

UGRD 10008-1

Philosophy of Science

M 10:15–11:45 & W 8:30–10:00 | B5-01-07

INSTRUCTOR:

Juliana Lima

juliana.lima@apu.edu.in

<https://julianaflima.github.io/>

My Office: Kaveri Kodagu (B2-AB), 225 | Office Hours: M 12–3; W 10:15–12

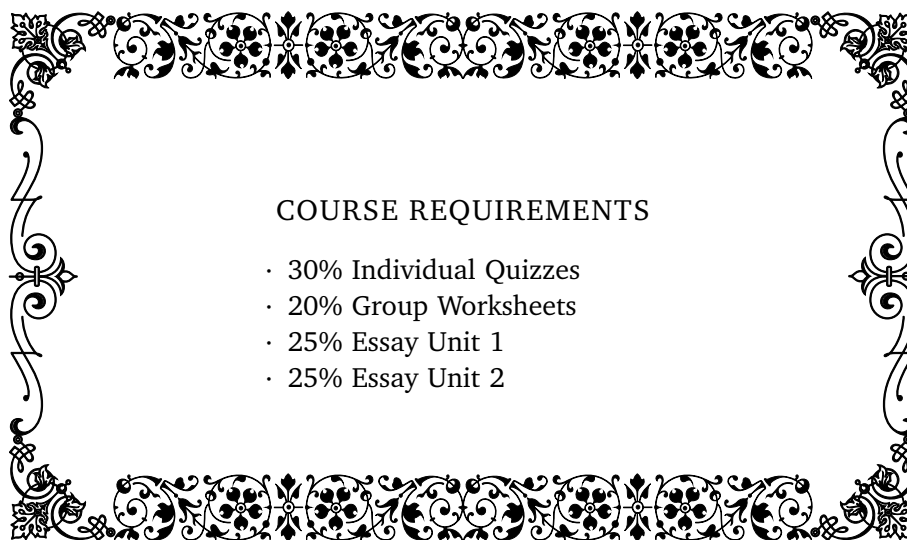
COURSE DESCRIPTION AND OBJECTIVES

In this course, students will learn different different answers to the question: what counts as evidence to a scientific theory? This will be discussed both in the realm of biology, physics, chemistry, and other so-called “hard sciences”, as well as in social sciences, specifically, economics.

LEARNING OBJECTIVES

By the end of the course, students should:

- Explain and assess scientific and social scientific texts;
- Deconstruct the presuppositions of reasoning in science and social science;
- Critique the application of natural scientific techniques to social science;
- Participate in constructive discussion across disciplinary boundaries;
- Communicate with a high degree of economy and precision;
- Generate their own views about the role of science in society.



Individual Quizzes (30%)

These are short quizzes to guide students on their progress in the course and inform the instructor if any pedagogical changes are required. They will be weekly and cumulative to check how well students are retaining the content. Each quiz is worth 4 points. Only the highest 8 scores will count. Students can get up to 30 points. They are due by **Monday, 10:10am, before class**, unless otherwise announced in lecture or on Moodle.

No extensions will be granted, not even for medical emergencies. Students can miss a couple of quizzes and still get full points, which accounts for cases of medical emergencies.

Group Worksheets (20%)

Questions from the worksheet with answers of up to 200 words. All worksheets assigned will be graded. Each worksheet will be worth 3 points. Only the highest 7 scores will count. Students can get up to 20 points.

Only students who are in lecture the day the worksheet is assigned will be eligible for this activity. No exceptions.

Essay Unit 1 & 2 (25%/each)

At the end of the first unit, students will write an essay of **no more than 3000 words**. The essay can be on any topic from the unit in questions. Students are required to discuss paper topics with the instructor no less than 1 week before the paper is due.

Deadlines:

- Unit 1: last day to discuss paper topics **Wednesday, Sept 20th, during pre-scheduled office hours**; submission deadline: **Wednesday, Sept 27th, 11:59pm**;

- Unit 2: last day to discuss paper topics **Monday, Nov 20th, during pre-scheduled office hours**; submission deadline: **Monday, Nov 27th, 11:59pm**.

No extensions will be granted, except for documented medical emergencies. Emails asking for extensions will be ignored, unless the request has a documented medical emergency

University Wide Policies

You need to **attend at least 80% of the classes** and **submit 70% of the assignments** to pass the course.

Turning up late or leaving class in before it ends is absence from class.

NOTE: Things change – the Fates are fickle. Information found on this syllabus is subject to revision as we progress through the semester: Readings and content may be added (or cut) depending on our rate of progress, and it may be necessary to amend the due date of the assignments. Revisions will be announced in lecture and posted online. It is each student's responsibility to keep informed of any changes.



If you are facing a major medical or another major difficulty that is keeping you from doing well in the class, contact me as soon as you can. I am happy to work with you to find the best course of action and, if possible, to help you complete the course successfully. But I can't help if you don't let me know about your circumstances as soon as they arise.



Don't wait until after the last week of classes to let me know about your circumstances. At that point there is nothing I can do to accommodate you.



