730 Philosophy 225 Sect 01 Introduction to Philosophy of Science

Instructor: Sidney Felder, e-mail: sf30@panix.com
Rutgers The State University of New Jersey, Fall 2021. Tu & Th 3:00-4:20

Weeks 1, 2, 3 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 3, 4, 5, 6, 7 Evidence, Theory, and Reality
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
Henri Poincaré Space and Geometry (in Science and Hypothesis)
Pierre Duhem Physical Theory and Experiment (in The Aim and Structure of Physical Theory)
Moritz Schlick Positivism and Realism

Weeks 8, 9, 10, 11, 12 Generalizations, Laws, and Probabilities
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 by e-mail either in PDF or text format before the end of the Final Exam Period. Final grade will be determined by quality of both written work and class participation.