

Phenomenological and Continental Philosophy of Science

Course B-KUL-W0Q07A
KU Leuven, Summer Semester 2026
Mondays, 13:00-16:00
Aula Emma Vorlat (AGOR.00.E20)

Lecturer: Dr. Gregor E. Bös
gregor.boes@kuleuven.be
Office: 02.32, HIW main building
Office hours on Thursdays, 15:00-16:00

1. Course Description

We survey major 20th century phenomenological and continental philosophers' thought on empirical science, leading up to current debates about scientific representation and realism. We start with classical texts of phenomenology, their further development, and from there turn to historical epistemology and postphenomenology. Authors of different methodological commitments are connected by reading them against a central theme: How do scientific theories and models represent and idealize what they describe? This has important implications for broader philosophical questions, such as: what is the relation between science and pre-scientific or extra-scientific domains of life? What social changes are furthered by the proliferation of scientific theories, mathematization, and digitization? We also discuss the methodological relation between philosophy and empirical science and draw occasional parallels and contrasts to 20th century analytic philosophy and philosophy of science. Basic knowledge of Husserlian phenomenology is presupposed. Knowledge of general philosophy of science is welcome but not required. Post-secondary scientific education and knowledge of the philosophy of special sciences are not required.

2. Mode of Instruction

We meet Mondays, 13:00-16:00 (with the exception of Friday, 3rd April, 9:00-12:00). The course format is that of a lecture, followed by seminar discussion.

3. Technology in the Classroom

You have a right to use the tools that work for you; your peers have a right to not be distracted. I recommend printing the assigned readings and to annotate them offline to practice focused reading. If you need to use an illuminated screen during class, please sit toward the back to minimize distracting others.

4. Assessment

Your evaluation comprises weekly submissions, an essay assignment, and an oral examination.

4.1 Weekly Submissions (20%)

Throughout the course, you are expected to submit a 50–100-word reflection for every assigned reading. Here you show that you engaged with the reading and formulate questions or challenges. A pass receives 2 points, an insufficient attempt or late submission receives 1 point, non-submission a 0. The maximum number of points is capped at 20.

Weekly submissions are sent to gregor.boes@kuleuven.be. The email title **must** be formatted as “Reading Reflection Week X Surname, Given Name”, for example “Reading Reflection Week 2 Doe, Jane”. The deadline is on Saturdays before the next lecture, at 18:00.

4.2 Essay Assignment (50%)

The essay assignment is a piece of writing of 2,000—2,500 words, **including notes** but excluding bibliography. This wordcount needs to be stated on the title page; exceeding it affects the grade. All submissions are graded **anonymously**, please ensure that your name is not stated on the title page or can be derived from the essay content.

The essay should be a short, self-contained article that explores topics from one or two sessions, rather than the entire course. Your goals should be to write an essay that addresses a well-specified and relevant question, has a logical structure, is clearly written, and both charitable and critical in its engagement with primary and secondary literature.

Your essay is submitted through Blackboard Ultra, along with **digital artifacts**. Digital artifacts are snapshots of your progress, such as earlier drafts and research notes, they can also be images of handwritten notes. These artifacts are not being graded but document your authorship.

The deadline for submitting the research paper is **29th May** for the spring examination period, or **3rd August 2026** for the summer examination period. Note that this is earlier than the general essay deadline for the semester. Late papers can only be accepted at the request of the Ombudsperson.

Digital artifacts are due at **10 days** and **4 days** before the essay deadline. If you plan to submit your essay much earlier than the deadline, please do not forget to record snapshots at appropriate drafting stages.

The educational aim of this course is the development of philosophical skills, not just the production of a piece of writing. To assess these skills, the following stipulations hold in addition to any departmental rules about the use of generative AI:

Any use of Large Language Models, whether at the stage of ideation, writing, or editing, must be disclosed in the title page of your essay. This includes feedback on your paper from a large language model and editing for academic style.

In an appendix to the article, you must list the used prompts, except for trivial variation, and the language model.

4.3 Oral Examination (30%)

The 15-minute oral examination consists of three questions. One will be about your essay assignment, two about other parts of the course. You will be examined on the assigned readings and our discussion of them. It is often helpful to think for a moment before answering. Good responses show specific understanding of the material covered in the course and its interrelation. Good responses are relevant to the question asked, concise, structured, and use precise language.

