Purpose of Course

This course is a survey of philosophical issues surrounding the concepts and practices of modern science. The course covers the major areas of contemporary philosophy of science, including scientific reasoning, scientific progress, interpretations of scientific knowledge, and the social organization of scientific practice. Its aim is not only to familiarize you with philosophical issues about science but also to equip you to critically interpret popular reports about contemporary scientific research.

Unit 1 introduces philosophy of science as a discipline distinct from psychology of science, history of science, and sociology of science. Unit 2 examines the nature and objectivity of observational evidence, and Unit 3 examines methods of reasoning relevant to induction, confirmation, and explanation. Unit 4 examines accounts of theory change and scientific progress, and Unit 5 addresses the interpretation of scientific knowledge. Finally, Unit 6 explores various topics concerning science in a social context.

Throughout this course, you will become acquainted with the views of a number of influential philosophers of science, including David Hume, Pierre Duhem, Carl Hempel, Karl Popper, Thomas Kuhn, Imre Lakatos, Bas van Fraassen, Philip Kitcher, and Helen Longino. You will read some selections from scientific research too, by way of news articles and case studies, in order to connect philosophical views about science to actual scientific practice. You should approach the content of this course with an attitude that is neither hostile toward nor naïve about science, but is instead critically engaged in trying to understand science as a human activity.