as a reminder of the policy in its entirety, but the student must download the posting on Blackboard to have the full policy statement. Here are the six standard policy matters: (1) NOTICE TO PERSONS WITH A DISABILITY: No accommodation can be made until you register with the Counseling Center. There will be no retroactive accommodations. (2) ACADEMIC DISHONESTY: Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. (3) CLASSROOM RULES OF CONDUCT: Students are expected to assist in maintaining a classroom environment that is conducive to learning. (4) VISITORS IN THE CLASSROOM: It is at the instructor's discretion whether or not he/she will be allowed to remain. (5) ABSENCE ON RELIGIOUS HOLY DAYS: A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present in advance to each instructor involved a written statement concerning the religious holy day(s). (6) COURSE EVALUATIONS: In accordance with University policy, students will have an opportunity near the end of the semester on a set day and time to complete a course evaluation.

**TENTATIVE SCHEDULE**  
**PHL 372W.01**

**PHL 372: Philosophy of Science**  
**MWF 9:00-9:50**  
**CID 1912**

**Spring 2008**  
**AB4 205**

**Unit I Science: The Interplay of Observation and Theory**

**January**

Wed 16 Introduction to course. Handout on Carol Tavris: APA vs. APS

Fri 18 *Theory and Reality* (TAR) Chap. 1 Introduction, TAR Chap. 2 Logic Plus Empiricism, and a Handout: Bertrand Russell "On Induction"

**Mon 21 University Holiday in honor of Dr. Martin Luther King Day**

Wed 23 TAR Chap. 3 Induction and Confirmation plus a Handout on the logic of confirmation and refutation in hypothesis testing

Fri 25 TAR Chap. 4 Popper: Conjecture and Refutation plus Reading on Electronic Reserve: Karl Popper "Science: Conjectures and Refutations" and a Handout on the Logic of Comparative Experimentation

Mon 28 TAR Chap. 14 pp. 202-208 Bayesianism and Modern Theories of Evidence plus a Handout on Bayes' Theorem and a Handout from the NEJM on evidence from genomic testing

Wed 30 TAR Chap. 14 pp. 208-217 More on Bayesianism

**February**

Fri 1 Reading on Electronic Reserve: Read T. S. Kuhn "Objectivity, Value Judgment, and Theory Choice" and do ANALYZER #1 on the Kuhn article.

Mon 4 TAR Chap. 5 Kuhn and Normal Science plus a Handout on the Brelands

Wed 6 TAR Chap. 7 Lakatos, Laudan, Feyerabend, and Frameworks.

Fri 8 Chap. 9 Feminism and Science Studies (the ideal of *Wertfreiheit*) Start Review for exam

Mon 11 Review for First Exam

Wed 13 **First Exam—100 points—1/5 of final grade**

**Unit II Science as a Social Product--Understanding the Cognitive Authority of Science**

Fri 15 TAR Chap. 6 Kuhn and Revolutions

Mon 18 TAR Chap. 8 The Challenge of the Sociology of Science and Solomon *Social Empiricism* (SE) Chap. 1 Introduction

Wed 20 TAR Chap. 10 Naturalistic Philosophy in Theory and Practice and read SE Chap. 2 Empirical Success and do ANALYZER #2 on SE Chap. 2.

Fri 22 SE Chap. 4 Decision Vectors and SE Chap. 5 Dissent

Mon 25 SE Chap. 6 Consensus

Wed 27 Read SE Chap. 7 Social Empiricism and do ANALYZER #3 on SE Chap. 7.

Fri 29 SE Chap. 8 Epistemic Fairness and TAR Chap. 11 Naturalism and the Social Structure of Science

### **March**

Mon 3 Review for Second Exam

Wed 5 **Second Exam—100 points**

### **Unit III Science and the Mind: Challenges and Responses**

Fri 7 TAR Chap. 12 Scientific Realism and a Handout on Free Will versus Determinism

### **Spring Break Saturday March 8--Sunday March 16**

Mon 17 TAR Chap. 13 Explanation—the Covering Law Model

Wed 19 Reductionism, the Unity of Science Hypothesis, and a critique—a Handout from Fodor on Consilience

Fri 21 **GOOD FRIDAY HOLIDAY**

Mon 24 The Mind-Body Problem: a Handout on Traditional Approaches and a Handout of conversations with David Chalmers and Dan Dennett

Wed 26 Read Rockwell *Neither Brain nor Ghost* (NBG) Chap. 1 Minds, Brains, and Behavior

Fri 28 NBG Chap. 2 Beyond the Cranium and Chap. 3 Beyond the Neuronal Mind

Mon 31 Read NBG Chap. 4 Causation and Embodiment and do ANALYZER #4 on NBG Chap. 4

### **April**

Wed 2 NBG Chap. 5 The Myth of the Autonomous Mind-Brain

Fri 4 NBG Chap. 6 Experience, Sense Data, and Language

Mon 7 Read NBG Chap. 7 The Return of the Zombies and do ANALYZER #5 on NBG Chap. 7

Wed 9 NBG Chap. 9 Dreams, Illusions, and Errors

Fri 11 Read NBG Chap. 10 Dewey and the Dynamic Alternative and do ANALYZER #6 on NBG Chap. 10

Mon 14 Review for Third Exam

Wed 16 **THIRD EXAM—100 points**

### **Unit IV Issues in the Philosophy of Biology: Views of Human Nature and Evolution**

Fri 18 *Finding Darwin's God* (FDG) Chap. 1 Darwin's Apple and Chap. 2 Eden's Children and a Handout from Leon Kass

Mon 21 FDG Read Chap. 3 God the Charlatan and do ANALYZER #7 on FDG Chap. 3.

Wed 23 FDG Chap. 4 God the Magician and Chap. 5 God the Mechanic

Fri 25 FDG Chap. 6 The Gods of Disbelief and Chap. 7 Beyond Materialism

Mon 28 A Handout by E. Mayr Typological versus Population Thinking plus a Reading on Electronic Reserve: Read K. Appiah *Why There Are No Human Races* and do ANALYZER #8 on Appiah

Wed 30 Reading on Electronic Reserve: Cosmides and Tooby *Toward Mapping the Evolved Functional Organization of Mind and Brain*.

### **May**

Fri 2 Attractiveness research and evolutionary psychology—reading to be determined

Mon 5 Reading on Electronic Reserve: Read Buller *Evolutionary Psychology: A Critique* and do ANALYZER #9.

Wed 7 Last Class Day. Review for Final Exam.

**Thu 8 Last Day to Drop the Course.**

**Fri 9 Final Exam Study Day. No classes.**

**Wed 14 8:00 am-10:00 am Final Exam—100 points**