**PHIL 300 PHILOSOPHY OF SCIENCE**

**FALL 2021**

**Instructor:** Gürol Irzık FASS 1049

**Class Hours:** M 15:40-17:30 and T 12:40-13:30

**Office hours:** T 16:30 or by appointment

**TA:** Ege Mehmet Akman

**Course description:** This course is an introduction to the main issues in the philosophy of science with some emphasis on the historical evolution of science. Topics to be covered are the emergence of science; the Scientific Revolution in the 16th and 17th centuries; scientific hypotheses, theories and their testing; aims of science; the problem of demarcation; the problem of induction; the nature of scientific explanation; objectivity and rationality of science; and the issue of trust in science.

**Lecture Format:** The course will be conducted online. Lectures will be live and recorded. I will upload them to the SUCourse+. Attendance is strongly encouraged.

**Grading Policy:** The course grade will be based three take-home essays (30 % each), attendance and participation (10 %). There will be no final exam. Take-home essay topics will be given at least two days before their due date. Due dates are indicated below. Each essay will be maximum 3-pages, double-spaced and 12 fonts.

**Required readings** are available on the SUCourse+. They also include documents about plagiarism, how to study, and a Glossary. Please consult them. Whenever you come across a philosophical concept or position with which you are not familiar, you are advised to use the Glossary and the Stanford Encyclopedia of Philosophy freely available online at <http://plato.stanford.edu/> **You should do the required readings** **before the class meeting so that we can have an informed and fruitful discussion**.

Course content, requirements and policies are subject to change at the discretion of the instructor.

**Recommended readings (On reserve in the Information Center):**

D. Lindberg, *The Beginnings of Western Science*, 2nd ed. Chicago: Chicago University Press, 2007.

R. Westfall, *The Construction of Modern Science*. New York: John Wiley & Sons, 1971. (Our IC has only the Turkish version.)

A. Chalmers, *What is this Thing Called Science*? 3rd ed. Indianapolis; Cambridge: Hackett, 1999. (On reserve)

***The Routledge Companion to Philosophy of Science*. (Eds.) S. Psillos and M. Curd.** New York: Routledge, 2010. (On reserve)

**Course Readings, Structure and Schedule**

**I. The Emergence of Science and Early Greek Science**

**Sep. 27-28:** Introduction & G. E. R. Lloyd, “The Background and the Beginnings”, *Early Greek Science: Thales to Aristotle*. New York: W. W. Norton & Company, 1970, pp. 1-15.

**Oct. 4-5:** J. Jacob, “The Classical Legacy”, *The Scientific Revolution*. New York: Humanity Books, 1999, pp. 1-17.

**II. Physical Science in the Middle Ages**

**Oct. 11-12:** E. Grant, Excerpts from *Physical Science in the Middle Ages*. Cambridge: Cambridge University Press, 1977, pp. 48-59 and 83-90.

**III. The Scientific Revolution in the 16th and 17th Centuries**

**Oct. 18-19:** M. Alspector-Kelly, “Unit 2: The Scientific Revolution”, in T. McGrew, M. Alspector-Kelly and F. Allhoff (eds.), *Philosophy of Science: An Historical Anthology*. Wiley-Blackwell, 2009, pp. 95-107.

**Oct. 25-26:** Alspector-Kelly finished.

C. Huygens, “Successful Hypotheses and High Probability”, in T. McGrew, M. Alspector-Kelly and F. Allhoff (eds.), *Philosophy of Science: An Historical Anthology*. Wiley-Blackwell, 2009, pp. 162-163.

**Nov. 1: 1st take-home essay due**

**IV. Understanding Scientific Methodology 1**

**Nov. 1-2:** C. Hempel, Chapters 1, 2 and 3), in *Philosophy of Natural Science* (Englewood Cliffs: Prentice Hall, 1966), pp. 1-32.

**Nov. 8-9:** K. Popper, “Science: Conjectures and Refutations”, in *Conjectures and Refutations*, Harper and Torch books, 1963, pp. 33-59.

**Nov. 15-16:** Popper continued.

**V. Understanding Scientific Revolutions**

**Nov. 22-23:** T. Kuhn, *The Structure of Scientific Revolutions*, in *Philosophy of Science* (eds) T. McGrew, M. Alspector-Kelly and F. Allhoff, Wiley-Blackwell, 2009.

**Nov. 29-30:** Kuhn continued.

**Dec. 6 2nd take-home essay due**

**VI. Understanding Scientific Methodology 2 and Experiment**

**Dec. 6-7:** R. Giere, “Chapter 8-Evaluating Causal Hypotheses”, in *Understanding Scientific Reasoning*, 4th ed. Harcourt Brace College Pub., 1997, pp. 210-243

**Dec. 13-14:** T. Arabatzis, “Experiment”, in ***The Routledge Companion to Philosophy of Science*. (Eds.) S. Psillos and M. Curd.** New York: Routledge, 2010, pp. 159-172

**VII. Trust in Science**

**Dec. 20-21:** N. Oreskes, *Why Trust Science*?, Princeton: Princeton University Press, pp. 55-64.

**Dec. 27-28:** P. Kitcher and E. F. Keller, *The Seasons Alter*. New York: Liveright, pp. 1-19.

**G. Irzık and F. Kurtulmuş, “What is Public Trust in Science”? Abridged.**

**Full version can be found in *The British Journal for the Philosophy of Science*, 70 (4): 1145-1166, 2019.**

**Jan. 9: 3rd take-home essay due**