Faculty of Economic, Social and Political Sciences

COPS1112   Formal Logic

[30h+15h exercises] 3 credits

Teacher(s):   Thierry Lucas
Language: French
Level: First cycle

Aims

The objectives of this course are:
- to introduce students to basic logic and equip them with a core vocabulary and a number of reasoning techniques.
- to apply logic to concrete reasoning problems and show how it might be applied in Knowledge Theory, Semiology, Communication Theory and Systemic Theory (Palo Alto). To introduce students to formalisation
- to teach students a critical approach to explicit and implicit argumentation (such as those found in advertising slogans)

Main themes

The course provides an introduction to:
1. the logical analysis of language, distinctions are drawn between logic and rhetoric, between syntax, semantics and pragmatics. The value of logic in Social Science Studies is highlighted.
2. the history of Logic, with particular emphasis on the difference between ancient Logic (Aristotle and his followers) and modern Logic (Frege and his followers). Key notions introduced: formalisation, validity, tautology, absurdity, paradox)
3. Prepositional Logic and its applications.
4. Predicate Calculus and its applications

Content and teaching methods

The course has three main components : Introduction, Propositional Logic and Predicate Logic. The second and third parts of the course have the same basic structure - informal discussion of basic examples- detailed presentation of the related formal language - presentation of the semantics (defining what is meant in Logic by "true" and "false") - definition of correct forms of reasoning - study of a number of key characteristics - the method of counter-example - the method of natural deduction. The theoretical part of the course is given in the form of lectures but there are also a number of classroom-based practical exercise sessions led by the course teacher. There is also a "practical exercise" element to the course, which gives students more opportunity to practise a range of exercises: the corpus of exercises is under constant revision and comprises examples taken directly or adapted from current affairs and advertising.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Course materials: Thierry Lucas, Isabelle Berlanger, Isabelle de Greef, "Initiation à la logique formelle. Avec exercices corrigés", de Boeck Université, 2003, 233 p.
Evaluation:
The course is assessed through a written exam
Optional test

Other credits in programs

COMU11BA	Première année de bachelier en information et communication	(3 credits)	Mandatory
HUSO11BA	Première année de bachelier en sciences humaines et sociales	(3 credits)	
SOCA11BA	Première année de bachelier en sociologie et anthropologie	(3 credits)	
SPOL11BA	Première année de bachelier en sciences politiques	(3 credits)	