

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 356 A01 - Spring 2019
Philosophy of Science:
Understanding Science as a Human Practice

Instructor: Eric Hochstein

CRN: 22373

Time: Tuesday/Wednesday/Friday 12:30 PM – 1:20 PM

Place: Clearihue Building A212

Office Hours (in Clearihue B330): Tuesday, 2:30-4:30 pm; and by appointment

Email: ehochstein@uvic.ca

Description: People often talk about science in the abstract, as a single unified enterprise that operates independently of the scientists that engage in it (e.g. “Science is true whether you believe it or not”, or “science proves that smoking kills cancer”). This tendency can make it easy for people to overlook the fact that science is, at its core, a human practice. Science is a set of methodologies, practices, and tools developed by humans to understand and make sense of the world (these include: setting up experimental protocols, engaging in the peer review process, carrying out replications, applying for grants, etc). In this course, we will examine the human and social dimension of science. If science is developed by humans, for human ends, then how do physiological and social facts about us influence, limit and structure the development of science? What sorts of problems do they create, and how can we overcome them?

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.
- 1 in-class mid-term worth 20%
- 2 term papers worth 20% and 25% (3-6 pages double-spaced each) ;
- 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 proof/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

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.

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

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.

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 (Jan 8, Jan 9 & Jan 11): Introduction and Basics

No Readings for This Week

Week 2 (Jan 15, Jan 16 & Jan 18): Are Scientific Observations Theory Laden?

Readings:

- Kuhn T.S. (1976). "Scientific Revolutions as Changes of World View." In: Harding S.G. (eds) *Can Theories be Refuted?*.
- Feyerabend, (1965). "Consolations for the Specialist" In *Criticism and the growth of knowledge*"

Week 3 (Jan 22, Jan 23 & Jan 25): Science in Service of Human Understanding

First Term Paper Assigned January 25th

Readings:

- Braverman M, Clevenger J, Harmon I, Higgins A, Horne Z, Spino J, Waskan J (2012). "Intelligibility is necessary for explanation but accuracy may not be." In: *Proceedings of the thirty-fourth annual conference of the cognitive science society*.
- Potochnik, A. "The Diverse Aims of Science"

Week 4 (Jan 29, Jan 30, Feb 1): Conceptualizing and Re-conceptualizing Phenomena

Readings:

- Churchland, P. S. (1988). Reduction and the neurobiological basis of consciousness. In A. J. Marcel & E. Bisiach (Eds.), *Consciousness in contemporary science* (pp. 273-304). New York, NY, US: Clarendon Press / Oxford University Press.
- Colaço, D. (2018) “Rip it up and start again: The rejection of a characterization of a phenomenon”. *Studies in History and Philosophy of Science*.

Week 5 (Feb 5, Feb 6 & Feb 8): Science from Different Perspectives

First Term Paper Feb 8th

Readings:

- Mitchell, S. (2002). “Integrative Pluralism”. *Biology and Philosophy* 17: 55-70.
- Fehr, C., 2011. “What is in it for me? The benefits of diversity in scientific communities,” in *Feminist Epistemology and Philosophy of Science: Power in Knowledge*, ed. Heidi Grasswick, Dordrecht: Springer.

Week 6 (Feb 12, Feb 13 & Feb 15): Disagreement in Science

Mid Term 1 Feb 15

Readings:

- De Cruz, Helen & De Smedt, Johan (2013). The value of epistemic disagreement in scientific practice. The case of *Homo floresiensis*. *Studies in History and Philosophy of Science A*, 44, 169–177.
- Resnik, D. & Stewart, Jr., C. (2012). Misconduct versus Honest Error and Scientific Disagreement. *Accountability in Research* 19 (1): 56-63.

Week 7 (Feb 19, Feb 20 & Feb 22): Reading Week

No Classes

Week 8 (Feb 26, Feb 27 & Mar 1): How Cultural and Ethical Values are Intertwined with Science

Second Term Paper Assigned Feb 26th

Readings:

- Longino, H. “Beyond “Bad Science”: Skeptical Reflections on the Value-Freedom of Scientific Inquiry”

Week 9 (Mar 5, Mar 6 & Mar 8): Can Science Truly be Objective?

Readings:

- Daston, L. (1992). “Objectivity and the Escape from Perspective.”

Week 10 (Mar 6): Science as a Tool to Help Others and/or Make The World Better

Readings:

- Tekin, S. “Against Hyponarrating Grief: Incompatible Research and Treatment Interests in the DSM-5”
- Weaver, S. “The Harms of Ignoring the Social Nature of Science”

Week 11 (Mar 12, Mar 13 & Mar 15): The Reward System of Science & The Replication Crisis

Readings:

- Romero, F. (2017). "Novelty versus Replicability: Virtues and Vices in the Reward System of Science." *Philosophy of Science* 84 (5).

Week 12 (Mar 19, Mar 20, Mar 22): Possible Solutions to The Replication Crisis

Second Term Paper Due Mar 19th

Readings:

- Everett, J. & Earp, B. (2015). A tragedy of the (academic) commons: interpreting the replication crisis in psychology as a social dilemma for early-career researchers. *Frontiers in Psychology*

Week 13 (Mar 26, Mar 27 & Mar 29): Practical Worries with Experimental Protocols

- Datteri, E., & Laudisa, F. (2012). Model Testing, Prediction, and Experimental Protocols in Neuroscience: A Case Study. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 43(3), 602-610.
- Sullivan, J. (2009). The Multiplicity of Experimental Protocols: A Challenge to Reductionist and Non-Reductionist Models of the Unity of Neuroscience. *Synthese* 167 (3): 511-539.

Week 14 (Apr 2 & Apr 3): Spill over and Review

No additional readings

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.