



GRANDE PRAIRIE REGIONAL COLLEGE  
Philosophy 2650  
INTRODUCTION TO THE PHILOSOPHY OF SCIENCE  
Fall 2012  
3 (3-0-0) UT 45 Hours

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Office Hours: Thursdays 3-4:30 p.m.; Fridays 1:30-3 p.m. and by appointment

**Prerequisite:** There is no prerequisite for taking this course.

**Required Readings:**

1. Theodore Schick, Jr., editor, Readings in the Philosophy of Science: From Positivism to Postmodernism. Mountain View, California: Mayfield Publishing Company, 2000.
2. Readings posted on Moodle, class handouts, and internet and database readings.

Recommended “very short introduction”:

- Samir Okasha, Philosophy of Science: A Very Short Introduction. New York: Oxford University Press, 2002.

**College calendar course description:**

This is an introduction to the central issues in contemporary philosophy of science. Topics may include theory of evaluation, paradigm shifts and theory change, laws of nature, causation and explanation, the rationality of science and its social and historical setting.

**Course introduction 2012:**

Philosophy of science explores basic, fundamental questions about the nature, methods, and findings of science. What is science? What distinguishes science from nonscience and pseudoscience? How does it reach conclusions? How much confidence should we have in it? Why? Many people consider science to be the pinnacle of human intellectual achievement. But it does have its critics - certain religious believers, feminists and postmodernists among them. Do they have any or many strong points?

Philosophy of science is a careful, reasoned, logical and systematic exploration of questions about science in general, but with the possibility of application to more specific topic areas. Consequently, what we say about science may vary according to the topic. Are we discussing the natural sciences or the social sciences? Are we attempting to offer explanations of origins of the universe, chemical properties and processes, matter, energy and motion, individual human behaviour, social interaction,

the existence of the paranormal, nutrition, food and drug safety, the effectiveness of alternative medicine, human contributions to climate change or other matters? Our degree of confidence in science, or science as it is practised in different areas, may vary. How much should it?

Questions such as these will be our focus.

Philosophers can also reflect upon big picture questions which go beyond the contents of this course. How important is it for students and the general population to be science literate? Why? How much should government and society rely on science? For what? What should determine the research goals of science? How should science be used? What are unethical directions? Who should decide?

**Contact Hours:**

This is a three credit course with three hours of instructional time a week.

**Delivery Mode:**

Classroom time will be used for lectures and discussions.

**Course objectives:**

This course is an introduction to the philosophy of science. It is intended to familiarize you with:

1. relevant background information about philosophy, including different branches of the discipline such as metaphysics, epistemology, and logic
2. basic concepts, ideas and perspectives used by philosophers of science
3. general topics and debates in the field
4. controversies in specific areas such as religion and biology, sociobiology and others, time permitting.

Ultimately, as an introductory course, the main goal is to equip you with basic knowledge of the field, and assist you in being philosophical about science, whether on your own or in conjunction with further studies.

**Transferability:** UA, UC, UL, AU, AF, AF, GMU, KUC

\* The grade of D or D+ may not be accepted for transfer to other postsecondary institutions. You are cautioned that it is your responsibility to contact the receiving institutions to ensure transferability.

Please be informed that it is not the instructor's policy to allow exams or assignments to be rewritten, or extra work done to increase marks. You are welcome, however, to consult with the instructor prior to exams and assignment due dates.

**Course requirements:**

First exam.....	20%
Second exam.....	25%
Journal assignment.....	25%
Final exam .....	30%

Marks will be given in percentage figures before conversion to a letter grade.

**Conversion table:**

A+ 90-100	B+ 76-79	C+ 67-69	D+ 55-59
A 85- 89	B 73-75	C 64-66	D 50-54
A- 80- 84	B- 70-72	C- 60-63	F 0-49

For conversion of letter grades to the four-point scale, see the GPRC calendar.

**Student Responsibilities:**

\* You are expected to devote time in the classroom to the class itself. Use of cell phones and use of laptops for non-class purposes is unacceptable. It is also not acceptable to socialize or do work on other courses during the class.

\* You are strongly advised to keep a copy of your own of any work you submit for grading at least until you have your work returned to you.

\*\* Students who miss an excessive number of classes (i.e. more than six, without reasonable justification such as illness) may be denied the opportunity to write the final exam, as stated in the Calendar.

\*\*You are expected to write the final exam in December when scheduled by the Registrar's Office - with possible exceptions in the case of compelling and urgent circumstances beyond your control. Take this into account when making any travel plans. Also note and observe other key dates during the term as provided in the Calendar.

**Statement on Plagiarism and Cheating:**

\* You are required to reference sources fully and properly for written assignments. You are responsible for familiarizing yourself with College Calendar information (on pages 48-49 and on-line) pertaining to cheating and plagiarism, for which there are various penalties depending on the severity of the offense. (An instructor's handout will provide assistance with referencing.)

Please note: Details of this course outline are subject to change. Any changes will be discussed in class.

# Tentative Topic Schedule

11, 13, 18, 20 September

## I. Introduction.

A. What is philosophy? What is science? What is philosophy of science? Branches of philosophy including metaphysics and epistemology (and main positions.)

B. Distinguishing between science and non-science. Creationism. Astrology. The scientific method.

25, 27 September, 2 October

## II. Logic and scientific reasoning.

A. An introduction to logic and logical fallacies. Deduction, induction and abduction.

[FIRST EXAM: Thursday 4 October]

9, 11 October

B. Problems of induction and confirmation

16, 18 October

III. **Laws of nature and explanation.** The nature of scientific theories. Explanation in the social sciences.

23, 25 October

IV. **The unity of science.** Are all sciences (natural and social) reducible to physics? Demarcation, again - what counts as a science?

30 October, 1 November

V. **Theory and observation.** Thomas Kuhn and paradigm shifts.

[SECOND EXAM: Tuesday 6 November]

8, 15 November

VII. **Realism and anti-realism** with a focus on “unobservables” or theoretical entities. Criteria of adequacy of theories.

20, 22 November

VI. **Science and objectivity.** Can science be objective? Sociology of science. Feminist perspectives.

27, 29 November

VIII. **Science and religion.** Reason vs. faith. Creationism and Darwinism.

4, 6, 11 December

IX. **Contemporary Issues** (time permitting). Sociobiology and human (mis)behaviour. The paranormal and parapsychology. Climate science. Alternative medicine.