Understanding Science

Philosophy 218, Fall 2013
Class #7698
MWF 10:25-11:20 HUM 128
Course web page: **profron.net/phi218**

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Requirements & Grades:

Grades will be **20%** for each of your three best exam grades, **15%** for each of two short essays, and **10%** for in-class pop quizzes and polls and online tidbits. To pass the course, students taking the course for a letter grade must average at least a **D-** *and* have at least two passing grades (i.e., **D-** or better) on exams and one passing grade on an essay.

EXAMS: There will be four non-comprehensive 55-minute in-class closed-book tests, spaced relatively evenly throughout the term. Tests will consist of combinations of questions for short (2-3 sentence), shorter (1-sentence), and even shorter (fill in blanks and multiple choice) answers. Your lowest grade of the four is discarded; the other three will each count for **20%** of your course grade. (Makeups are given only with a note from the Undergraduate Studies Office; see the "Addenda" page for more details.)

ESSAYS: Topics for *very* short (about 800 words) essays will be handed out three times during the semester, and will be due about a week after being assigned. You must do two of these, including the first one. Each essay is worth **15%** of the final course grade. (See the *Addenda* page for the rules on late essays.)

POP QUIZZES/POLLS/PARTICIPATION: There will be short pop quizzes and polls in this course, normally delivered and scored by the electronic iClicker system in class. There may also be occasional online micro-assignments, such as posting comments to a discussion board. All put together, these will count for the other **10%** of your total grade. (The same rules apply for makeups here as in the case of exams above.)

Materials/Equipment:

WEB PAGE: The class web page is at **profron.net/phi218**; the course Blackboard page is only used for EReserves.

BOOKS: If you want to buy these two books, you can; they're about $10 each. We'll read almost all of the Okasha, and less of the Lewontin (at the end of the course). But everything will be available from EReserves as PDFs.
- Samir Okasha, *Philosophy of Science: A Very Short Introduction* (Oxford, 2002)
- Richard Lewontin, *Biology as Ideology: The Doctrine of DNA* (Harper, 1993)

OTHER READINGS: The rest of the readings for the course will be available as PDF files from the Library EReserves page for the course, available via Blackboard.

EQUIPMENT: This class uses the **iClicker** system for in-class quizzing and poll-taking; they're available in theCampus Bookstore. You **must** have and register an iClicker to get credit for the polls and quizzes.

Course Outline: (In flux; subject to quasi-random change)

- **What is philosophy of science?**
  - Okasha, chapter 1
- **Reasoning, inference, and induction**
  - Okasha, chapter 2
  - "The Problem of Induction" (SEP)
  - Sober, "The Philosophical Problem of Simplicity"
- **Probability and confirmation**
  - "Bayesian Induction" (SEP)
  - From Horwich, *Probability & Evidence*
  - Gilovich, from *How We Know What Isn't So*
- **Positivism, definition, & observation**
  - Hacking, "Positivism"
  - Okasha, chapter 4
  - Brown, "Perception & Theory"
- **Gnarlyness of scientific progress**
  - Okasha, chapter 5
  - Giere, from *Explaining Science*
  - Wimsatt, "Robustness, Reliability, and Overdetermination"

- **Forms of Explanation**
  - Okasha, from chapter 3
  - Brown, "Explanation"
  - Elster, "Functional Explanation"
  - Elster, from Nuts and Bolts for the Social Sciences
- **Reductive & non-reductive explanation**
  - Mayr, "Reduction and Biology"
  - Oatley, from Perceptions and Representations
  - Kitcher, from "1953 and All That: A Tale of Two Sciences"
- **Topics in pluralism**
  - Okasha, chapter 6
  - Lewontin, *Biology as Ideology*
  - More applied topics?
    - Levels of selection
    - Human differences
    - Brain scans and neuroethics
    - Chaos and complexity

PHI 218 Syllabus Addenda
(Fall 2013 – McClamrock)

Detailed Grade Calculation Rules:

1. Every graded piece of work (exam, paper, whatever) is given a letter grade from ranging from A+ (the best) to F (the worst).
2. Each of these letter grades has a numerical equivalent. Here are the possible letter grades and numerical equivalents:

A+ = 15	B = 11	C- = 7	E+ = 3
A = 14	B- = 10	D+ = 6	E = 2
A- = 13	C+ = 9	D = 5	E- = 1
B+ = 12	C = 8	D- = 4	F = 0

"Slash" grades like "A-/B+" are equivalent to the midpoint between the two grades; e.g., a grade of A-/B+ is a 12.5.