For the Spring examination period, Oral examinations are scheduled for **15th, 17th and 19th June**, all in HIW1.01.20. Oral examinations will also be scheduled in the examination period of 13th August through 5th September 2026 for summer.

4.4 Grading Rubric

Reading reflections are graded as good (2 points) or acceptable (1 point), where late submissions will only achieve an 'acceptable' score.

Oral responses and the essay will be graded according to the general grading rubric of KU Leuven:

18-20	A+	Excellent	high distinction, work of excellent quality
16-17	A	Outstanding	work of very good quality and well above average
15	A-	Very Good	distinction, work of good quality
14	B+	Good	generally competent work of quality
13	B	Satisfactory	fair but with some shortcomings
12	C+	Sufficient	fair but with shortcomings
11	C	Barely Sufficient	performance meets the minimal criteria
10	D	Barely Sufficient	performance just meets the minimal criteria
8-9	F	Insufficient	some more work is required to obtain a passing grade
6-7	F	Very Insufficient	more work is required to obtain a passing grade
0-5	F	Totally Insufficient	considerable further work is required to obtain a passing grade

For the essay, notice that it is an examination document, not a literary piece of writing. The grade is composed of the following factors:

Factor	Weight	Description
Structure	20%	Different parts of the essay are clearly related and no parts are redundant. The introduction sets up the topic efficiently. The flow of argumentation is presented transparently. It is clear throughout what the essay aims to do at the current point.
Clarity	30%	The essay is self-contained. Thoughts are expressed precisely and not obscured by language. Relevant distinctions are drawn, specialized terms are introduced and ambiguities dissolved and anticipated.
Scholarship	30%	Sources are referenced correctly and consistently (in whichever bibliographic style you prefer, as long as you add a separate list of references). Reconstruction of authors is efficient, fair, and critical. Where necessary, limitations and presuppositions of the presented argument are spelled out.
Novelty	20%	The essay does not need to make a publishable research contribution, but it clearly exceeds a literature review and demonstrates the student's own thought and engagement with the material discussed.

Points may be deducted for exceeding the permitted wordcount.

5. Weekly schedule

There are two kinds of readings: **assigned** (in bold) and recommended. Everyone is expected to study assigned readings **before** coming to class. Recommended readings are optional. The essay you submit will usually relate to a particular week, for which you are expected to also know the recommended readings. That does not mean that the recommended readings *have* to be cited, but if they are relevant to your topic, I expect you to discuss them. As advanced students, you can of course research further literature, but you must make sure that your essay retains a clear connection to the course.

Wk	Date	Topic	Readings
1	9 Feb	Introduction	N.A.
2	16 Feb	Phenomenology as a Rigorous Science	Husserl: <i>Prolegomena</i>, §§4-6, §71 Husserl: <i>Philosophy as a Rigorous Science</i>, pp. 4-17 (Hua) / 71-92 (Lauer) Richardson 1997: <i>Toward a History of Scientific Philosophy</i> Carman 2008: <i>Phenomenology as Rigorous Science</i> Ierna 2014: <i>Making the Humanities Scientific. Brentano's Project of Philosophy as Science</i> Huemer 2018: <i>Brentano's conception of philosophy as a rigorous science</i>
3	23 Feb	Husserl's <i>Crisis</i>	§§1,2 & 9 of Husserl: <i>The Crisis of European Sciences</i> Sokolowski 1979: <i>Exact Sciences and the World in which we Live</i> Tieszen 2005: <i>Science as A Triumph of the Human Spirit and Science in Crisis: Husserl and the Fortunes of Reason</i> in Gutting 2005 Moran 2012: <i>Husserl's Crisis of the European Sciences</i>, chs. 2-3
4	2 Mar	The Mathematization of Nature	Husserl: <i>The Origin of Geometry</i> Kockelmans 1970: <i>The Mathematization of Nature in Husserl's Last Work</i>, Krisis Drummond 1984: <i>The Perceptual Roots of Geometric Idealizations</i> Hacking 2010: <i>Husserl on the Origin of Geometry</i> Islami & Wiltche 2020: <i>A match made on earth: On the Applicability of Mathematics in Physics</i>
5	9 Mar	Heidegger	Heidegger: <i>The Age of the World-Picture</i> Kisiel 1977: <i>Heidegger and the New Images of Science</i>

