

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

SYLLABUS UNDER AUTONOMY
SECOND YEAR B.A.
SEMESTER –III

SYLLABUS FOR S.Y.B.A. Logic
Academic Year 2017-2018

PAPER CODE: LOG 2301
First Order Predicate Logic
[Credit - 3: No. of Lectures 48]

Objectives: To introduce Deductive systems and Symbolizations and derivations of first order predicate logic

Title and Contents		No. of Lectures
Unit –I	Deductive System	
	1.1 1. Nature of systematization and its limits Axiomatic system, Logistic system, Syntax and Semantics, significance of Logical Syntax	3
	1.2 Elements of deductive system, Characteristics of a deductive system	3
	1.3 Axiomatic System of P.M. and its first 15 theorems	6
Unit –II	Symbolizing Propositions in Predicate Logic	
	2.1 Need for Predicate Logic, difference in approach between Traditional logic and Predicate Logic	4
	2.2 Singular and General Propositions, Constants and Variables (Individual and Predicate), Propositional functions and Substitution instances; Instantiation and Quantification	4
	2.3 Universal and existential quantifiers; symbolizing general propositions; Evaluation of the square of opposition of traditional logic; Exercises in symbolizing general propositions.	4
Unit –III	Proving Validity: Predicate Logic	
	3.1 Need for quantification rules	4
	3.2 Nature, form and use of Quantification rules (Preliminary version), Rule of quantificational negation (Q.N.)	4
	3.3 Proving the validity of arguments involving quantification rule (preliminary version).	4
Unit –IV	Proving Invalidity: Predicate Logic	
	4.1 The basis for demonstration of invalidity of arguments	4
	4.2 Method of demonstrating invalidity of arguments in Predicate logic	4
	4.3 Exercises in demonstrating invalidity of arguments in predicate logic	4

Books for Study;

1. Copi, I. M., *Introduction to Logic*, Macmillan Co. New York, 1986. (14th Edition)
2. Copi, I. M., *Symbolic Logic*, Macmillan Co. New York, 1995 (5th ed.).

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SECOND YEAR B.A. SEMESTER –IV

SYLLABUS FOR S.Y.B.A. Logic
Academic Year 2017-2018

PAPER CODE: LOG 2401
Second Order Predicate Logic
[Credit - 3: No. of Lectures 48]

Objective:

To introduce complex Symbolizations and derivations of second order predicate logic

Title and Contents		No. of Lectures
Unit –I	Multiply General Propositions	
	1.1 The nature and definition of multiply general propositions	4
	1.2 Exercises in symbolizing multiply general propositions	4
Unit –II	Second Order Predicate Logic: Proving Validity	
	2.1 Need for revising the preliminary quantification rules; Revised form of quantification rules	4
	2.2 Exercises pertaining to erroneous proofs	4
	2.3 Exercises in proving the validity of arguments involving the use of revised Quantification rules, proof of logical truths involving quantifiers	4
Unit –III	Relational Logic: Symbolization and Derivations	
	3.1 Predicates and relations; Relational Logic as an extension of Predicate logic; The logical structure of relational proposition; kinds of relational propositions according to the number of relata.	2
	3.2 Symbolizing relational propositions	5
	3.3 Proving validity of arguments involving relational propositions	5
Unit –IV	Relational Logic: Enthymemes and Identity	
	4.1 Properties of dyadic relations	2
	4.2 Enthymeme. Proving validity of relational Enthymemic arguments	5
	4.3 Study of identity as a relation, Exercises in symbolizing propositions involving the relation of Identity, Rules of Identity, proving validity of arguments involving identity	5

Books for Study;

1. Copi, I. M., *Introduction to Logic*, Macmillan Co. New York, 1986. (14th Edition)
2. Copi, I. M., *Symbolic Logic*, Macmillan Co. New York, 1995 (5th ed.).