

Please note: This is only a provisional draft of the course outline. It is intended to give you a sense of what the course will be about. Readings and important course dates may change before the semester begins.

PHIL 220 A01 - Fall 2018

Introduction to Philosophy of Science

Instructor: Eric Hochstein

CRN: 12520

Time: Tuesday/Wednesday/Friday 11:30 AM – 12:20 PM

Place: Clearihue Building C112

Office Hours (in Clearihue B330): Wednesday, 3:00-5:00 pm; and by appointment

Email: ehochstein@uvic.ca

Description: Science is considered to be our best and most effective way of learning about the world. But what exactly differentiates science from non-science, and what are its limits? In this course, we will explore fundamental philosophical questions regarding the nature of science, and how it relates to more traditional philosophical questions regarding metaphysics and epistemology. More specifically, we will explore topics like: what is the demarcation between science from non-science? Does science get closer to truth as it progresses? Can the theories of one science (e.g. psychology) be reduced to theories of another (e.g. neuroscience)?

Structure: The course comprises three lectures (50min) per week, the contents of which will be based on the course readings. The course will proceed primarily through lectures and discussions.

Readings for the class will all be uploaded onto the course website.

Evaluation: The course will be graded as follows:

- Attendance and Class Participation, worth 10% (you can miss **5** classes with no penalty. Each additional class missed will be -1% to your attendance/participation grade). **Please note:** constantly checking and using your cell phone during class can be distracting. Constant use of your cell phone in class will cost you participation grades.
- 2 in-class mid-term worth 20% and 25%
- 1 term paper worth 20% (3-6 pages double-spaced) ;
- A final examination worth 25%.

Policy on assignments, tests, and term papers: The term papers are due in class, **in hard copy**, on the announced deadline. Late papers will receive a deduction of 5% per day until handed in. Any exam missed without documentation of illness or family emergency will receive a 0.

Important to Note: It is expected that students will prepare for and attend class regularly. Students are encouraged to consult the instructor with any problems or concerns about the course **early** in the semester.

Grading System:

| Percentages | Letter Grade | Grade Point |
|-------------|--------------|-------------|
| 90 – 100 | A+ | 9 |
| 85 – 89 | A | 8 |
| 80 – 84 | A- | 7 |

An A+, A, or A- is earned by work which is technically **superior**, shows mastery of the subject matter, and in the case of an A+ offers original insight and/or goes beyond course expectations. Normally achieved by a minority of students

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| 77 – 79 | B+ | 6 |
| 73 – 76 | B | 5 |
| 70 – 72 | B- | 4 |

A B+, B, or B- is earned by work that indicates a **good** comprehension of the course material, a good command of the skills needed to work with the course material, and the student's full engagement with the course requirements and activities. A B represents a more complex understanding and/or application of the course material. Normally achieved by the largest number of students.

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| 65 – 69 | C+ | 3 |
| 60 – 64 | C | 2 |

A C+ or C is earned by work that indicates an **adequate** comprehension of the course material and the skills needed to work with the course material and that indicates the student has met the basic requirements for completing assigned work and/or participating in class activities

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| 50 – 59 | D | 1 |
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A D is earned by work that indicates **minimal** command of the course materials and/or minimal participation in class activities that is worthy of course credit toward the degree.

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| 0 – 49 | F | 0 |
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F is earned by work, which after the completion of course requirements, is **inadequate** and unworthy of course credit towards the degree.

Interpretation of these grade definitions is up to the discretion of the instructor. If you receive a grade during the course that you believe is unfair, please begin by discussing the matter with the instructor (or TA) in a respectful, open-minded manner. Rest assured that if you still believe the grade you received is unfair you can appeal the matter to the chair of the department.

For additional information regarding grades, please see pp. 51-53 of the most recent (September 2018) edition of the Uvic Undergraduate Calendar.

All evaluations of tests and assignments will be calculated according to percentage scores. Letter grades and grade point scores are listed purely for reference.

Final examinations are the property of Uvic and are not returned. They are available for viewing at the Records Office according to Uvic procedures and regulations (pp. 49-51 of the calendar).

Uvic is committed to providing a safe, supportive learning environment for all members. Further information regarding Uvic policies on human rights, equity, discrimination and harassment are located in the Uvic calendar (p. 15), but if you have any particular concerns in our course please do not hesitate to contact me.

