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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>
University of Chicago Press (2003) | by Peter Godfrey-Smith
ISBN 0-226-30063-3 |
| (2) <i>Finding Darwin's God</i>
Cliff Street Books/Harper Collins Publishers (1999) | by Kenneth R. Miller
ISBN 0-06- 093049-7 |
| (3) <i>Social Empiricism</i>
MIT Press (2001) | by Miriam Solomon
ISBN 0-262-69352-6 |
| (4) <i>Neither Brain nor Ghost</i>
MIT Press (2007) | by W. Teed Rockwell
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 372: Philosophy of Science Spring 2008
PHL 372W.02 TTH 12:30-1:50 CID 1931 AB4 205

Unit I Science: Observation and Theory--Logical Empiricism, Falsificationism, Bayesianism
January

Thu 17 First class day. Introduction to course. Handout on Carol Tavris: APA vs. APS

Tue 22 *Theory and Reality* (TAR) Chap. 1 Introduction and Chap. 2 Logic Plus Empiricism and a Handout: Bertrand Russell "On Induction"

Thu 24 TAR Chap. 3 Induction and Confirmation plus a Handout on the logic of confirmation and refutation in hypothesis testing

Tue 29 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

Thu 31 TAR Chap. 14 pp. 202-217 Bayesianism and Modern Theories of Evidence plus a Handout on Bayes' Theorem and a Handout from the NEJM on evidence from genomic testing

February

Tue 5 TAR Chap. 5 Kuhn and Normal Science and a Reading on Electronic Reserve: Read T. S. Kuhn "Objectivity, Value Judgment, and Theory Choice" and do ANALYZER #1 on the Kuhn article

Thu 7 TAR Chap. 7 Lakatos, Laudan, Feyerabend, and Frameworks plus a Handout on the Brelands

Tues 12 Chap. 9 Feminism and Science Studies (the ideal of *Wertfreiheit*) Review for First Exam

Thu 14 **First Exam—100 points—1/5 of final grade**

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

Tue 19 TAR Chap. 6 Kuhn and Revolutions and TAR Chap. 8 The Challenge of the Sociology of Science and TAR Chap. 10 Naturalistic Philosophy in Theory and Practice

Thu 21 Solomon *Social Empiricism* (SE) Chap. 1 Introduction SE Chap. 2 Empirical Success and do ANALYZER #2 on SE Chap. 2.

Tue 26 SE Chap. 4 Decision Vectors and SE Chap. 5 Dissent

Thu 28 SE Chap. 6 Consensus and read SE Chap. 7 Social Empiricism and do ANALYZER #3 on SE Chap. 7.

March

Tue 4 SE Chap. 8 Epistemic Fairness and TAR Chap. 11 Naturalism and the Social Structure of Science and Review for Second Exam

Thu 6 **Second Exam—100 points**

Spring Break Saturday March 8--Sunday March 16

Unit III Science and the Mind: Challenges and Responses

Tue 18 TAR Chap. 12 Scientific Realism and a Handout on Free Will versus Determinism

Thu 20 TAR Chap. 13 Explanation—the Covering Law Model, Reductionism, the Unity of Science Hypothesis, and a critique from a Handout by Fodor on Consilience

Tue 25 The Mind-Body Problem: a Handout on Traditional Approaches and a Handout of conversations with David Chalmers and Dan Dennett

Thu 27 Read Rockwell *Neither Brain nor Ghost* (NBG) Chap. 1 Minds, Brains, and Behavior and NBG Chap. 2 Beyond the Cranium

April

Tue 1 Read NBG Chap. 3 Beyond the Neuronal Mind and Chap. 4 Causation and Embodiment and do ANALYZER #4 on NBG Chap. 4

Thu 3 NBG Chap. 5 The Myth of the Autonomous Mind-Brain and NBG Chap. 6 Experience, Sense Data, and Language

Tue 8 Read NBG Chap. 7 The Return of the Zombies and do ANALYZER #5 on NBG Chap. 7

Thu 10 NBG Chap. 9 Dreams, Illusions, and Errors

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

Tue 15 Review for Third Exam

Thu 17 **THIRD EXAM—100 points**

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

Tue 22 *Finding Darwin's God* (FDG) Chap. 1 Darwin's Apple and Chap. 2 Eden's Children and a Handout from Leon Kass

Thu 24 FDG Read Chap. 3 God the Charlatan and do ANALYZER #7 on FDG Chap. 3. Also read FDG Chap. 4 God the Magician

Tue 29 FDG Chap. 5 God the Mechanic Chap. 6 The Gods of Disbelief and Chap. 7 Beyond Materialism

May

Thu 1 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

Tue 6 Reading on Electronic Reserve: Cosmides and Tooby Toward Mapping the Evolved Functional Organization of Mind and Brain. Reading on Electronic Reserve: Read Buller Evolutionary Psychology: A Critique and do ANALYZER #9 on the Buller article.

Thu 8 Attractiveness research and evolutionary psychology—reading to be determined. Last Class Day. Review for Final Exam. **Last Day to Drop the Course.**

Fri 9 Final Exam Study Day. No classes.

Tuesday 11:00 am-1:00 pm Final Exam—100 points