

HPS 611 Principles of Scientific Reasoning

Spring 2003

Monday 6:00–8:30 pm, CL 321

Instructor: Ingo Brigandt
Office: 901-M CL
E-mail: inb1@pitt.edu
Phone: (412) 624-3181
Office hours: Monday 5 pm, Wednesday 12
Webpage at courseweb.pitt.edu

1. Course overview and aims

People face situations where they are required to evaluate the credibility of claims given to them as well as to justify claims on their own. The course aims at helping students succeed on both respects by developing their understanding of critical and logical reasoning. This is based on examples that are largely taken from everyday life but may involve scientific claims and evidence. Students who successfully complete the course will be able to: a) analyze arguments given in ordinary language as regards their logical structure and the evidence presented, b) make use of a number of standards to evaluate whether claims are supported by the evidence, whether an argument is sound or not, c) classify (sound) arguments as deductive or inductive, d) and distinguish between a sound argument and several types of fallacies.

2. Required Text

Merilee Salmon, *Introduction to Logic and Critical Thinking*, Wadsworth Thomson Learning, 2002, Fourth Edition. (Make sure you get the fourth edition, which is for instance available at the campus bookstore.)

3. Course requirements and grading

You are expected to fulfill the following requirements:

- Attendance and participation (7%)
You are required to attend all classes; and attendance will be taken. If you are unable to attend class due to extenuating circumstances, please notify me in advance as far as possible. Your attendance and participation mark will be based both on your attendance record and your oral in-class participation.
- Homework assignments (18%)
There will be a total of 9 homework assignments, each of which counts 2% towards your total grade. The homework will be given out at the end of class and deals with the material covered during that lecture. The homework is due the following week at the beginning of class. See the schedule below. (No late assignments are accepted. The assignments are also posted on our website.)
- Quizzes (20%)
Two quizzes will be given, each of which counts 10% toward your grade. See the schedule below. No make-up quizzes will be given except in extreme circumstances

(contact inb1@pitt.edu or the HPS office 624-5896 in case of emergency). In order to retake a quiz you need to offer evidence for the extreme circumstance (such as a note by your physician).

- Midterm and final exam (55%)

Two exams will be given during the term. The midterm counts a 20%, and the final counts a 35% towards your total grade. See the schedule below. No make-up exams will be given except in extreme circumstances (contact inb1@pitt.edu or the HPS office 624-5896 in case of emergency). In order to retake an exam you need to offer evidence for the extreme circumstance (such as a note by your physician).

4. Special needs

Please notify me in case of learning disabilities, fear of speaking in public, a need for special testing accommodations, and related issues. You can contact Disability Resources and Services at 624-7890. Also inform me about schedule conflict that may arise from your varsity team's athletic schedule.

5. Academic integrity

Any form of cheating or plagiarism are grounds for not accepting assignments and exams. (The university's policy on academic integrity can be found at www.pitt.edu/~graduates/ai1.html.)

6. How to succeed

Attend class regularly and take notes. Come prepared to class, participate in class and do not hesitate to ask if something is unclear. You should expect that preparing the chapters from the book and doing the homework will take at least 5 hours per week outside class time. Make use of my office hours in case you have questions or problems.

Course schedule and assignments

	Date	Topic	Homework due	Exams
1	Jan 6	Introduction and Chapter 1		
2	Jan 13	Ch. 2: The language of arguments	Homework 1	
	Jan 20	No class (Martin Luther Kind Day)		
3	Jan 27	Ch. 3: Types of arguments. Review for Quiz 1	Homework 2	
4	Feb 3	Ch. 4, Sec. I and II: Inductive arguments I		Quiz 1 (Ch. 1–3)
5	Feb 10	Ch. 4, Sec. III to VI: Inductive arguments II	Homework 3	
6	Feb 17	Classes cancelled due to snow		
7	Feb 24	Ch. 5: Causal arguments.	Homework 4	Midterm (Ch. 1–4)
8	Mar 10	Ch. 6: Probabilities and inductive logic	Homework 5	
9	Mar 17	Ch. 7: Confirmation. Review for Quiz 2	Homework 6	
10	Mar 24	Ch. 8, Sec. I to V: Deductive reasoning I		Quiz 2 (Ch. 5–7)
11	Mar 31	Ch. 8, Sec. VI to VIII: Deductive reasoning II	Homework 7	
12	Apr 7	Ch. 8, Sec. IX to XII: Deductive reasoning III	Homework 8	
13	Apr 14	Ch. 9: Categorical syllogisms. Review for final	Homework 9	
14	Apr 21			Final (Ch. 1–10)