

Deccan Education Society's
**FERGUSSON COLLEGE,
PUNE (AUTONOMOUS)**

SYLLABUS UNDER AUTONOMY

**FIRST YEAR B.A. LOGIC
SEMESTER – I**

Academic Year 2016-2017

**Deccan Education Society's
FERGUSSON COLLEGE, PUNE 411004
Scheme of Course Structure (Faculty of Arts)**

Department: PHILOSOPHY

LOGIC

Semester	Name of Paper (YSP)	Title of Paper	No. of Credits
F.Y. B.A. Sem I	Theory Paper - 1 (LOG1101)	Logical Reasoning: Indian and Western	3
F.Y. B.A. Sem II	Theory Paper - 2 (LOG1201)	Symbolic Logic: Elementary	3

**F.Y. B.A. Logic
Semester I**

LOG1101 Logical Reasoning: Indian and Western

Objectives:

- i. To introduce Logic as an academic subject
- ii. To introduce fundamental concepts in the process of reasoning
- iii. To provide a historical background for Indian and Western Logic
- iv. To introduce Syllogistic Logic in both, Indian as well as western context.

Unit I

- 1.1. What is Logic? Why study Logic?
- 1.2. A brief history of Logic
- 1.3. Understanding Basic Concepts: Argument, Inference, Proposition, Truth, Validity and Soundness
- 1.4. Deductive and Inductive Inferences
- 1.5. Logical Reasoning in the Indian Tradition: Methods of argumentation
- 1.6. Introduction to Nyaya Epistemology

Unit II

- 2.1. Traditional Classification of Propositions: Hypothetical, Disjunctive and Categorical
- 2.2. Nature and Classification of Categorical Propositions
- 2.3. Mediate and Immediate Inferences: Opposition as an Immediate Inference (Square of Opposition)
- 2.4. Conversion, Obversion and Contraposition
- 2.5. Mediate Inferences: Categorical Syllogism: Syllogistic Rules and Fallacies
- 2.6. Venn Diagram technique for proving validity of Syllogisms

Unit III

- 3.1. Other Mediate Inferences: Disjunctive and Hypothetical Syllogisms: Rules and Fallacies
- 3.2. Dilemma: Simple and Complex, Refutation and Rebuttal
- 3.3. Nature of Panchavayavi Vakya
- 3.4. Nyaya Anumana: Concepts of Hetu, Sadhya, Paksha and Vyapti
- 3.5. Classification of Anumana

Unit IV

- 4.1. Fallacies: Nature and Classification
- 4.2. Understanding Informal Fallacies: Petitio Principi, Ignoratio Elenchi (Baculum, Hominem, Misericordium, Verecundium, Ignoratum, Populum), Division, Composition, Accident, Converse Accident.
- 4.3. Hetvabhasas: The fallacies of the Nyaya theory of Inference

Books for Reference:

1. Introduction to Logic, by Irving Copi, Karl Kohen and Kenneth M'cmohan, 14th Edition, Relevant Chapters
2. An Introduction to Indian Philosophy, Dhirendramohan Datta and Satishchandra Chatterjee

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**FIRST YEAR B.A. LOGIC
SEMESTER – II**

Academic Year 2016-2017

F.Y. B.A. Logic

Semester II

LOG1201 Symbolic Logic: Elementary

Objectives

- i. To acquaint students with symbolic Logic.
- ii. To introduce techniques of decision procedure and formal proof of Validity
- iii. To introduce preliminary Set theory.

Unit I

- 1.1. Need for Symbolic Logic
- 1.2. Modern Classification of Propositions: Simple and Compound; Truth Functionally and Non-Truth Functionally Compound
- 1.3. Types of Truth Functions; Symbolization of Propositions
- 1.4. Exercises in Symbolization

Unit II

- 2.1. Understanding the Basic Truth-functions
- 2.2. Methods of Decision Procedure: Truth-table, Shorter Truth-table and Truth-tree
- 2.3. Determining Propositions as Tautologies, Contradictory and Contingent

Unit III

- 3.1. Proving Validity: Deductive Proof
- 3.2. Rules of Inference and Rules of Replacement
- 3.3. Conditional and Indirect Proof Methods
- 3.4. Proving Invalidity

Unit IV

- 4.1. Introduction to Set Theory
- 4.2. Definitions and Nature of: Sets, elements of sets, sub-set, proper sub-set, null-set, universal sets, compliment of set, identity of sets
- 4.3. Modes of specifying sets: listing, defining.
- 4.4. Basic operation on sets: union, intersection, complementation.

Books for Reference:

1. Introduction to Logic, by Irving Copi, Karl Kohen and Kenneth M'cmohan, 14th Edition
2. Patrrick Suppees (Chapter on Set Theory)