Fergusson College (Autonomous)

Pune

Learning Outcomes-Based Curriculum

for

F.Y.B. A. (Logic)

With effect from June 2019

Programme Structure

F.Y. B.A.		
Semester	**New CBCS Pattern**	**Old /Existing Pattern**
Sem I	**LOG1101**Logical Reasoning- Indian & Western (**Credits 03**)	**LOG1101**Logical Reasoning- Indian & Western (**Credits 03**)
Sem II	**LOG1201** Elementary Symbolic Logic (**Credits 03**)	**LOG1201** Elementary Symbolic Logic (**Credits 03**)
S.Y. B.A.		
Sem III	CC (3 credits) **PHI2301**: Title: Predicate Logic I	General Paper 2 Title: First Order Predicate Logic
Note: SEC 1C is CC'1 or 2' (General paper for other department students)		
Sem IV	CC (3 credits) **PHI2401**: Title: Predicate Logic II	General Paper 2 Title: Second Order Predicate Logic
SEC 1B is CC-'1 or 2' (General paper for other department students)		
T.Y. B.A.		
Semester	**New CBCS Pattern**	**Old /Existing Pattern**
Sem V	CC 1 (3 credits) **LOG3501** Logic: Methodology of Sciences (Natural and Social)	General Paper 3 Methodology of Natural Sciences
Note: SEC 1C is CC '1 or 2' (General paper for other department students)		
Sem VI	CC 1 (3 credits) **LOG3601** Traditions in Indian Logic	General Paper 3 Methodology of Social Sciences
Note: SEC 1D is CC-'1 or 2' (General paper for other department students)		

F.Y. B.A. Semester I		
Title of the Course and Course Code	**Logical Reasoning: Indian and Western (LOG1101)**	**Number of Credits : 03**
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Trace the stages of development of logic; comprehend the nature and scope of logic; identify the types and structure of reasoning.	
CO2	Differentiate between propositions and sentences.	
CO3	Compare the Nyaya theory of Anumana with Categorical syllogism.	
CO4	Distinguish between valid and invalid forms of reasoning.	
CO5	Evaluate arguments to identify errors in reasoning.	
CO6	Build arguments using valid and invalid forms.	

Unit. No.	Title of Unit and Contents
I	What is Logic? Why study Logic? A brief history of Logic, Understanding Basic Concepts: Argument, Inference, Proposition, Truth, Validity and Soundness, Deductive and Inductive Inferences Logical Reasoning in the Indian Tradition: Methods of argumentation, Introduction to Nyaya Epistemology
II	Traditional Classification of Propositions: Hypothetical, Disjunctive and Categorical Nature and Classification of Categorical Propositions, Mediate and Immediate Inferences: Opposition as an immediate Inference (Square of Opposition), Conversion, Obvers ion and Contraposition, Mediate Inferences: Categorical Syllogism: Syllogistic Rules and Fallacies, Venn Diagram technique for proving validity of Syllogisms
III	Other Mediate Inferences: Disjunctive and Hypothetical Syllogisms: Rules and Fallacies, Dilemma: Simple and Complex, Refutation and Rebuttal, Nature of Panchavayavi Vakya, Nyaya Anumana: Concepts of Hetu, Sadhya, Paksha and Vyapti Classification of Anumana
IV	Fallacies: Nature and Classification, Understanding Informal Fallacies: Petitio Principi, Ignoratio Elenchi (Baculum, Hominem, Misericordium, Verecundium, Ignoratium, Populum), Division, Composition, Accident, Converse Accident, Hetvabhasas: The fallacies of the Nyaya theory of Inference

References:

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.

F.Y. B.A. Semester II		
Title of the Course and Course Code	**Symbolic Logic: Elementary (LOG1201)**	**Number of Credits : 03**
Course Outcomes (COs) **On completion of the course, the students will be able to:**		
CO1	Identify various truth functions and symbolize propositions.	
CO2	Explain the need for symbolic logic.	
CO3	Assign truth values to truth functional compound propositions; Employ methods of decision procedure; apply the rules of inference on arguments.	
CO4	Categorize propositions in accordance with their logical operators.	
CO5	Demonstrate validity/invalidity of deductive arguments.	

Unit. No.	Title of Unit and Contents
I	Need for Symbolic Logic, Modern Classification of Propositions: Simple and Compound; Truth Functionally and Non-Truth Functionally Compound Types of Truth Functions; Symbolization of Propositions Exercises in Symbolization
II	Understanding the Basic Truth-functions Methods of Decision Procedure: Truth-table, Shorter Truth-table and Truth-tree, Determining Propositions as Tautologies, Contradictory and Contingent
III	Proving Validity: Deductive Proof, Rules of Inference and Rules of Replacement
IV	Conditional and Indirect Proof Method of Proving Validity, Demonstrating Invalidity of Invalid Arguments

References:

1. Introduction to Logic, by Irving Copi, Karl Kohen and Kenneth M'cmohan, 14th Edition.
2. **Hurley Pattrick, A Concise Introduction to Logic, 11th Edition, Wadsworth Cenage Publication, 2012.**