			Sacco 2021: <i>The phenomenality of the phenomenon: Heidegger on Physics</i> Glazebrook 2022: <i>Heidegger's Philosophy of Science</i>
6	16 Mar	Marcuse	Marcuse 1963: On Science and Phenomenology Marcuse 1963: <i>One-Dimensional Man</i>, ch. 6: From Negative to Positive Thinking Angus 2017: <i>Galilean Science and the Technological Lifeworld</i> Feenberg 2023: <i>Marcuse's Critique of Technology Today</i>
		--- Mid-Term Evaluation ---	
7	23 Mar	Koyré	Koyré 1943: <i>Galileo and Plato</i> Schuhmann 1987: <i>Koyré et les phénoménologues allemands</i> Parker 2018: <i>The History between Koyré and Husserl</i>
8	30 Mar	Postphenomenology	Ihde 2016: <i>Husserl's Missing Technologies</i>, ch. 2 Wiltsche 2017: <i>Mechanics Lost: Husserl's Galileo and Ihde's Telescope</i> Ihde 2009: <i>Postphenomenology and Technoscience: The Peking University Lectures</i>
		--- Easter Break ---	
9	20 Apr	French Historical Epistemology	Bachelard, Suzanne: <i>Phenomenology and Mathematical Physics</i> in Kockelmans/Kisiel 1970 Bachelard, Gaston: Extract from <i>Essai sur la Connaissance Approchée</i>, in Gutting 2005 Bachelard, Gaston: <i>The New Scientific Spirit</i> Bachelard, Gaston: <i>Epistemology and the History of the Sciences</i> in Kockelmans / Kisiel 1970 Vagelli 2024: <i>What (Good) is French Historical Epistemology?</i>

Van Gemert 2025: *Suzanne Bachelard's Historical Phenomenology*

- | | | | |
|----|--------|--|--|
| 10 | 27 Apr | German Historical Epistemology | <p>Rheinberger 2015: <i>Preparations, models, and simulations</i>
 Rheinberger 2010: <i>On Historicizing Epistemology: An Essay</i>. Chs. 5-6
 Rheinberger 1995: <i>From Microsomes to Ribosomes: "Strategies" of "Representation"</i>
 Renn 2020: <i>The Evolution of Knowledge: Rethinking Science for the Anthropocene</i></p> |
| 11 | 4 May | Latour and Science and Technology Studies | <p>Latour 1986: <i>Visualization and Cognition: Thinking with eyes and hands</i>
 Latour 1993: <i>We have never been Modern</i>, ch. 2
 Brown 1999: <i>A Critique of Social Constructivism</i></p> |
| 12 | 11 May | Correlationism and New (Scientific) Realism | <p>Meillassoux 2008: <i>Ancestrality</i>, ch.1 in <i>After Finitude</i>
 Brassier 2017: <i>Concepts and Objects</i>
 Chapters 6-8 in Voosholz 2025: <i>Towards a New Scientific Realism</i>
 Zahavi 2016: <i>The end of What?</i></p> |
| | 19 May | Spring Examination: 1 st Artifact Submission | |
| 13 | 25 May | Writing Period (No Session)
Spring Examination: 2 nd Artifact Submission | |
| | 29 May | Spring Examination: Essay Submission until 18:00 | |
| | 4 Jun | Spring Oral Examination Period Begins | |

- 27 Jun **Spring Oral Examination Period Ends**
- 24 Jul Autumn Examination: 1st Artifact Submission
- 30 Jul Autumn Examination: 2nd Artifact Submission
- 3 Aug **Autumn Examination: Essay Submission until 18:00**

There are two kinds of readings: **assigned** (in bold) and recommended. Everyone is expected to study assigned readings **before** coming to class. Recommended readings are optional.

Normally, the paper you submit will discuss a topic of a particular week. In that case you are expected to know the recommended readings as well. They do not *have* to be cited, but if they are relevant to your topic, I expect you to discuss them. As advanced students, you can of course research further literature, but make sure that your essay retains a clear connection to topic of the course.

6. Workload

When preparing your weekly schedule, consider the additional time you will need to complete assignments and prepare readings for this class. Assigned readings often need more than one pass, and you may want to consult the recommended readings to deepen your understanding.

