

Syllabus of the Logic pre-course  
University of Calabria  
Academic year 2022-2023

1. Basic logical concepts
  - 1.1. What is logic?
  - 1.2. Preliminary definitions
    - 1.2.1. Sentences and propositions
    - 1.2.2. Arguments, premises and conclusions
    - 1.2.3. Complex arguments
  - 1.3. Some clarifications
    - 1.3.1. Validity and truth
    - 1.3.2. Deduction and induction
  - 1.4. Exercises
  
2. Categorical propositions
  - 2.1. The theory of deduction
  - 2.2. Categorical propositions
  - 2.3. The traditional square of proposition
  - 2.4. Exercises
  
3. Categorical syllogisms
  - 3.1. Standard-Form categorical syllogism
  - 3.2. Syllogistic rules
  - 3.3. Fifteen valid forms of the categorical syllogism
  - 3.4. Natural language and syllogism
  - 3.5. Exercises
  
4. Fallacies
  - 4.1. What is a Fallacy?
  - 4.2. Classification of fallacies
    - 4.2.1. Fallacies of relevance
    - 4.2.2. Fallacies of presumption
    - 4.2.3. Fallacies of ambiguity
  - 4.3. Syllogistic fallacies
  - 4.4. Exercises
  
5. Symbolic Logic
  - 5.1. Modern logic and its symbolic language
  - 5.2. The Three principles of logic
  - 5.3. Logical connectives
    - 5.3.1. Conjunction and disjunction

5.3.2. Negation

5.3.3. Material implication and co-implication

5.4. Truth-tables

5.5. Exercises

6. Predicate Logic: Quantification theory

6.1. Singular propositions and subject-predicate propositions

6.2. Universal and existential quantifiers

6.3. Exercises

7. A Brief overview of the propositional calculus and some logical theorems

Syllabus is subject to change at instructor's discretion to accommodate the needs of the class and specific learning outcomes.

## References

Copi M. Irving, Cohen Carl, Rodych Victor, 2019<sup>15</sup>, *Introduction to Logic*, New York and London: Routledge.