PHIL 2613 PHILOSOPHY OF SCIENCE(3 credit hours)

Elmira College

SPRING 2025

Required Text:
Curd and Cover, (2012) ***Philosophy of Science: The Central Issues (New Second Edition)***, Norton & Co.
Supplemental readings might be included to illustrate or expand on textbook readings.

Pre-requisites: None.

Course Description

This course aims to introduce students to the core issues of the philosophy of science, especially the debates on the nature of scientific method, confirmation theory, demarcation between science and non-science, the rationality of theory change, and scientific realism. Through the analysis of scientific theories' structure and functionality, as well as the progression of scientific knowledge, the course explores the reason and objectiveness.

Course Objectives and Goals

- Critically evaluate key philosophical interpretations of many core themes in the philosophy of science, including epistemology of science and metaphysics.
- Compose philosophically cohesive essays that explicate philosophical theories and subject them to critical evaluation.
- Engage in systematic discussions of philosophical arguments and presenting them to peers in a coherent.
- Possess a critical awareness of the foundational themes in the philosophy.

Evaluation of Performance

Your grade will be based upon your performance on exams, assignments, and participation.

Assignments	60%
Midterm Exam	20%
Final Exam	20%
Total	100%

Grades will be assigned as follows:

A	93% and above	B-	80 - 82%	D+	67 - 69%
A-	90 - 92%	C+	77 - 79%	D	63 - 66%
B+	87 - 89%	C	73 - 76%	D-	60 - 62%

B 83 - 86% C- 70 - 72% F 59% or below

Withdrawal Policy: Please see Elmira College Bulletin for information on this policy.

Academic Honesty: Please read the section on Academic Honesty in the **Code of Conduct**. Briefly, academic dishonesty includes: cheating, fabrication, facilitating academic dishonesty, and plagiarism. Ask if you have any questions on whether something constitutes as academic dishonesty. All work must be original and new. Past assignments from current or other courses will not be accepted. Academic dishonesty will not be tolerated. It will result in zero on the assignment, and a report will be filed with the school. Continued practice will result in failure of the class. Institutional penalties may also apply with repeated acts of academic honesty.

Student Responsibility:

- It is your responsibility to keep track of assignments and due dates.
- You should ask questions concerning assignments and lectures, if you need any clarifications.
- If you are struggling in class, have concerns, and/or unsure about expectations, please stop by during office hours or make an appointment for another time.

Tentative Schedule of Topics

Module	Topics	Materials	Tasks
1	Course Overview Science and Pseudoscience	Chapter 1	
2	Conjectures and Refutations Logic of discovery or Psychology of Research	Chapter 1	Assignment 1
3	Rationality, Objectivity, and Values in Science Objectivity, Value Judgment, and Theory Choice	Chapter 2	
4	Rationality and Paradigm Change in Science	Chapter 2	Assignment 2
5	Physical Theory and Experiment Two Dogmas of Empiricism	Chapter 3	
6	The Duhem Thesis and the Quine Thesis Demystifying Underdetermination The Duhem Problem	Chapter 3	Assignment 3
7	Induction, Prediction, and Evidence	Chapter 4	Midterm Exam
8	Confirmation and Relevance:Bayesian Approaches A Critique of Salmon’s Bayesian Way	Chapter 5	
9	The Bayesian Approach Therapeutic Bayesianism	Chapter 5	
10	Models of Explanation Two Basic Types of Scientific Explanation	Chapter 6	
11	Inductive-Statistical Explanation	Chapter 6	Assignment 4

	A Deductive-Nomological Model of Probabilistic Explanation The Manipulability Conception of Casual Explanation		
12	Laws of Nature Necessities and Universals in Natural Laws	Chapter 7	Assignment 5
13	Intertheoretic Reduction Issues in the Logic of Reductive Explanations Tolerance in Matters Epistemological	Chapter 8	
14	Empiricism and scientific Realism History of Logical Empiricism The Natural Ontological Attitude	Chapter 9	Final Exam