

**COURSE DATA****Data Subject**

Code	33270
Name	Logic
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1004 - Degree in Philosophy	Faculty of Philosophy and Educational Sciences	2	First term
1012 - Degree in Philosophy	Faculty of Philosophy and Educational Sciences	2	First term

Subject-matter

Degree	Subject-matter	Character
1004 - Degree in Philosophy	16 - Logic and theory of argumentation	Obligatory
1012 - Degree in Philosophy	15 - Logic and theory of argumentation	Obligatory

Coordination

Name	Department
CLIMENT VIDAL, JUAN BLAS	359 - Philosophy
VALOR ABAD, JORDI	359 - Philosophy

SUMMARY

This course, taught in the second year of the Philosophy degree, offers an introduction to set theory, propositional logic and first-order logic with identity. The study of these disciplines allows us to understand the meaning of linguistic expressions, such as veritative functions and quantifiers, which are fundamental for the articulation of reasoning and for our understanding of the notions of valid argument, logical consequence or deduction. The use of formal languages and basic tools of set theory will help us to provide precise definitions of these notions.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

There are no specified enrollment restrictions with other subjects of the curriculum

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1004 - Degree in Philosophy

- Que los estudiantes hayan demostrado poseer y comprender conocimientos en un área de estudio que parte de la base de la educación secundaria general, y se suele encontrar a un nivel que, si bien se apoya en libros de texto avanzados, incluye también algunos aspectos que implican conocimientos procedentes de la vanguardia de su campo de estudio.
- Be able to apply knowledge to work in a professional manner and have competences for preparing and defending arguments and for solving problems within the field of study.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.
- Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.
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- Capacidad de comunicación profesional oral y escrita en las lenguas propias de la Universitat de València.
- Acquire the capacity to pose and solve problems, as well as to make decisions, in a limited time.
- Be able to convey information, ideas, problems and solutions to others (experts or not).
- Have critical and self-critical capacity.
- Know how to work in a team avoiding gender discrimination.
- Be able to handle the applications of information and communication technologies.
- Be able to apply knowledge to practice.
- Develop innovation and creativity.
- Be able to take on leadership, coordination and representation tasks.



- Be competent in the philosophical study of particular areas of research and human praxis, such as mind, knowledge, language, technology, science, society, culture, ethics, politics, law, religion, literature, arts and aesthetics, avoiding androcentric biases.
- Acquire a basic knowledge of the problems, texts and methods that philosophy has developed throughout its history and recognise possible androcentric biases.
- Identify the fundamental issues that underlie any type of debate.
- Identify and evaluate clearly and rigorously the arguments presented either in texts or orally.
- Be agile and efficient managing various sources of information: bibliographical, electronic and others.
- Appreciate autonomy and independence of judgement.
- Recognise human fallibility.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

Learning outcomes are considered to be related to the didactic proposal manifested in

- (1) the basic descriptors of the subject,
- (2) the skills to be developed,
- (3) the formative activities, linked to the teaching methodology,
- (4) the evaluative systems.

According to it, it is expected that students

- (1) know the working concepts, theories and methods most important in the field of Logic, to a graduate level,
- (2) know how to apply them to the various aspects of life, in general, and of philosophy, in particular,
- (3) know how to expand them through research and analysis of new problems,
- (4) know how to transmit and disseminate them at all levels, and
- (5) be able to undertake further studies.

DESCRIPTION OF CONTENTS



1. Set theory

Axioms of Zermelo-Fraenkel set theory. Fundamental notions, operations and constructions of set theory. Finite and infinite sets, ordinal and cardinal numbers.

2. Propositional logic

Syntax and semantics of propositional languages. Deductive calculus for propositional languages. The consequence operator and its properties. The properties of soundness, adequacy, completeness, compactness and decidability. Theories and models.

3. First order logic with identity

Syntax and semantics of first-order languages with identity. Deductive calculus for first-order languages. The consequence operator and its properties. The properties of soundness, adequacy, completeness, compactness and undecidability. Theories and models.

4. Non-standard logics

Intuitionistic logic as an example of non-bivalent logic. Modal operators and accessibility relations between possible worlds: modal logics as examples of non-extensional logics.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Classroom practices	15,00	100
Tutorials	5,00	100
Attendance at events and external activities	5,00	0
Development of group work	0,00	0
Development of individual work	20,00	0
Study and independent work	20,00	0
Readings supplementary material	10,00	0
Preparation of evaluation activities	30,00	0
Preparation of practical classes and problem	15,00	0
TOTAL	150,00	



TEACHING METHODOLOGY

1. Lectures (master classes with the possible participation of the students).

Credits: 1,20

Methodology of teaching and learning: Lecturer's exposition, with the possible participation of the students.

