

PHIL 265A Philosophy of Science

3 Credits, 3 hours

This course is designed as an introduction to the central issues in the philosophy of science. Topics may include the problem of induction, demarcating science and non-science, the logic of discovery and justification in science, paradigm shifts and theory change, and the role of science in society.

Instructor

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Office Hours

Wednesdays 2:00pm – 4:00pm
Thursdays 11:00am – 12:00pm
Fridays 2:00pm – 4:00pm
(or by appointment)

Hours of Instruction

Mondays 3:30pm – 4:50pm
Thursdays 3:30pm-4:50pm

Required Resources

A course package has been designed specifically for this course and is available in the campus bookstore.

Course Outcomes

Upon successful completion of the course, students will be able to:

- Identify and understand some key values of science.
- Identify and understand some contemporary issues in the philosophy of science.
- Demonstrate the ability to write an argumentative term paper which includes scholarly academic research and properly adopts APA or MLA referencing.

Evaluation

Students will be evaluated based on the completion of four assignments. These assignments include: a term exam, term paper, a final exam and on-line discussion topics. Below is a brief description of each assignment, as well as relevant due dates.

On-line Discussions	TBA	15%
Term Exam	15 February	25%
Term Paper	22 March	25%
Final Exam	TBA	35%
Total		100%

A grade of C- is required for progression or transfer.

On-line Discussions

At five points throughout the term I will post discussion topics for students to comment on. The total value of the assignment is 15%, and therefore 3% for every post. Your response does not have to be lengthy – between 150-300 words - but must exhibit understanding, clarity, accuracy, good reflections and focus only on relevant material. Each topic will be available for only week and late submissions will not be accepted.

First Exam

The first exam will include multiple choice questions, short-answer questions and an essay question. The essay question will be provided before the exam, and it will follow the same format as the term paper. Students will be given a specific outline of the exam, including mark distribution, before the exam occurs. The value of this exam is 25% of the total grade.

Term Paper

The term paper should be between 8-10 pages (or 2400-3000 words), contain two references from the course textbook and one external source. The external source must be a peer reviewed academic source. A topics list will be provided for the term paper. Students must pick their term paper topic from this topic list or otherwise suffer a significant penalty. A basic format for the term paper, that also indicates the method evaluation, will be provided early in the term. The value of the term paper is 25% of the total grade.

Final Exam

The final exam will cover material considered after the first exam. This exam will include short answer questions and two essay questions. More details will be offered concerning this exam as it approaches. The value of the final exam is 35% of the total grade.

Grading System

Descriptor	Alpha Grade	4.0 Scale	Percent	Rubric for Letter Grades
Excellent	A+	4.0	> 92.9	Work shows in-depth and critical analysis, well developed ideas, creativity, excellent writing, clarity and proper format.
	A	4.0	85 – 92.9	
	A-	3.7	80 – 84.9	
Good	B+	3.3	77 – 79.9	Work is generally of high quality, well developed, well written, has clarity, and uses proper format.
	B	3.0	74 – 76.9	
	B-	2.7	70 – 73.9	
Satisfactory	C+	2.3	67 – 69.9	Work has some developed ideas but needs more attention to clarity, style and formatting.
	C	2.0	64 – 66.9	
	Progression	C-	1.7	
Poor	D+	1.3	55 – 59.9	
Minimum Pass	D	1.0	50 – 54.9	

				Work is completed in a general way with minimal support, or is poorly written or did not use proper format.
Failure	F	0.0	< 50	Responses fail to demonstrate appropriate understanding or are fundamentally incomplete.

Proposed Schedule of Topics and Readings

1. The Scientific Method

- 1.1 **Francis Bacon**, Excerpts from *The New Organon*, pp.2-3, 6-20.
- 1.2 **David Hume**, Excerpts from An Enquiry Concerning Human Understanding, pp.322-333.
- 1.3 **Rudolf Carnap**, "The Scientific Conception of the World: The Vienna Circle," pp.996-1007.
- 1.4 **Otto Neurath**, "Protocol Sentences," pp.199-208.
- 1.5 **Carl Hempel**, "Scientific Inquiry: Invention and Test," pp.3-18.
- 1.6 **Karl Popper**, "Science: Conjectures and Refutations," pp.33-59.
- 1.7 **Thomas Kuhn**, "The Nature of Normal Science," pp.23-35.
- 1.8 **Thomas Kuhn**, "Objectivity, Value Judgment and Theory Choice," pp.320-339.

2. Realism, Antirealism and Structural Realism

- 2.1 **Bas van Fraassen**, "Arguments Concerning Scientific Realism," pp.1064-1087.
- 2.2 **Stathis Psillos**, "Agnostic empiricism versus scientific realism: belief in truth matters," pp.57-75.
- 2.3 **Stathis Psillos**, "Is Structural Realism the Best of Both Worlds?" pp.15-46.

3. Science and Ethics

- 3.1 **A. J. Ayer**, "Critique of Ethics," pp.353-359.
- 3.2 **David B. Resnik**, "Standards of Ethical Conduct in Science," pp.53-73.
- 1.3. **Heather Douglas**, "Inductive Risk and Values in Science," pp.559-579.

Performance Requirements

A late penalty of 3 marks per day, on a scale of 100, will apply to all late assignments, but will be waived for legitimate reasons if supporting documentation is provided. If an assignment is late, and not handed-in during class time, arrangements must be made with the instructor to hand-in the assignment. Late penalties do not apply to on-line discussions, as they cannot be submitted late. No term papers are accepted after the last day of classes. Should an assignment go missing, and the student is unable to produce another copy, the assignment will be considered not submitted. Likewise, if a grade is not recorded for an assignment the onus is on the student to demonstrate that the assignment was completed and graded. No changes can be made to the class schedule.

Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College credit calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a students' learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found on ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

Specialized Supports**Counselling and Accessibility Services**

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

SKILL Centre

The SKILL Centre is a learning space in the Clearwater Campus at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.