

## PHIL 3372-05: Philosophy of Science

Sam Houston State University

Spring 2022 | CRN: 22305

SHSU Online

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**Instructor:** Dr. Thomas Brommage

**Office:** CHSS 347

**Office Hours:** M/W 1–2:30 PM & by appt.

**Office Phone:** 936-294-2460

**Google Voice:** 267-CALL-DR-B

**Email:** [brommage@shsu.edu](mailto:brommage@shsu.edu)

**Course Description:** Students survey topics in philosophy of science, which may include the logic of explanations in the physical and social sciences, the relationship between science and society, and metaphysical or sociological critiques of science. Course content includes attention to historically prominent examples from social and natural sciences that demonstrate the applicability of important concepts from the philosophy of science.

**Course Modality (Online):** This is designed as a fully online class delivered through SHSU Online. Content delivery will be asynchronous and remote, and all assignments will be completed and graded through the Blackboard system. There may be occasional course meetings scheduled for class review (depending on student demand) but attendance in these will be optional, and recordings will be available for those whom are not able to join.

**Prerequisites:** N/A

**Textbook:** Steve Gimbel, *Exploring the Scientific Method: Cases and Questions* (Chicago, 2011), ISBN: 978-0-22629-483-4. \$35.

### Course Objectives and Learning Outcomes:

1. *Learning fundamental principles, generalizations or theories:* Throughout this course, we will discuss the various approaches to scientific methodology, and the benefits and drawbacks of each.
2. *Learning to apply course material to improve thinking, problem solving and decisions:* Throughout this course, we will be using the various theories to evaluate scientific reasoning within your chosen field of study.
3. *Learning to analyze and critically evaluate ideas, arguments, and points of view:* The papers are designed to understand and evaluate the various methods to understand and evaluate scientific discoveries.
4. *Developing skill in expressing oneself orally or in writing:* The assessments are designed to improve your writing and thinking through the basic terms and distinctions of forms of scientific reasoning, as well as the various forms of scientific explanation.

**Writing Enhanced:** This is a “W” course, which means that at least 50 percent of your course grade will derive from writing activities designed to help you master course objectives. Writing in this course is one of the tools your instructor will use to help you learn course material. Some writing activities will require you to draft and revise your work, with or without instructor feedback. Others may not receive a grade but are designed to assist you in critical reflection of the course material. You should approach writing in this course as a tool to use as part of your learning as well as a tool your instructor will use to assess your level of learning.

**Course Schedule:**

January 12 – 14	.....	Course Introduction & Logic Review
January 15 – 21	.....	<i>Deductivism: Aristotle, Post. Analytics and Physics</i>
January 22 – 28	.....	<i>Deductivism: Descartes, Discourse; Exam #1</i>
Jan 29 – Feb 4	.....	<i>Inductivism: Bacon, Novum Organum and Newton, Principia</i>
February 5 – 11	.....	<i>Inductivism Mill, System of Logic; Exam #2</i>
February 12 – 18	.....	<i>Hypothetico-Deductivism: Whewell, Carnap, Braithwaite</i>
February 19 – 25	.....	<i>Paradoxes of Confirmation: Hume, Hempel, Goodman</i>
Feb 26 – Mar 4	.....	<i>Falsification: Popper; Exam #3</i>
March 5 – 11	.....	<i>Confirmation Holism: Duhem, Kuhn</i>
March 12 – 18	.....	Spring Break (no class)
March 19 – 25	.....	<i>Confirmation Holism: Lakatos</i>
Mar 26 – Apr 1	.....	<i>Semantic Modeling: Spector, Black</i>
April 2 – 8	.....	<i>Semantic Modeling: Geire; Exam #4</i>
April 9 – 15	.....	<i>Critical Views: Feyerabend, Hubbard</i>
April 16 – 22	.....	<i>Critical Views: LaTour</i>
Apr 23 – May 8	.....	Review & Final Exam; Exam #5

**Important Dates:**

MLK Holiday (no class)	.....	January 17th
Add/Drop Deadline	.....	January 28th
Spring Break (no class)	.....	March 14th – 18th
Q-Drop Deadline	.....	March 25th
Good Friday (no class)	.....	April 15th
Course Final	.....	May 8th

**Exams:** There will be five exams given throughout the course, which includes the cumulative final exam. Each exam (except for the cumulative final) will cover around 1 to 3 Units each. Each exam will open after that corresponding group of Units closes, and will remain open for at least five calendar days. The best four of five exams will be counted into calculating your final grade. There will be NO “make-up” opportunities on the exams.

More information on each of the types of assignments will be available under a separate “Assignment Guidelines” sheet, posted on [Blackboard](#).

The following weighting will be used to calculate your course grade:

Exams (best 4 of 5): 4 x 20% ea. ....	= 80%
Discussion Board (best 8 of 10) x 2.5% ea. ....	= 20%

Your rounded average of these assignments will determine your grade, based on the following scale:

A .....	100% – 89.5%
B .....	89.4% – 79.5%
C .....	79.4% – 69.5%
D .....	69.4% – 59.5%
F .....	59.4% – 0%

**Academic Dishonesty:** Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Please be aware that plagiarized work and any form of academic dishonesty will result in an “F” on the assignment. [SHSU Academic Policy Statement 810213](#) outlines the definition of academic honesty and the related disciplinary procedures.

You should also familiarize yourself with [Academic Policy Statement 900823](#), which outlines the procedures for students to file an academic grievance should you wish to appeal your grade for reasons other than academic dishonesty. Please read through these policies carefully.

**Course Evaluations:** In accordance with University policy every student will have an opportunity at a specified date and time near the end of the semester to complete a course evaluation form from the IDEA course evaluation system.

For University policies on Student Absences on Religious Holy Days, Students with Disabilities, and Visitors in the Classroom you may view to the official statements on the SHSU Website, <http://www.shsu.edu/syllabus/>

**Expectations, Suggestions and Mandates for an efficient class:**

1. This is a fully-online class, offered asynchronously through SHSU Online. An online class is not easier or less work than a traditional online class. In fact, they are usually harder and require more work. Self-motivation is key to succeed in an course like this. If you are not reading the assigned texts and watching the corresponding lecture videos, this is analogous to not showing up to class in an in-person class. Do not expect to be able to “Google” your way through this course.
2. Try to complete the week’s work early. Waiting until the due date to begin the week’s assignment is not advisable. Some of the assignments may take several hours to complete.
3. Especially true in philosophy more than most other subjects, diligence is important. Some of the reading will be difficult since we are looking at some of the most profound ideas in the history of the world. The difficulty of the subject is indirectly proportional to the amount of work put into the course.

4. Expect to have up to five hours a week of reading and thinking each week in order to earn an “A” for the course. Additionally, for these reasons, active participation in the course—which includes reading the assigned texts and watching the corresponding lecture videos—is of vital importance. *If you do not regularly log in or keep up with the reading and videos, do not expect to pass this class!*
5. Please feel free to make mistakes. We all will from time to time—including your omniscient instructor.
6. Please feel free to make an appointment to discuss the material you do not understand. Waiting until the last moment in the semester to catch up is not advisable. I am excellent at fixing small problems, but horrendous at fixing large ones. The only difference between small and large problems is time.
7. Have fun! The material is only as dry as you make it out to be. Sharpening one’s mind can be an exhilarating process.