3. In calculating your final grade, all that matters are (the numerical equivalents of) your various letter grades earned.
4. I use the numerical equivalents of the letter grades to calculate a composite numerical grade using the percentages noted on the main page of the syllabus. The result is then rounded to the nearest integer (.5 and above go up, below go down).
5. I convert to letter grades using the chart above. You get the letter grade determined by the chart, except if (i) you got an A+, in which case your official grade is an A (UA doesn't use A+), or (ii) you got lower than a D-, in which case your official grade is E.

iClicker use and grading:

One of the course requirements is that you get and use an iClicker for in-class quizzes and polls. Scores from quizzes and polls will constitute 10% of your final course grade. You are responsible for getting the iClicker, bringing it to class each day, registering it at iclicker.com, and using it. Not doing so means you'll get no credit for any quizzes or polls on days when you're without it.

Makeup exams and quizzes:

Makeup exams (and clicker quizzes/polls) are given only when extreme circumstances make it *impossible* for you to take the test when given; e.g., when you are hospitalized on that day. To be given a makeup exam/quiz, you must do all of the following:

1. Obtain a letter of excuse from the Office of the Vice Provost for Undergraduate Education; all inquiries about such letters and the documentation required for them should be directed to them. This request (with documentation) is to be made to the Vice Provost's office (LC 30) no more than two weekdays after the end of the period for which you are asking to be excused.
2. Give me a **written** (e-mail is best, paper is OK) request for a makeup exam/quiz. This request must be given to me no more than two weekdays after the end of the period for which your absence has been excused.
3. Talk to me in person at the end of the first class after your excused absence in order to schedule a makeup.

Essay Submission Guidelines:

- All essays must be submitted as documents attached to a piece of e-mail addressed to me at **ron@albany.edu**.
- Essays should be saved in the format **RTF** ("Rich Text Format"), **DOC** (old MS-Word) or **DOCX** (new MS-Word). Please, no other formats; that includes no PDFs.
- Name the file **A1Q1_Lastname_Firstname_PHI218.rtf**, substituting your name in for "Lastname_Firstname", and the assignment and question numbers in place of "A1" and "Q1". So, e.g., assignment #2 written on question 3 from student Eric Cartman should be named "A2Q3_Cartman_Eric_PHI218.rtf" (or .docx or .doc, as the case may be). The subject line of the email should be the same; e.g., "A2Q3_Cartman_Eric_PHI218".

- Please format papers simply, single-spaced, with your name, the assignment and question number, and any title you might give to the paper at the top of the first page (don't use a separate title page). The text font should be 12pt Times-Roman or similar; the left margin should be 1" and the right margin 2.5". Please also include a word count. You can get a sample formatted this way that will give you a template or model from the web page.
- When you send papers to me, please cc: yourself to make sure everything worked OK.

Late essays:

Late essays are marked down by one grade notch (e.g. B to B- or B- to C+) for every hour or portion thereof I receive them after the due date and time. The only exception is the one noted under "Missed exams": If there are such extreme circumstances, and a paper is due during an excused absence, you may get an extension until the first day not covered by the excused absence. In such a case, the paper is due on that day, at the same time of day it was originally due.

Cheating:

Cheating, including but not confined to plagiarizing (i.e. using the words or content of others as your own), will result in being *failed for the course* and reported to the Dean's office.

General Education Information:

This course is a Humanities General Education course.
Characteristics of *all* General Education Courses:

1. General Education courses offer introductions to the central topics of disciplines and interdisciplinary fields.
2. General Education courses offer explicit rather than tacit understandings of the procedures, practices, methodology and fundamental assumptions of disciplines and interdisciplinary fields.
3. General Education courses recognize multiple perspectives on the subject matter.
4. General Education courses emphasize active learning in an engaged environment that enables students to be producers as well as consumers of knowledge.
5. General Education courses promote critical inquiry into the assumptions, goals, and methods of various fields of academic study; they aim to develop the interpretive, analytic, and evaluative competencies characteristic of critical thinking.

Learning Objectives for General Education *Humanities* Courses: Humanities courses teach students to analyze and interpret texts, ideas, artifacts, and discourse systems, and the human values, traditions, and beliefs that they reflect.

1. Humanities courses enable students to demonstrate knowledge of the assumptions, methods of study, and theories of at least one of the disciplines within the humanities.

Depending on the discipline, humanities courses will enable students to demonstrate some or all of the following:

2. An understanding of the objects of study as expressions of the cultural contexts of the people who created them.
3. An understanding of the continuing relevance of the objects of study to the present and to the world outside the university.
4. An ability to employ the terms and understand the conventions particular to the discipline.
5. An ability to analyze and assess the strengths and weaknesses of ideas and positions along with the reasons or arguments that can be given for and against them.
6. An understanding of the nature of the texts, artifacts, ideas, or discourse of the discipline and of the assumptions that underlie this understanding, including those relating to issues of tradition and canon.