HPS 611 Principles of Scientific Reasoning
Spring 2003
Monday 6:00–8:30 pm, CL 321

Instructor: Ingo Brigandt
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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 are problems.

Course schedule and assignments

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