730 Philosophy 425 Sect 01 Philosophy of Science

Instructor: Sidney Felder, e-mail: sf30@panix.com
Rutgers The State University of New Jersey, Spring 2018, Tu & Th 4:10-5:50

Weeks 1, 2) Some Views of the Character of Science:
  T. H. Huxley    The Method of Scientific Investigation
  Ernst Mach     The Economical Nature of Physics
  C.S. Peirce    The Fixation of Belief; How to Make Our Ideas Clear

Weeks 2, 3, 4, 5, 6) Evidence and Hypothesis:
  David Hume    An Enquiry Concerning Human Understanding (Sections IV-VII)
  Nelson Goodman The New Riddle of Induction (in Fact, Fiction and Forecast)
  Karl Popper   Science: Conjectures and Refutations
  Carl Hempel   Studies in the Logic of Confirmation
  Hermann Weyl  Philosophy of Mathematics and Natural Science (Chapter 1)
  Pierre Duhem  Physical Theory and Experiment (in The Aim and Structure of Physical Theory)
  Henri Poincaré Space and Geometry (in Science and Hypothesis)
  Arthur Eddington What is Geometry? (in Space, Time and Gravitation)
  Albert Einstein Geometry and Experience

Weeks 7, 8, 9) Observation, Theory, and Reality
  Hilary Putnam  What Theories are Not
  Bertrand Russell Similarity of Relations (in Introduction to Mathematical Philosophy)
  —             The Analysis of Matter (chapters XIX, XXIII, and XXIV)
  L. Wittgenstein Tractatus Logico-Philosophicus (5.133-5.156, 6.3-6.372)
  Moritz Schlick Positivism and Realism

Weeks 9, 10, 11, 12, 13) Generalizations, Laws, and Probabilities
  Ernest Nagel    The Structure of Science (Chapter 4)
  Henri Poincaré Chance (in Science and Method)
  J. M. Keynes   A Treatise on Probability (Chapters XXIV, XXV, XXVI)
  Frank Ramsey   Law and Causality
  David Lewis    Counterfactual Dependence and Time’s Arrow
  Bertrand Russell On the Notion of Cause
  Kurt Gödel     A Remark about the Relationship between Relativity Theory and Idealistic Philosophy
Weeks 13, 14) Explanation and The Unity of Science

Jerry Fodor Special Sciences (or: The Disunity of Science as a Working Hypothesis)
David Albert Physics and Chance (in After Physics)

There will be a take-home exam, to be submitted either in class or (if e-mailed) either in PDF or text format. Final grade will be determined by quality of both written work and class participation.

Note: The university has directed that all syllabi make note of the existence of The Rutgers Self-Reporting Absence Website (https://sims.rutgers.edu/ssra), as well as of the request that it be utilized by students to indicate the date(s) and reason for their absence from class.