Logic and Argumentation

Academic Year: (2025 / 2026) **Review date: 21/04/2025 21:53:14**

Department assigned to the subject: Humanities: Philosophy, Language, Literature Theory Department

Coordinating teacher: RIVERO OBRA, MERCEDES

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

None.

LEARNING OUTCOMES

K2: Know basic humanistic content, oral and written expression, following ethical principles and completing a multidisciplinary training profile
S3: Analyze literary, philosophical, historical, and artistic texts from a critical and contextualized perspective
S10: Formulate complex, well-founded and persuasive critical reasoning, and know how to defend it orally and in writing, on humanistic matters
S11: To present the results of their study or work in a clear and precise way, using the appropriate visualization methods, in the field of Digital Humanities

OBJECTIVES

Ability to anlayze the argumentative structures of discourse
To master the basic logical structures
To examine the daily intuitions about concepts as knwledge, reason or rationality

DESCRIPTION OF CONTENTS: PROGRAMME

Arguments are an essential part of our social, political, and private lives. They are considered fundamental to human communication and interaction. We have theories, methods, and tools to analyze, construct, and evaluate arguments. Argumentation is not limited to the humanities: in recent years, the pandemic has provided a clear example of how arguments are constructed and used in the public sphere. This raises a number of questions, such as: If we have mastered the science of argumentation, why do we still argue? If we are rational animals, and therefore capable of being persuaded and convinced through rational arguments, why do we continue to argue?

In this course, we will explore theories of mind and argumentation and their connections to logic, rationality, epistemology, and agency. We will also study how digital environments influence argumentative processes and knowledge formation, and we will analyze digital tools that allow us to study, represent, and model arguments. To do this, we will follow the program outlined below:

* Assigned readings and the order of topics may change during the semester.

1. Logical Reasoning and Inferences
1.1. Fundamentals of logical reasoning
1.2. Validity, correctness, and soundness of reasoning
1.3. Types of reasoning
1.4. Inferences and logical conditionals
1.5. Sufficient and/or necessary conditions

2. Arguments

2.1. Types of arguments
2.2. The relevance of arguments in interactive reasoning
2.3. How to make a good argument
2.4. How to construct and evaluate sound arguments in digital contexts
2.5. Polarization

3. Cognitive Processes: Biases and Fallacies
3.1. Different theories on the development of human cognition
3.2. Cognitive biases in argumentation
3.3. Cognitive biases amplified by algorithms
3.4. Fallacies in argumentation
3.5. Fallacies in social media and online forums
3.6. Digital critical thinking

4. Knowledge and Argumentation
4.1. Concepts of knowledge in the digital age
4.2. The value of knowledge versus information overload
4.3. Knowledge and testimony
4.4. Epistemic injustice
4.5. Epistemic injustice in algorithms and platforms

5. Action
5.1. The concept of action
5.2. Different theories of action: classical and social
5.3. The concept of action in hybrid (human-digital) environments
5.4. Artificial agents and agency

6. Emotion, Affect, and Rationality in Everyday and Digital Environments
6.1. The concept of emotion
6.2. Different theories of emotion
6.3. How emotion influences rationality and action
6.4. Emotion in human¿artificial agent interaction

LEARNING ACTIVITIES AND METHODOLOGY

The methodology of this subject will revolve around three axes: the thematic blocks presented by the teacher, the text commenting sessions, and the preparation of group work. Due to the importance of the work for the final grade, a large part of the student's work will consist of coordinating its preparation with the responsible teacher and with his classmates. This fact will favor a collaborative methodology aimed at writing and presenting the work, to be able to defend his argument before the rest of his colleagues. All this will help them assimilate the knowledge necessary to successfully pass the final exam of the course.

ASSESSMENT SYSTEM

% end-of-term-examination/test:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

The evaluation of this subject will be continuous and, in addition, will have a final exam. It will be essential, therefore, to have all parts approved to pass the course. These will be the following:

- Class attendance, active participation, and commenting on texts practically. Regular attendance will be positively valued, as well as relevant participation during the presentation of content by the teacher. Students must actively participate in those practical sessions dedicated to commenting on texts, viewing audiovisual materials, etc. Likewise, they must deliver the requested practical work. This section will account for 5% of the overall grade.

- Group work and a short essay. The student must submit an essay (2,5000 words) according to a topic that will be agreed upon with the teacher in class, about the syllabus and a specific text. Both the understanding of the text and the group's ability to synthesize some of the discussions that have arisen during the practical sessions will be valued. The work will be presented in class and defended before the rest of the classmates, to learn to argue. In addition, it will be delivered in writing on the indicated date (according to the school calendar for that year). This section will account for 35% of the overall grade.

- Final exam: The student must demonstrate the knowledge acquired during the course by passing an

% end-of-term-examination/test:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

exam that will involve
60% of the overall grade.

Finally, the use of Artificial Intelligence tools is selectively allowed in this subject. The teacher may indicate a list of works and exercises that the student can perform using AI tools, specifying how they should be used, and how the student should describe the use he or she has made of them. If the use of AI by the student gives rise to academic fraud by falsifying the results of an exam or work required to accredit academic performance, the provisions of the Regulations of the Carlos III University of Madrid for partial development of the Law 3/2022, of February 24, on university coexistence.

BASIC BIBLIOGRAPHY

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