Competences to acquire: 1-3, 5-10, 13, 16, 17, 19, 21, 22.

2. Practical classes (participative, searching connections between theory and practice: case studies and simulations, problems resolutions, texts and documents analysis).

Credits: 0,60

Methodology of teaching and learning: Participation of the students under the teacher guidance.

Competences to acquire: 1-3, 6-8, 10-13, 15-19, 21, 22.

3. Essay

Credits: 0,80

Methodology of teaching and learning: Personal interviews to agree on the independent work of the student, the requirements of its elaboration and to follow its evolution.

Competences to acquire: 1-10, 12-14, 16, 17.

4. Supervisions (individual or in small groups)

Credits: 0,20

Methodology of teaching and learning: Personal interviews or online questions (through "Aula Virtual", e-mail, blogs, etc.)

Competences to acquire: all of them in general; especially 6, 9, 12, 13, 16.

5. Complementary activities: attendance to conferences, courses and other cultural, academic or scientific activities related with the knowledge area.



Credits: 0,20

Methodology of teaching and learning: Possible participation of the students and the writing of an essay or report about the topic.

Competences to acquire: all of them in general; especially 9, 10, 13, 16, 18.

6. Revision, preparation of tasks and realization of the tests.

Credits: 2,40

Methodology of teaching and learning: independent work.

Competences to acquire: all of them in general; especially 2, 3, 5, 6, 12, 16,

EVALUATION

Some of the followings systems of evaluation will be used, combining them to evaluate the competences implied in this subject:

1. Short-answer test

2. Long-answer test (Final written test)

3. Report or essay (seminary, practical classes, etc.)

4. Personal interview (in the supervisions to check orally the level of acquisition of the competences reached by the students).

REFERENCES

Basic

- Badesa, C., Jané, I. y Jansana, R. (2007). Elementos de lógica formal. Barcelona: Ariel, 2a edición.

Deaño, A. (2017). Introducción a la lógica formal. Madrid: Alianza.

Falguera, J. L. y Martínez, C. (1999). Lógica clásica de primer orden. Madrid: Trotta.



García-Trevijano, C. (2002). El arte de la lógica. Madrid: Tecnos, 3a edición.

Garrido, M. (2001). Lógica simbólica. Madrid: Tecnos, 4a edición.

Goldstein, L. et al. (2008). Lógica. Conceptos clave en Filosofía. Valencia: PUV.

Halmos, P. (1965). Teoría intuitiva de los conjuntos. México D.F.: Continental.

Manzano, M. y Huertas, A. (2004). Lógica para principiantes. Madrid: Alianza.

Additional

- Agler, D. (2012). Symbolic Logic. Syntax, Semantics, and Proof. New York: Rowman & Littlefield.

Alchourrón, C. E. (Coord.) (1995). Lógica. Madrid: Trotta.

Enderton, H. (2004). Una introducción matemática a la lógica. México D.F.: Instituto Invest. Filosóficas.

Frápolli, M. J. (Coord.) (2008). Filosofía de la lógica. Madrid: Tecnos.

Goranko, V. (2016). Logic as a Tool: A Guide to Formal Logical Reasoning. Chichester: Wiley & Sons.

Haack, S. (1991). Filosofía de las lógicas. Madrid: Cátedra.

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Orayen, R. y Moretti, A. (Coords.) (2004). Filosofía de la lógica. Madrid: Trotta.

Prior, A. N. (1976). Historia de la lógica. Madrid: Tecnos.

Quine, W. V. O. (1981). Los métodos de la lógica. Barcelona: Ariel, nueva edición.

Quine, W. V. O. (1998). Filosofía de la lógica. Madrid: Alianza.

Tomassi, P. (1999). Logic. London: Routledge.

ADDENDUM COVID-19



This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1. Contents

The course contents are the same as those specified in the course guide.

2. Workload and teaching schedule

Students will have assigned the same workload and teaching schedule, taking into account a blended-learning scheme during the first quadrimester of the current academic year.

3. Teaching methodology

Student groups will be divided into subgroups attending classroom sessions every other week. Subgroups will attend all lectures either in classroom or online. No practical seminars will be held online, they all will be scheduled during the weeks each group is allowed to attend classroom sessions.

Tutoring sessions with students will be held online.

4. Assessment

Course assessment might take into account the activities and exercises that will be regularly sent, class attendance and participation, and a final test (a written proof).

5. References

More bibliographic resources will be available online.