

Logic

Code: 100314
ECTS Credits: 6

Degree	Type	Year	Semester
2500246 Philosophy	OB	2	1

Contact

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Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Teachers

Maria Pilar Dellunde Clave

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Prerequisites

None.

Objectives and Contextualisation

The main goal of this subject is, first of all, to provide an introduction to the fundamental logical concepts: logical consequence, satisfiability, consistency, and logical equivalence. Second, it aims to provide students with the basic techniques for the logical analysis of deductive reasoning, with special attention to philosophical reasoning. However, the subject can also be taken by people from other degrees. The nature of the subject is fundamentally practical, but it will also reflect on the main problems of Philosophy of Logic. Throughout the course, we will use different tools, such as deductive games (practices) that aim to enhance creativity in philosophical argumentation.

As a final objective, the subject will emphasize the rigor and structure of the philosophical essay, an indispensable element that every philosophy student must master.

Competences

- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.

- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Using the symbology and procedures of the formal sciences in the analysis and building of arguments.

Learning Outcomes

1. Ability to maintain an appropriate conversation.
2. Autonomously searching, selecting and processing information both from structured sources (databases, bibliographies, specialized magazines) and from across the network.
3. Correctly, accurately and clearly communicating the acquired philosophical knowledge in oral and written form.
4. Effectively communicating and applying the argumentative and textual processes to formal and scientific texts.
5. Explaining the specific notions of the History of Philosophy.
6. Formulating arguments for and against an issue, using proper vocabulary, conceptual precision and argumentative coherence.
7. Producing an individual work that specifies the work plan and timing of activities.
8. Recognising and implementing the following teamwork skills: commitment to teamwork, habit of cooperation, ability to participate in the problem solving processes.
9. Regularising arguments of any source and calculating its logical correctness.
10. Solving problems autonomously.

Content

1. Introduction to formal logic.
2. Propositional logic: First steps towards symbolization. Connectives. Statements.
3. Semantics of propositional logic. Assignments of truth values. Truth tables. Tautologies, contradictions, and contingent formulas.
4. Satisfiability and logical consequence. Logical equivalence.
5. Natural deduction for propositional logic.
6. Aristotle and classical syllogisms.
7. Syntax of first-order logic.
8. Semantics of first-order logic. Structures. Truth in a structure.

Methodology

Combination of theoretical and practical lectures.

Deductive games.

Joint resolution of exercises.

Self-learning activities.

Introduction of different levels of difficulty in the practical lessons.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Deductive games workshop	20	0.8	2, 3, 4, 6, 1, 8, 10
Solve problems in classroom	29	1.16	9, 6
Type: Supervised			
Deductive games workshop work	26	1.04	2, 3, 4, 6, 1, 8, 10
Type: Autonomous			
Solve problems	30	1.2	9, 10
Study of concepts	25	1	9, 6, 10

Assessment

There are two assessment modalities, continuous assessment and single assessment.

Continuous assessment. There will be three types of evaluation activities: a synthesis test, a group work related to a deductive games workshop held during practical classes, and continuous evaluation of weekly assignments.

The synthesis test will account for 50% of the grade; the group work for 20%, and the continuous evaluation of weekly assignments for 30%. The synthesis test will be held on December 18, 2023, and the deadline for the group work submission will be January 8, 2024. In order to be evaluated under the continuous assessment modality, a minimum of 8 assignments must be submitted, and the synthesis test must be taken. Please note that if you choose the continuous assessment modality and fail to submit the required assignments, you will not be evaluated for the subject. The assignments are not recoverable and must be completed and submitted on the same day as the class.

In the event that tests or exams cannot be taken onsite, they will be adapted to an online format made available through the UAB's virtual tools (original weighting will be maintained). Homework, activities and class participation will be carried out through forums, wikis and/or discussion on Teams, etc. Lecturers will ensure that students are able to access these virtual tools, or will offer them feasible alternatives.

To be eligible for the recovery assessment, a minimum grade of 3.5 must be obtained in the sum of the 3 parts, and attendance to 2/3 of the evaluation tests is required (taking the synthesis test is therefore essential to be eligible for recovery).

Single assessment. To opt for the single assessment, it will be necessary to fill out an official application, indicating between September 18, 2023, and October 6, 2023. After this date, the single assessment modality will no longer be available. The content to be examined will be chapters 1-30 of the book (For all x. See bibliography). This book includes self-learning material that can be worked on throughout the course with the help of tutorials provided by the course instructors. The single assessment will consist of a final exam (70%) and practical assignments that must be completed and orally defended (30%), meaning that the instructor will ask questions about their content. To be eligible for recovery, both assessment components must be completed.

The instructors will inform the students (via Moodle) of the procedure and date for reviewing the grades of all evaluation activities.

In case a student engages in any irregularities that may significantly affect the grade of an assessment activity, that assessment activity will be graded with 0, regardless of any disciplinary proceedings that may follow. If multiple irregularities occur in the assessment activities of the same subject, the final grade for that subject will be 0.

The student will receive a grade of "Not Evaluable" if they have not submitted more than 1/3 of the evaluation activities.

Note: 15 minutes of a class, within the calendar established by the institution/program, will be reserved for students to complete evaluation surveys regarding the faculty's performance and the evaluation of the subject/module.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Classroom practices	30%	15	0.6	3, 5, 4, 9, 1, 10
Deductive games workshop work	20%	3	0.12	2, 7, 4, 6, 1, 8, 10
Synthesis Test	50%	2	0.08	3, 5, 9, 6, 10

Bibliography

Mandatory: P. D. Magnus, Forallx, University at Albany, State University of New York, 2021.
<https://forallx.openlogicproject.org>

Optional:

1. C. Badesa, I. Jané, R. Jansana, *Elementos de lógica formal*, Ariel, 2007.
2. J. Barwise and J. Etchemendy, *The Language of first-order logic*, 3era ed., Center for the Study of Language and Information, cop. 1992.
3. Stanford Encyclopedia of Philosophy: <http://plato.stanford.edu/>
4. Gateway to Logic. <http://logik.phl.univie.ac.at/~chris/gateway/formular-uk.html>
5. The Logic Café, <http://thelogiccafe.net/PLI/>

Extension:

Copi, I. M; Cohen, C; Rodych, V. *Introduction to logic*. Routledge, 2018.

Doxiadis, A. & C. H. Papadimitriou. *Logicomix: una búsqueda épica de la verdad*. Madrid: Sinsentido, 2011. Print. (novel:la gráfica)

Ewald, W. "The Emergence of First-Order Logic", *The Stanford Encyclopedia of Philosophy* (Spring 2019 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2019/entries/logic-firstorder-emergence/>.

Lavin, A. *Thinking well. A logic and critical thinking textbook*. Creative commons.

Shapiro, S. & T. Kouri Kissel, "Classical Logic", *The Stanford Encyclopedia of Philosophy* (Winter 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/win2022/entries/logic-classical/>.

Sider, T. Logic for philosophy. Oxford University Press, USA. 2010

Thomason, R. "Logic and Artificial Intelligence", *The Stanford Encyclopedia of Philosophy* (Summer 2020 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/sum2020/entries/logic-ai/>>.

Software

No specific software is needed