

Philosophical Basis of Knowledge Representation – PPGOC– ECI/UFMG
Prof. Mauricio B. Almeida – mba@eci.ufmg.br

UNIVERSIDADE FEDERAL DE MINAS GERAIS

Department of Information Theory and Management
Graduate Program in Knowledge Management and Organization

COURSE Topics in Management and Technology III: Philosophical Basis of Knowledge Representation			CODE TGI854	
PROFESSOR Mauricio Barcellos Almeida (School of Information Science, room 4007).				
DEPARTAMENT Information Theory and Management			UNIT School of Information Science	
HOURS	THEORY	SELF-STUDY	TOTAL	CREDITS
	15 hours	30 hours	45 hours	03
ACADEMIC YEAR 2019 from March to May			DEGREE Doctorate	
COURSE Graduate Program in Knowledge Management and Organization			TYPE Optional	

THE COURSE

This course consists in an overview of themes in Metaphysics and Philosophy viewed from a realist perspective applied to both Computer and Information Science. We begin with a historical overview and notions of Metaphysics and a discussion of general categories such as universals, particulars, objects and processes, to then extend these categories to specific fields like information systems, artificial intelligence, medicine and law.

COURSE LEARNING OBJECTIVES

Students should

- Learn notions of Metaphysics and Philosophy
- Understand the philosophical foundations of Knowledge Representation
- Understand formal ontology and underlying theories
- Understand the application of formal ontologies machinery in social reality

PROGRAM

1. Notions of Analytic Metaphysics – formal ontology
2. Formal ontology and reality
3. Formal ontology and society
4. Applications: rights, obligations, documents

This course is partially based on the course called “Department of Philosophy: Special Topics” from State University of New York at Buffalo, EUA. We use material and YouTube movies due to Dr. Barry Smith (<http://ontology.buffalo.edu/smith/>).

GRADING

Students will be required to take an active part in class discussions and to prepare a short-paper on some relevant topic. The paper should be submitted in a draft version on or before April 30, and in final form on or before May 30. A PowerPoint version may be required to be presented in the draft or final version of the paper in class.

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The student's grade will derive from:

- Readings
- Class participation
- Short-paper (draft version on April 30, final version on May 30)
- Presentation

SCHEDULE

Lectures on Mondays from 2:00pm to 5:00pm

Room: 2012 at School of Information Science, Campus UFMG

Detailed schedule will be provided and discussed during the first lecture.

BASIC REFERENCES

Almeida, M.B. (2013). Revisiting Ontologies: a necessary clarification. *Journal of the American Society of Information Science and Technology*. v. 64, n. 8, p. 1682–1693.

Arp R.; Smith, B.; Spear, A. *Building Ontologies with Basic formal ontology*. Cambridge: MIT Press, 2015.

Brochhausen, M.; Almeida, M.B.; Slaughter, L. Towards a formal representation of document acts and the resulting legal entities. In: Svennerlind, C.; Almäng, J.; Ingthorsson, R. *Johanssonian Investigations*: Berlin: Ontos-Verlag, 2013. p.120-139. (chapter)

Grenon, P. A Primer on Knowledge Representation and Ontological Engineering. In: Smith, B.; Munn, K. *Applied Ontology: an introduction*. Berlin: Ontos-Verlag, 2008. (chap.3)

Hennig, B. What is Formal Ontology? In: Smith, B.; Munn, K. *Applied Ontology: An Introduction*. Berlin: Ontos-Verlag, 2008. (chap.2)

Johansson, I. Money and Fictions. (1989). Retrieved from:
http://www.phil.gu.se/posters/festskrift2/mnemo_johansson.pdf

Lowe, E.J. Introduction to the Nature of Metaphysics. In: *A Survey of Metaphysics 1st Edition* Oxford: Oxford University, 2002. (chap.1)

Mealy, G.H. Another look at data. (1967). Retrieved from
<http://doi.ieeecomputersociety.org/10.1109/AFIPS.1967.112>

Morris, M. Austin on speech acts. In: Morris, M. *An Introduction to Philosophy of Language*. Cambridge: Cambridge Press, 2007. (chap.12)

Searle, J. *The Construction of Social Reality*. New York: Free Press, 2015.

Smith, B. John Searle: From Speech Acts to Social Reality. In: Smith, B. *John Searle*. Cambridge: Cambridge Press, 2003. (chap.1)

Smith, B. Ontology. In: Luciano Floridi (ed.), *Blackwell Guide to the Philosophy of Computing and Information*. Oxford: Blackwell. pp. 155-166, 2003. (chap.11)

Basic references are available on the Internet and also can be found in instructor's web site on <http://mba.eci.ufmg.br/>. Additional references will be provided during the course.