6 ECTS correspond to an expected workload of 150-180 hours, including

12 x 3h attendance

11 x 4h (est.) review and preparatory reading

11x 1h (est.) writing for continuous assessments

50h (est.) research for written assignment

10h (est.) preparation and oral examination

for a total of 151h.

7. Midterm Feedback

Towards the middle of the course, you will receive a webform to evaluate the course up to this point. Where possible, suggestions are taken into account for the rest of the course.

8. Bibliography

The English versions of the readings are made available through Toledo. Where applicable, feel free to consult them in the original language.

Angus, I. (2017) 'Galilean Science and the Technological Lifeworld: The Role of Husserl's Crisis in Herbert Marcuse's Thesis of One-Dimensionality', *Symposium*, 21(2), pp. 133–159. Available at: <https://doi.org/10.5840/symposium201721224>.

Bachelard, G. (1984) *The new scientific spirit*. Translated by A. Goldhammer. Boston, Mass: Beacon Press.

Bachelard, S. (1970) 'Phenomenology and Mathematical Physics', in J.J. Kockelmans and T. Kisiel (eds) *Phenomenology and the natural sciences: Essays and translations*. Northwestern University Press, pp. 413–425.

Brassier, R. (2011) 'Concepts and Objects', in L.R. Bryant, N. Srnicek, and G. Harman (eds) *The Speculative Turn: Continental Materialism and Realism*. Re.Press.

Brown, J.R. (1999) 'A Critique of Social Constructivism', in R. Klee (ed.) *Scientific inquiry: readings in the philosophy of science*. New York: Oxford university press, pp. 260–264.

Carman, T. (2007) 'Phenomenology as Rigorous Science', in M. Rosen and B. Leiter (eds) *The Oxford Handbook of Continental Philosophy*. Oxford University Press. Available at: <https://doi.org/10.1093/oxfordhb/9780199234097.003.0002>.

Feenberg, A. (2023) 'Marcuse's critique of technology today', *Philosophy & Social Criticism*, 49(6), pp. 672–685. Available at: <https://doi.org/10.1177/01914537231164657>.

van Gemert, T. (2025) 'Suzanne Bachelard's Historical Phenomenology: Recursivity in the History of the Sciences', *HOPOS: The Journal of the International Society for the History of Philosophy of Science* [Preprint]. Available at: <https://doi.org/10.1086/735493>.

Glazebrook, T. (2022) *Heidegger's Philosophy of Science*. Fordham University Press. Available at: <https://doi.org/10.1515/9780823295838>.

Gutting, G. (ed.) (2005) *Continental philosophy of science*. Malden, MA: Blackwell Pub.

Hacking, I. (2010) 'Husserl on the Origins of Geometry', in D.J. Hyder and H.-J. Rheinberger (eds) *Science and the Life-World: Essays on Husserl's Crisis of European Sciences*. Palo Alto: Stanford University Press, pp. 64–82. Available at: <http://public.eblib.com/choice/publicfullrecord.aspx?p=515308>.

- Heidegger, M. (1977) *The question concerning technology, and other essays*. First edition. Translated by W. Lovitt. New York: Harper & Row.
- Huemer, W. (2018) 'Brentano's Conception of Philosophy as Rigorous Science', *Brentano Studien*, 16(1), pp. 53–72.
- Husserl, E. (1965) *Phenomenology and the crisis of philosophy: philosophy as a rigorous science, and philosophy and the crisis of European man*. Translated by Q. Lauer. New York : Harper & Row. Available at: <http://archive.org/details/phenomenologycri0000edmu>.
- Husserl, E. (1970) *The Crisis of European Sciences and Transcendental Phenomenology: an Introduction to Phenomenological Philosophy*. Translated by D. Carr. Evanston, Illinois: Northwestern Univ. Press.
- Husserl, E. (2001) *Logical investigations*. Edited by D. Moran. Translated by J.N. Findlay. London: Routledge (International library of philosophy).
- Ierna, C. (2014) 'Making the Humanities Scientific: Brentano's Project of Philosophy as Science', in *The Making of the Humanities, Volume III*. Routledge.
- Ihde, D. (2009) *Postphenomenology and Technoscience: The Peking University Lectures*. Albany: State University of New York Press.
- Islami, A. and Wiltsche, H.A. (2020) 'A Match Made on Earth: On the Applicability of Mathematics in Physics', in H.A. Wiltsche and P. Berghofer (eds) *Phenomenological Approaches to Physics*. Cham: Springer (Synthese Library), pp. 157–177. Available at: https://doi.org/10.1007/978-3-030-46973-3_8.
- Käufer, S. (2001) 'Heidegger's Philosophy of Science', *The Philosophical Review*, 110(4), pp. 626–629. Available at: <https://doi.org/10.1215/00318108-110-4-626>.
- Kisiel, T. (1977) 'Heidegger and the New Images of Science', *Research in Phenomenology*, 7(1), pp. 162–181. Available at: <https://doi.org/10.1163/156916477X00112>.
- Kockelmans, J.J. (1970) 'The Mathematization of Nature in Husserl's Last Work, *Krisis*', in Kockelmans, J. J. and Kisiel, T., *Phenomenology and the natural sciences: Essays and translations*. Northwestern University Press.
- Kockelmans, J.J. and Kisiel, T. (1970) *Phenomenology and the natural sciences: Essays and translations*. Northwestern University Press.
- Koyré, A. (1943) 'Galileo and Plato', *Journal of the History of Ideas*, 4(4), pp. 400–428. Available at: <https://doi.org/10.2307/2707166>.
- Latour, B. (1986) 'Visualization and cognition: Thinking with eyes and hands', *Knowledge and society: Studies in the sociology of culture past and present*, 6(1), pp. 1–40.

