# Anekant Education Society's

# Tuljaram Chaturchand College of Arts, Science & Commerce, Baramati, Dist- Pune

## (Autonomous College)

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## **Department of LOGIC**

# Syllabus

## Course Structure for S.Y.B.A. LOGIC (General)

Semester	Paper Code	Title of Paper	No. of Credits
III	LOG 2301	FORMAL LOGIC	3
IV	LOG 2401	FORMAL LOGIC	3

### **Department of LOGIC**

#### **Syllabus**

Course Structure for S.Y.B.A. LOGIC (General) (w.e. from June, 2020) Academic Year 2020 – 2021 Class: S.Y.B.A. (Semester- III) Paper Code: LOG 2301 Paper: G2 Title of Paper: Formal Logic Credit: 3 No. of Lectures: 48 (60 - 40 pattern to be Implemented from 2020-2021)

### **GENERAL OBJECTIVES OF THE COURSE/ PAPER:**

- I. To acquaint Studants with Formal Logic
- II. To introduce techniques of decision procedure and formal proof of validity
- III. To introduce Deductive systems and symbolizations and derivations of first order Predicate logic
- IV. To introduce complex symbolizations and derivations of second order predicate logic

## **Semester-III**

## **Unit 1:-**

- A. What is Symbolic Logic?
- B. Classification of Propositions: Simple and Compound
- C. Determining Propositions as Tautologies, Contradictory and Contingent

## **Unit 2:**

- A. the Basic Truth-functions
- B. Methods of Decision Procedure: Truth-table, Shorter Truth-table
- C. Exercises Of Explanations

## Unit 3:

- A. Rules of Inference
- **B.** Exercises Of Explanations
- **C. Conditional Proof Methods**
- **D.** Exercises Of Explanations

## Unit 4:

- A. Introduction to Set Theory
- **B.** Types of Set Theory
- C. Venn Diagram
- D. Explanations Venn Diagram

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Tuljaram Chaturchand College of Arts, Science & Commerce, Baramati, Dist-Pune (MS)

#### (Autonomous College)

### **Department of LOGIC**

**Syllabus** 

Course Structure for S.Y.B.A. LOGIC (General) (w.e. from June, 2020) Academic Year 2020 – 2021 Class: S.Y.B.A. (Semester- IV) Paper Code: LOG 2401 Paper: G2 Title of Paper: Formal Logic Credit: 3 No. of Lectures: 48 (60 - 40 pattern to be Implemented from 2019-2020)

## **Semester-IV**

Unit 1:

- A. Need for Predicate Logic, difference in approach between Traditional logic and Predicate Logic
- **B.** Singular and General Propositions, Constants and Variables (Individual and Predicate), Propositional functions and Substitution instances; Instantiation and Quantification
- C. Universal and existential quantifiers; symbolizing general propositions; Evaluation of the square of opposition of traditional logic; Exercises in symbolizing general propositions.

Unit 2:

- A. Need for quantification rules
- **B.** Nature, form and use of Quantification rules (Preliminary version), Rule of quantificational negation (Q.N.)
- C. Proving the validity of arguments involving quantification rule (preliminary version).

#### Unit 3:

- A. 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.
- **B.** Symbolizing relational propositions
- C. Proving validity of arguments involving relational propositions

### Unit 4:

- A. Properties of dyadic relations
- **B.** Enthymeme. Proving validity of relational Enthymemic arguments
- C. Study of identity as a relation, Exercises in symbolizing propositions involving the relation of Identity, Rules of Identity, proving validity of arguments involving identity

Readings: Reference Book:-

- 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. Pattrick Suppees (Chapter on Set Theory)
- 4. Symbolic logic (4<sup>th</sup>ed.) I. M. Copi.
- 5. Formal logic : scope and limits
- 6. तर्कविद्या भाग १, २ डॉ. बी.आर जोशी, प्रा.कुलकर्णी, प्रा. मठवाल
- 7. आधुनिक तर्कशास्त्र --नांगरे, डॉ.चौगुले, प्रा.फरतारे (शिवाजी वि. कोल्हापूर)
- 8. तर्कशास्त्र —श्रीनिवास दिक्षीत
- 9. तर्कशास्त्राची मूलतत्वे-वाडेकर दे. द.
- 10.सुलभ तर्कशास्त्र प्रा. मुकुंद कदम
- 11.पारंपारिक तर्कशास्त्र —नांगरे, फडतारे, चौगुले, हिरवे, बाघमोडे