HPS 2501/PHIL 2600 Philosophy of Science (Core) Fall 2002

Requirements: At least one class presentation. \( N \) short (2-3 pages, typed, double spaced) papers, where \( N = (6 - (# \text{ of presentations} - 1)) \). Final in-class exam, December 10.

Content: Roughly the first 2/3 of the course will be devoted to a survey of methodological problems in the philosophy of science while the last 1/3 will focus on foundations issues in particular sciences.

Overview


Methodological issues

A. The demarcation problem

General issues:


Two applications:

1. The Arkansas Creationism Act, the Overton decision in McLean v. Arkansas, and the philosophical aftermath.
   (a) “Act 590 of 1981”
   (b) Excerpts from the testimony of Michael Ruse
   (c) Excerpts from Overton’s decision
2. Astrology
   (a) Thagard, “Pseudoscience,” from Computational Philosophy, pp. 157-173.

B. Probability, induction, and confirmation

C. The structure of scientific theories (syntactical vs. semantic view, statement vs. models view, etc.)


D. Scientific realism
Realism vs. instrumentalism

Realism vs. constructive empiricism

E. Laws of nature
4. Lewis, Counterfactuals, pp. 72-77.

F. Explanation

**Foundations issues**

**A. The philosophy of biology**
Sandy Mitchell, Paul Griffiths, and James Lennox will make guest appearances to share their expertise in this exciting field.

**B. Laws, symmetries, and invariances**

**C. Determinism**

**D. The philosophy of space and time: time travel and time machines**

**E. The measurement problem in quantum mechanics**