



# CURRICULUM FOR THE FOUR-YEAR UNDERGRADUATE PROGRAMME UNDER THE NEW EDUCATION POLICY

## SEMESTER-I

### PHISEC101T

#### LOGIC I (ARISTOTELIAN LOGIC)

**Contact Hours: 45**

**Full Marks = 100 [ESE (70)/CCA (30)]**

**Course Objectives:** The course on Aristotelian Logic is designed to acquaint the students with the historical and structural development of Logic as an important arm of philosophical inquiry. The core objectives of this course are:

- i. To provide a thorough understanding of Aristotelian Logic, its principles, and its application in analysing and evaluating arguments, by exploring fundamental concepts, such as, categorical propositions, syllogisms, and the rules of validity.
- ii. To enhance critical thinking skills which are necessary for analyzing and assessing the validity of arguments by identifying fallacies, evaluating logical structures, and formulating clear and coherent reasoning.
- iii. To apply logical principles to real-world scenarios by identifying and analyzing arguments from a range of disciplines, including science, law and everyday life, and assess their logical validity.
- iv. To lay the foundation for advanced logical studies, such as, symbolic logic, informal logic, philosophical logic, etc.

#### **UNIT I**

Logic : Nature and Scope, Laws of Thought, Truth and Validity, Argument and Argument-Form.

#### **UNIT II**

Kinds of Proposition : Traditional and Modern Classification of Propositions

Square of Opposition : Traditional, Aristotelian and Boolean; Existential Import.

#### **UNIT III**

Immediate Inference : Conversion, Obversion, Contraposition.

#### **UNIT IV**

Mediate Inference : Categorical Syllogism, Figure and Mood of Syllogism,

Copi's Six Rules of Syllogism; and Venn Diagram Technique for Testing Syllogism.

#### **UNIT V**

Preliminary Set Theory.



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**Course Outcome:** Upon successful completion of the course, students will have a solid understanding of the principles and concepts of Aristotelian Logic, and will have developed advanced critical thinking skills necessary for evaluating the logical structure of arguments. They will be adept at identifying fallacies, constructing valid reasoning, and assessing the validity of arguments based on Aristotelian logical principles. Moreover, students will possess the necessary knowledge and skills to pursue advance logical studies in the fields of symbolic logic, informal logic, philosophical logic, and the like.

### **Suggested Readings:**

1. Copi, I.M., Introduction to Logic (Latest Edition). Routledge, London
2. Cohen and Nagal, Logic and Scientific Method.
3. Baronett. S and Sen, M., Logic, Pearson, Delhi.
4. Copi, I.M., Symbolic Logic (Latest Edition)

### **SEMESTER-II**

#### **PHISEC151T**

#### **LOGIC II (MODERN LOGIC)**

**Contact Hours: 45**

**Full Marks = 100 [ESE (70)/CCA (30)]**

**Course Objectives:** This course is an advanced course designed to delve deeper into the concepts, principles, and applications of modern symbolic logic. The core objectives of studying this course are:

- i. To provide students with a comprehensive understanding of advanced logical systems, such as, predicate logic, and the knowledge of translating and analyzing complex arguments using these formal systems.
- ii. To develop advanced proof techniques, including decision procedures, such as, Truth-Table, Shorter Truth-Table, Natural Deduction (Direct, Indirect, Conditional), etc.
- iii. To enhance students' critical thinking abilities by enabling them to recognize fallacies, evaluate deductive and inductive reasoning, and identifying logical inconsistencies.
- iv. To explore the practical applications of Logic in various disciplines, such as, Mathematics, Philosophical Logic, etc., and highlight how Logic plays a fundamental role in these fields, and how it can be applied to real-world scenarios.