MATERIALS

- All course materials, information, assignments, etc. will be available on Moodle.
- All communications will be made through your school email address and Moodle. Please make sure you have turned on notification alert on Account Notification Settings to get an email when you receive messages.

GRADING

The standard university grading scale will apply: 0-39% U, 40-44% E, 45-54% D, 55-54% C, 65-74% B, 75-84% A-, 85-94% A, 95-100% O

ACADEMIC INTEGRITY

You are expected to uphold the highest standards of academic integrity. Your work must be your own. Submitting work which you have not composed yourself, or using another person's ideas without due credit, or failing to mark another person's words with appropriate quotation marks all constitute plagiarism. The instructor reserves the right to assess penalties for violations of academic integrity, which may include giving a failing grade for an assignment, for the entire course, or referral to a University disciplinary committee.

Undisclosed use of writing and editing aids is considered a violation of academic integrity, and will be reported to the academic honor council. If you use ChatGPT or any similar editing/writing softwares, you are required to disclose in the assignment (such as in a footnote) which tools you used and how you used them. Your grade may be negatively affected depending on how you use these aids. If you have any questions about how to use these tools responsibly, talk to your instructor.

STRUCTURE OF THE COURSE

The course will be a mix of lectures, seminars, and group work, depending on the topic and the most appropriate pedagogical strategy.

TENTATIVE SCHEDULE OF ACTIVITIES

Unit 1 – Epistemology of Science

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| <i>Week 1</i> | Aug 14 | Overview of the course |
| | Aug 16 | <i>Reading:</i> Okasha,S. - <i>Philosophy of Science - A Very Short Introduction</i> , Chap 1, pp 1–17. Godfrey-Smith,P. <i>Theory and Reality</i> , Chap 1, pp. 1–18 – skip sections 1.3 & 1.4. |

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| <i>Week 2</i> | Aug 21–23 | Confirmation and the problem of Induction <i>Readings:</i> Godfrey-Smith,P. <i>Theory and Reality</i> , Ch. 3, pp. 39–56. Okasha,S. <i>Philosophy of Science - A Very Short Introduction</i> , Chap 2, pp 18–28. |
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Week 3 Aug 28–30 Confirmation and hypothetico-deductivism
 Readings: Hempel, C.G. *Philosophy of Natural Science*, Chap 2 & 3, pp. 1–32.

Week 4 Sept 4–6 Falsificationism
 Readings: Godfrey-Smith, P. *Theory and Reality*, Ch. 4. pp. 57–71.

Week 5 Sept 11–13 Varieties of Underdetermination
 Readings: Ladyman, J. *Understanding Philosophy of Science*, Ch. 6.

Week 6 Sept 18–20 Bayesianism
 Tutorial: Finding a research question
 Video: How to find a paper/research topic (<https://www.youtube.com/watch?v=TkeWSuPxhs8&feature=youtu.be>)
 Sept 20 Last day to schedule office hours to discuss your essay unit 1.

Week 7 Sept 25 Inference to the best explanation
 Readings: Lipton, P. *Inference to the best explanation*, Chs. 2 & 4.
 Okasha, S. *Philosophy of Science - A Very Short Introduction*, Chap 2, pp 29–33.
 Sept 27 Paper Unit 1 is due by 11:59pm.



Unit 2 – Philosophy of Economics

Week 8 Oct 9–11 J.S. Mill and Ricardo on the corn laws
 Readings: Mill, J.S. *On the definition and method of political economy. The philosophy of economics: An anthology*, Ch. 2, 52–68.
 Ricardo, D. “An Essay on the Influence of a Low Price of Corn on the Profits of Stock” (Vol. 4, pp. 1–41). J. Murray.

- Week 9* Oct 16–18 The Explanation Paradox
Readings: Reiss, J. “The explanation paradox”, *Journal of Economic Methodology* 19.1 (2012): 43-62.
 Okasha, S. *Philosophy of Science - A Very Short Introduction*, Chap 3, pp 48–52.
Optional Reading: Godfrey-Smith, P. *Theory and Reality*, Ch. 13, pp. 190–201.
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- Week 10* Oct 23–25 The F twist and behavioural economics
Readings: Friedman, M. “The methodology of positive economics”.
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- Week 11* Oct 30
 Nov 1 Randomised controlled trials
Readings: Deaton, A. “Instruments, randomization, and learning about development”, *Journal of economic literature*, 48(2), 424-455.
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- Week 12* Nov 6–8 Experimental Economics
Readings: Smith, Vernon L. “Economics in the Laboratory.” *The Journal of Economic Perspectives* 8, no. 1 (1994): 113–31.
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- Week 13* Nov 13–15 Experimental Economics (cont’d)
Readings: Mill, J.S. *System of Logic*, Book III, Chap 8.
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- Week 14* Nov 20–22 Human Behaviour
Readings: Kahneman, D. *Thinking Fast and Slow*, Chap 8, pp. 77–83.
 Last day to schedule office hours to discuss your essay unit 2.
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- Week 15* Nov 27 Assessment week
 Paper 2 is due by 11:59pm

