730 Philosophy 425 Sect 01 Philosophy of Science

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Rutgers The State University of New Jersey, Spring 2014, Tu & Th 2:50-4:10

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) Logic and Axiomatic Systems
   Hermann Weyl   Philosophy of Mathematics and Natural Science (Chapter 1)

Weeks 3, 4) The Problem of Induction:
   David Hume   An Enquiry Concerning Human Understanding (Sections IV-VII)
   Nelson Goodman   The New Riddle of Induction (in Fact, Fiction and Forecast)

Weeks 4, 5, 6) Evidence and Theory:
   Karl Popper   Science: Conjectures and Refutations
   Carl Hempel   Studies in the Logic of Confirmation
   Henri Poincaré   Space and Geometry (in Science and Hypothesis)

Weeks 6, 7, 8) Observation, Theory, and Reality
   Moritz Schlick   Positivism and Realism
   Thomas Kuhn   The Structure of Scientific Revolutions (Chapter X)

Weeks 8, 9, 10, 11, 12) Generalizations, Laws, and Probabilities
   Ernest Nagel   The Structure of Science (Chapter 4)
   Frank Ramsey   Law and Causality
   David Lewis   Counterfactual Dependence and Time’s Arrow
   Bertrand Russell   On the Notion of Cause

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, Chance, and Explanatory Unity

There will be two take-home exams. 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), and of the request that it be utilized by students to indicate the date(s) and reason for their absence from class.