

History and Philosophy of Science

(2 credits)

Graduate Course, HBCSE, TIFR
2019-2020 – Semester 2
Winter 2020

Course Instructor: G. Nagarjuna (nagarjuna@hbcse.tifr.res.in)
Total Credits: 2

Course time and day: Monday 3:00 PM – 5:00 PM
Venue: Room 217, HBCSE main building

Course Description: The Course has two parts:

Part 1: Reflections on the nature of science before Thomas Kuhn,

Part 2: Reflections on the nature of science after Kuhn.

We will discuss structure of scientific knowledge, nature of scientific representations, and the sociological and historical turn. Discussions in the class will be on the history of science as well as philosophy. For each of the issues, we will discuss the implications to STEM education.

For those who credit the course, the evaluation is in terms of regular participation at the private online forum, active participation in the class, a seminar and a term paper on the topic of the seminar.

Some of the Suggested Readings and books to refer:

- Understanding Scientific Theories: An Assessment of Developments 1969-1998, Frederick Suppe 2000
- Science and Hypothesis, Larry Laudan
- The Structure of Scientific Revolutions Thomas Kuhn
- The Routledge Companion to Philosophy of Science Stathis Psillos and Martin Curd
- Representing and Intervening Ian Hacking
- The nature of science in science education William F. McComas
- Thematic Origins of Science Gerald Holton