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

**Syllabus
for**

S. Y. B. A. Logic

[Pattern 2019]

(B.A. Semester-III and Semester-IV)

From Academic Year

2020-21

Fergusson College (Autonomous), Pune

Structure of S.Y.B.A. – Faculty of Arts and Humanities

Under CBCS pattern (2019-20) *effective from June 2020*

Equivalence Syllabus for Department of Philosophy (Subject – Logic)

SY BA	New CBCS Pattern	Old /Existing Pattern
Sem III	CC (3 credits) PHI2301: Title: Predicate Logic I	General Paper 2 Title: First Order Predicate Logic

Note: SEC 1A is CC '1 or 2' (General paper for other department students)

SY BA	New CBCS Pattern	Old /Existing Pattern
Sem III	CC (3 credits) PHI2401: Title: Predicate Logic II	General Paper 2 Title: Second Order Predicate Logic

Note: SEC 1B is CC-'1 or 2' (General paper for other department students)

S. Y. B. A. Logic Sem III		
Title of the Course and Course Code	First Order Predicate Logic (LOG2301)	Number of Credits : 03
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Identify the limits of propositional logic and explain the need for predicate logic. Describe the significance of Critical thinking and its relevance to Logic.	
CO2	Differentiate between propositions and propositional functions.	
CO3	Symbolize propositions in predicate logic; Demonstrate validity and invalidity of arguments in predicate logic; Use quantification rules on arguments in predicate logic	
CO4	Examine arguments to identify hidden premises.	
CO5	Evaluate the traditional square of opposition critically.	
CO6	Build arguments as instances of critical reasoning.	

Unit. No.	Title of Unit and Contents	No. of Lectures
I	Need for Predicate Logic Difference in approach between Traditional logic and Predicate Logic Singular and General Propositions, Propositional functions and Substitution instances; Instantiation and Quantification Set of symbols for symbolizing general propositions; Evaluation of the square of opposition of traditional logic; Exercises in symbolizing general propositions	12
II	Need for quantification rules Nature, form and use of Quantification rules (Preliminary version), Rule of quantificational negation (Q.N.) Proving the validity of arguments involving quantification rule (preliminary version)	12
III	The basis for demonstration of invalidity of arguments Method of demonstrating invalidity of arguments in Predicate logic Exercises in demonstrating invalidity of arguments in predicate logic	12
IV	Critical Reasoning What is Critical Reasoning Its benefits and barriers Critical Reasoning and Logic Identifying Arguments – Premises, Hidden Premises, Conclusions, Intermediate Conclusions	12

Learning Resources:

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.).
3. An Introduction to Critical Thinking, Madhucchanda Sen, Pearson
4. Critical Reasoning – A Practical Introduction, Anne Thomson, 3rd Edition, Routledge

S. Y. B. A Logic Sem IV		
Title of the Course and Course Code	Second Order Predicate Logic (LOG2401)	Number of Credits : 03
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Differentiate between singly general and multiply general propositions	
CO2	Translate complex multiply general propositions in symbolic form	
CO3	Identify errors in application of revised quantification rules; apply the rules of identity	
CO4	Analyze the structure of multiply general and relational propositions	
CO5	Prove validity of arguments in second order predicate logic.	
CO6	Compare and contrast deductive and inductive branches of reasoning	
Unit. No.	Title of Unit and Contents	No. of Lectures
I	The nature and definition of multiply general propositions Exercises in symbolizing multiply general propositions	12
II	Need for revising the preliminary quantification rules Revised form of quantification rules Exercises pertaining to erroneous proofs Exercises in proving the validity of arguments involving the use of revised Quantification rules, proof of logical truths involving quantifiers	12
III	Predicates and relations Relational Logic as an extension of Predicate logic; The logical structure of relational proposition Symbolizing relational propositions Proving validity of arguments involving relational propositions Properties of dyadic relations Enthymeme. Proving validity of relational Enthymemic arguments	12
IV	Induction and Deduction Revisited Simple Enumeration, Analogy, Scientific Induction, The problem of Induction, Hume on Induction Scientific hypothesis, Conditions of acceptability of hypothesis	12

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