Birla Institute of Technology & Science, Pilani
Hyderabad Campus

**SECOND SEMESTER 2023-2024**

Course Handout Part II

Date: 09/01/24

In addition to Part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

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| Course No. | : **HSS F379** |
| Course Title | : **Introduction to Philosophy of Science** |
| Instructor-in-Charge | : **Biswanath Dash,** Room No. K 131, HSS |

**Scope and Objective of the Course:** Throughout history, science has dramatically changed the pace and mode of human life. It gained momentum during the modern era when different branches of science emerged. In addition to systematizing knowledge, these derivative scientific inquiries organized the study of worldly phenomena. It is, however, the mother of all subjects, the philosophy that has historically shaped the sense of scientific inquiry with its arguments and counter arguments. This course first examines the basics of philosophical perspectives on scientific inquiry. With this course, students will be able to recognize the questions about science and how they differ from scientific questions. It provides a clear understanding of what is distinctive about science, i.e., how it differs from other human enterprises regarding knowledge, methods, implications, and values. It enables students to understand how philosophy scrutinizes scientific theories and explanations in their attempt to unveil the causality of phenomena. It also aims to create an awareness among students about how science relates to philosophy and further make sense of the philosophical issues in different branches of science.

The course introduces students various philosophical perspectives on science in general. It mainly considers a few of the classic questions in the philosophy of science: What is it to call something a science? How does scientific reasoning work? What is the nature of scientific explanation? How do scientific theories change over time? Are scientific theories true? Is science value-free? A detailed discussions on these will enable students to understand the concern of philosophy of science, in general, and various thought provoking philosophical issues associated with different branches of science, in specific. In the end, students will be knowledgeable about the critical issues in the philosophy of science. They will find themselves comfortable discussing complex ideas and able to analyze and construct philosophical arguments concerning science

**Textbooks:**

Okasha, Samir. 2002. Philosophy of Science-A Very Short Introduction. OUP. NY.

**Reference books**

Merrilee H. Salmon., et.al. 1999[1992]. Introduction to the Philosophy of Science. Hackett Publishing Company. Indianapolis.

**Course Plan:**

| Lecture No. | Learning objectives | Topics to be covered | Chapter in the Text Book |
|---|---|---|---|
| 1-2 | Gain an overall perspective of the course | Course Structure<br>Introduction to Philosophy of Science | TB Chapter 1 |
| 3-8 | Learn about origin and evolution of Natural Philosophy | Greek Natural Philosophy: Major thinkers and Aristotelianism | Reference paper |
| 9-14 | Examine idea of scientific revolution | Copernican, Kepler, Galileo, Descartes, and Newton | TB Chapter 5<br>Reference paper |
| 15-17 | Learn ancient India knowledge system | Vedic worldview and science | Reference paper |
| 18-24 | Engage critically with science | Scientific reasoning and scientific explanation<br>Philosophical problems with science, Logical positivism, under-determination | TB Chapter 1-3, 4 and 6 |
| 26-32 | Exposure to the philosophical debate over rationality | Empiricism and rationality: Kuhn, Popper, Chomsky, Descartes etc.<br>Realism and anti-realism | TB Chapter 4 |
| 33-40 | To examine ethical questions relating to technology | Ethical questions concerning AI, disruptive technologies | Reference papers |

**Evaluation Scheme:**

| Component | Duration (Minutes) | Weightage (%) | Date & Time | Nature of Component |
|---|---|---|---|---|
| Assignment/Quiz | | 20 | TBA | Open Book |
| Mid semester Examination | 90 | 30 | 15/03 - 4.00 - 5.30PM | Closed Book |
| Surprise Quiz | TBA | 15 | TBA | Closed Book |
| Comprehensive examination | 180 | 35 | 17/05 AN | Close Book |

**Notices:** Notices will be displayed on CMS.

**Plagiarism:** Cutting and pasting from websites is considered plagiarism. If you are not sure how to write avoiding plagiarism, please ask the instructor. Plagiarism in assignment including from Chat GPT will fetch zero.

**Chamber consultation:** Thursday 12-1 pm

**Make-up Policy:** Make-up for an evaluation component such as Mid Semester and CE will be given only in genuine cases.

**Academic Honesty and Integrity Policy**: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**Biswanath Dash**

**INSTRUCTOR-IN-CHARGE**