Università degli Studi di L'Aquila - Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica

Course catalogue

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Programme of Course "Knowledge, Language and Representation"

- Code: DT0346
- Type of course unit: Compulsory (Master Degree in Applied Data Science curriculum Data for Smart City), Compulsory (Master Degree in Applied Data Science curriculum Data for Life Science)
- Level of course unit: Postgraduate Degrees
- Semester: 1

Number of ects credits: (Master Degree in Applied Data Science) 6 (workload 150 hours)

Teachers: Giorgio Lando

1	**Course objectives**	The course aims to make the students aware of the ways in which various kinds of knowledge, evidence, datum, theory, justification and induction are interpreted by contemporary epistemology. Moreover, it aims to illustrate and critically discuss how the availability of large data amounts might change the roles of data and theory in scientific research.
2	**Course content and learning outcomes (dublin descriptors)**	Topics of the module include: • The definition of knowledge and Gettier's thought experiments. • The value of knowledge; the roles of justification and rationality in knowledge; virtue epistemology. • Perception; sense data; a priori/a posteriori distinction; induction, the old and new riddles of induction. • Passive knowledge and understanding; Google-knowing; data, information and noise; information cascades. • The alleged end of theory; does the "data deluge" make scientific method obsolete? • Data-centric biology as an epistemological case study; data, experiments and theories in data-centric biology. On successful completion of this module, the student should : • know the fundamentals of epistemology; understand why epistemological concerns are important for data scientists and data analysts; apply this knowledge and understanding to specific case studies concerning data-driven activities and disciplines.
3	**Course prerequisites**	No previous acquaintance with philosophy is required. A basic competence in propositional and predicate logic is useful, but not required.
4	**Teaching methodsand language**	Frontal lectures. **Language**: English **Reference textbooks** • Sabina Leonelli, ***Data-Centric Biology. A Philosophical Study***. University of Chicago Press. 2016. • Michael Lynch, ***The Internet of Us. Knowing More and Understanding Less***. Liveright. 2016. • Duncan Pritchard, ***What Is This Thing Called Knowledge? 4th Edition***. Routledge. 2018.
5	**Assessment methods**	The students will be assessed on the basis of a short written essay and of an oral exam. The short essay (3000-4000 words) should concern one of the topics in the reference texts (see above). The specific topic of the essay will be determined on the basis of the student's interests and needs, during office hours. The essay should be submitted to the teacher by email, at least fourteen days before the oral exam. The essay is expected to show that the student masters the basic terminology of contemporary epistemology and is able to argue for a thesis in a logically structured and sound way. The oral exam consists of two open questions and concerns the topics discussed during the lectures.