

COURSE SYLLABUS  
Philosophy 12: *Logic and Decision Making*  
Spring, 2008: MWF 9-9:50, CENTER 115

**COURSE DESCRIPTION:** This course concerns inductive logic in general, though we will examine scientific reasoning as a paradigmatic example of inductive reasoning. The course is divided into three sections: (1) the construction and testing of theoretical hypotheses, (2) the construction and testing of statistical and causal hypotheses, and (3) decision making procedures. By course's end students should be proficient in the basics of inductive logic and therefore able to critically evaluate claims to knowledge based on inductive reasoning found in the popular press and science journals as well as to determine for themselves how such claims should affect future personal and social policy decisions.

**REQUIRED TEXT:** *Understanding Scientific Reasoning*, 5<sup>th</sup> Ed., Giere, Bickle, and Mauldin (Available at the UCSD Bookstore.)

**INSTRUCTOR:** Aaron Schiller, aaschiller@ucsd.edu. Office Hours: F 2-4, and by appointment, 7054 HSS.

**TEACHING ASSISTANT:** Kristen Irwin, kirwin@ucsd.edu Office Hours: TBA.

**GRADING:** The final course grade is determined by points obtained on six homework assignments, two midterms, and a comprehensive final exam. The point breakdown is as follows:

Homework = 10%	(100 max. points)
First Midterm = 25%	(250 max. points)
Second Midterm = 25%	(250 max. points)
Final Exam = 40%	(400 max. points)

**HOMEWORK:** There will be six homework assignments over the course of the quarter. The homework problems will be taken from the text and will be assigned in lecture. Homework will be announced over the GOOGLE GROUP after lecture, and will be discussed and handed back in section. No late homework will be accepted, though the lowest score will be replaced by the highest score when the final course grades are determined.

**EXAMS:** Exams will be a combination of multiple choice questions, short answer questions, as well as analyses of inductive arguments and decision making situations. Only a blue book will be required. No makeup exams will be administered. If you miss a midterm, you can arrange for your final to count for 65% of your final grade. You cannot miss both midterms, however, and still pass the class, regardless of your performance on the final. There will be an early final scheduled for those who need it.

**SECTION:** Attendance is not required, but is highly recommended. It's the only place that homework will be discussed, and doing well on the homework is important for one's course grade. You can go to any section you like, not just the one you are enrolled in.

**GOOGLE GROUP:** All enrolled students are required to keep up with Phil 12's Google Group: ([http://groups.google.com/group/ucsd\\_phil\\_12\\_spring\\_08](http://groups.google.com/group/ucsd_phil_12_spring_08)). Course announcements will be made there, and it is expected you will be aware of them. If you choose to join the group you can receive emails

whenever information is posted there. If you do not choose to join, make sure you check in every few days or so to see what's going on.

ON ACADEMIC HONESTY: The academic senate has a strict policy on cheating and they urge instructors to include the following information on their syllabi: Any student caught cheating will face the minimum consequence of being reported to the Dean of that student's college as having violated UCSD's standards of academic honesty. Further consequences could include failure in this course or worse. I therefore strongly advise you not to cheat in this or any other course. For more on academic honesty at UCSD see [www-senate.ucsd.edu/manual/appendices/app2.htm#AP14](http://www-senate.ucsd.edu/manual/appendices/app2.htm#AP14).

SCHEDULE:

MEETING	TOPIC	READING
<b>3/31</b>	Introduction to Course	---
<b>4/2</b>	Inductive Logic and Science	Ch. 1
<b>4/4</b>	Models & Hypotheses	Ch. 2, 2.1-2.3
4/7	Data and Predictions	Ch. 2, 2.4-2.7
4/9	The Program	Ch. 2, 2.8-2.10
4/11	Crucial Experiments and Model Development	Ch. 2, 2.11-2.12
<b>4/14</b>	Some Case Studies	Ch. 3
<b>4/16</b>	More Case Studies	Ch. 3
<b>4/18</b>	Marginal Science	Ch. 4
4/21	More Marginal Science / Review	Ch. 4
4/23	<b>First Midterm</b>	---
4/25	Intro to Statistical and Probabilistic Models	Ch. 5, 5.1-5.2
<b>4/28</b>	Proportions, Distributions, and Correlations	Ch. 5, 5.3-5.6
<b>4/30</b>	Probability Models and Sampling	Ch. 5, 5.7-5.11
<b>5/2</b>	Evaluating Statistical Hypotheses	Ch. 6, 6.1-6.3
5/5	Survey Sampling, The Program, and Problems	Ch. 6, 6.4-6.7
5/7	Causal Models, Correlation, Individuals and Populations	Ch. 7, 7.1-7.3
5/9	Effectiveness of Causal Factors, Causation v. Correlation	Ch. 7, 7.4-7.5
<b>5/12</b>	Experimental Designs - RED	Ch. 8, 8.1-8.7
<b>5/14</b>	Statistical Evidence for Causation	Ch. 8, 8.8- 8.9
<b>5/16</b>	Review	
5/19	<b>Second Midterm</b>	---
5/21	Intro to Decision Theory; Options, States, and Outcomes	Ch. 9, 9.1-9.3
5/23	Value Ranking and Measuring; Scientific Knowledge	Ch. 9, 9.4-9.5
<b>5/26</b>	<b>University Holiday (Memorial Day)</b>	---
<b>5/28</b>	Decision Making Strategies	Ch. 9, 9.6-9.7
<b>5/30</b>	Risk and Decision Making	Ch. 9, 9.8
6/2	Modern Utility Theory	Ch. 9, 9.9-9.10
6/4	The Program for Making Decisions	Ch. 10
6/6	Course Review	---
<b>6/11</b>	<b>Final Exam: 115 Center, 8-11am</b>	---

*Note that this is subject to change at the instructor's discretion, but that every attempt will be made to stay on schedule.*