- Latour, B. (1993) *We have never been modern*. Cambridge, Mass: Harvard University Press.
- Marcuse, H. (1964) *One-dimensional man: studies in the ideology of advanced industrial society*. London: Routledge & Kegan Paul.
- Meillassoux, Q. (2008) *After Finitude: An Essay on the Necessity of Contingency*. Translated by R. Brassier. London: Continuum.
- Moran, D. (2012) *Husserl's crisis of the european sciences and transcendental phenomenology: an introduction*. Cambridge: Cambridge University Press.
- Parker, R.K.B. (2018) 'The History Between Koyré and Husserl', in R. Pisano, J. Agassi, and D. Drozdova (eds) *Hypotheses and Perspectives in the History and Philosophy of Science: Homage to Alexandre Koyré 1892-1964*. Cham: Springer International Publishing, pp. 243–275. Available at: https://doi.org/10.1007/978-3-319-61712-1_14.
- Rheinberger, H.-J. (2010) *On historicizing epistemology: an essay*. Translated by D. Fernbach. Stanford: university press (Cultural memory in the present).
- Rheinberger, H.-J. (2015) 'Preparations, models, and simulations', *History and Philosophy of the Life Sciences*, 36(3), pp. 321–334. Available at: <https://doi.org/10.1007/s40656-014-0049-3>.
- Rheinberger, H.-J. (1995) 'From Microsomes to Ribosomes: "Strategies" of "Representation"', *Journal of the History of Biology*, 28(1), pp. 49–89.
- Sacco, D. (2021) 'The phenomenality of the phenomenon: Heidegger on physics', *Continental Philosophy Review*, 54(4), pp. 503–519. Available at: <https://doi.org/10.1007/s11007-020-09524-7>.
- Schuhmann, K. (1987) 'Koyré et les phénoménologues allemands', *History and Technology, an International Journal*. Available at: <https://doi.org/10.1080/07341518708581695>.
- Sokolowski, R. (1979) 'Exact Science and the World in which we live', in E. Ströker (ed.) *Lebenswelt und Wissenschaft in der Philosophie Edmund Husserls*. Frankfurt am Main: Klostermann.
- Vagelli, M. (2024) 'What (Good) Is French Historical Epistemology?', in M. Vagelli (ed.) *Reconsidering Historical Epistemology: French and Anglophone Styles in History and Philosophy of Science*. Cham: Springer International Publishing, pp. 59–79. Available at: https://doi.org/10.1007/978-3-031-61555-9_4.
- Wiltsche, H.A. (2017) 'Mechanics Lost: Husserl's Galileo and Ihde's Telescope', *Husserl Studies*, 33(2), pp. 149–173. Available at: <https://doi.org/10.1007/s10743-016-9204-x>.
- Zahavi, D. (2016) 'The end of what? Phenomenology vs. speculative realism', *International Journal of Philosophical Studies*, 24(3), pp. 289–309. Available at: <https://doi.org/10.1080/09672559.2016.1175101>.