Tentative Schedule of Readings:

Week 1 (September 5 & 7): Introduction and Basics

No Readings for This Week

Week 2 (September 11, 12 & 14): Demarcating Science from Non-Science

Readings:

- Popper, K. "Science: Conjectures and Refutations",
- Thagard, P. "Why Astrology Is a Pseudoscience",

Week 3 (September 18, 19 & 21): Scientific Explanation & The D-N Account

Readings:

- Hempel, C. & Oppenheim, P. "The Logic of Explanation"

Week 4 (September 25, 26 & 28): Scientific Explanation & The Mechanist Account

Readings:

- Okasha, "The Problem of Symmetry & The Problem of Irrelevance"
- Craver, C. (2006). "When Mechanistic Models Explain"

Week 5 (October 2, 3 & 5): Scientific Realism vs Scientific Anti-Realism (Part 1)

Midterm 1: Oct 5th

Readings:

- Okasha, "Realism & Anti-Realism"
- Hacking, I. "What is Scientific Realism?"

Week 6 (October 9, 10 & 12): Scientific Realism vs Scientific Anti-Realism (Part 2)

Readings:

- Van Fraassen, B. "Arguments Concerning Scientific Realism"
- Musgrave, A. "The Ultimate Argument for Scientific Realism"

Week 7 (October 16, 17 & 19): Reductionism vs Anti-Reductionism (Part 1)

Term Paper Assigned Oct 16

Readings:

- Oppenheim & Putnam, "The Unity of Science as a Working Hypothesis"
- Churchlands, "Intertheoretic Reduction: A Neuroscientist's Field Guide"

Week 8 (October 23, 24 & 26): Reductionism vs Anti-Reductionism (Part 2)

Readings:

- Fodor, "Special Sciences"

Week 9 (October 30, October 31 & November 2): Science and the Search for Laws

Readings:

- Cartwright, N. "Do the Laws of Physics State the Facts?"

Week 10 (November 6, 7 & 9): Science and the Search for Natural Kinds

Midterm 2: November 6th

Readings:

- Boyd, R. (1991). "Realism, Anti-Foundationalism and the Enthusiasm for Natural Kinds." *Philosophical Studies* 61: 127-148.
- Barrett, L. (2006). "Are Emotions Natural Kinds?"

Week 11 (November 13, 14 & 16):

No Additional Readings for This Week

Term Paper Due Nov 16

READING WEEK: No class Tuesday November 13

READING WEEK: No class Wednesday, November 14

Week 12 (November 20, 21 & 23): The Quine-Duhem Thesis

Readings:

- Donald Gillies (1998), "The Duhem Thesis and the Quine Thesis"

Week 13 (November 27, 28 & 30): Theory Change

Readings:

- Kuhn, T. (1977). "Objectivity, Value Judgment, and Theory Choice"

Week 14 (December 4) Spill over and Review

No Additional Readings for This Week

Note on Avoidance of Academic Offenses:

All students registered in the course are expected to know what constitutes an academic

offence, to avoid committing academic offenses, and to take responsibility for their academic actions. When the commission of an offense is established, it will be acknowledged by disciplinary penalties. If you need help in learning how to avoid academic offenses such as plagiarism, cheating, and double submission, or if you need clarification of aspects of the discipline policy, ask your course instructor for guidance. You can find the university's Policy on Academic Integrity here:

<http://web.uvic.ca/calendar2017-09/undergrad/info/regulations/academic-integrity.html>

If you are seeking editing help, please note that the university has recently adopted a strict view about seeking the help of others for editing. They say (this can be found in the link above):

An editor is an individual or service, other than the instructor or supervisory committee, who manipulates, revises, corrects or alters a student's written or non-written work.

The use of an editor, whether paid or unpaid, is prohibited unless the instructor grants explicit written authorization. The instructor should specify the extent of editing that is being authorized. Review by fellow students and tutoring that do not include editing are normally permitted.

Note for students with disabilities:

The Resource Centre for Students with a Disability (<http://www.uvic.ca/services/rcsd/>) is a fantastic resource that collaborates with all academic departments to help arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with them at the beginning of each academic term.