



SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
(Formerly University of Pune, Pune)

Semester & Choice Based Credit System (SCBCS)
2019 Pattern

S. Y. B. A. LOGIC AND PRINCIPLES OF REASONING
(PHILOSOPHY)

Semester 3 & 4

Core Course 2 C & 2 D (CC 2 C & CC 2 D)

Syllabus

Class	Semester	CBCS Pattern	Title of the Course	Credits
SYBA	3	CC 2 C	Deductive Proof	03
SYBA	4	CC 2 D	Predicate and Relational Logic	03

(To be operative from the Academic Year 2020-21)

Approved in the Board of Studies in Philosophy, Logic and Gandhian Thought

(BOS formed in 2019) CBCS 2019 Pattern

Members of the Board

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6. Kanchana Mahadevan, ^{PhD}., Professor & HOD Philosophy, Mumbai University, Mumbai (Expert, other university)

Syllabus preparation Sub-committee

Core Course 1 C & 1 D (CC 1 C & CC 1 D)

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2. Aman Bagade, ^{PhD}., Associate Professor & HOD Philosophy, New Arts, Com. & Science College, Ahmednagar.
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E-content preparation team

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CBCS 2019 Pattern 2020-21

SYBA LOGIC AND PRINCIPLES OF REASONING Semester- 3

Core Course 2 C (CC 1 C)

Syllabus

Operative From 2020-21

Semester Third: Deductive Proof

Objectives :

1. To teach students to acquire pleasures in logical thinking.
2. To acquaint the student with the principles and techniques of Deductive Proof of validity and invalidity in Propositional Logic.
3. To acquaint the student with the principles and techniques of Axiomatic system.
4. To create awareness about the significance of logical thinking for academics and life in general.
5. To prepare students for university evaluation system and competitive examination.

Credit 1: Deductive Proof and Proving Invalidity

1. The Concept of deductive proof
2. Rules of Inference and rules of replacement.
3. Nature and method of Direct proof
4. Proving validity of valid arguments in propositional logic by using direct proof method.
5. The nature invalidity.
6. Use of the method of assigning truth-values to demonstrate the invalidity of invalid arguments

Credit 2: Inductive logic

1. Nature and origin of Induction
2. Types of Induction:
 - A) simple enumeration
 - B) Analogy
3. Inductive leap
4. Problem of induction and its solution
5. Hume's Criticism of Induction

Credit 3: Axiomatic system

1. Nature of systematization.
2. Axiomatic System of P.M.
3. Characteristics of a Axiomatic System.
4. Rules of Axiomatic system.
5. Types Axiomatic System.
6. Axiomatic System: first 15 theorems

References :

1. Copi, I. M., Introduction to Logic, Macmillan Co. New York, 1986.
2. Copi, I. M., Symbolic Logic, Macmillan Co. New York, 1995 (6th ed.).
3. Hughes and Londe, Elements of Formal Logic, Methuen, London, 1965. (Relevant chapters only)
4. Terrell, D.B., Logic : A Modern Introduction to Deductive Reasoning, Holt Reinhart and Winston, New York, 1967.
5. कावळे एस. आर. आणि गोळे लीला, 'सुगम आकारक तर्कशास्त्र', पुणे
जवदयापीठ प्रकाशन, पुणे,
१९७२.
6. दि. य. पांडे, आणि , 'सांकेतिक तर्कशास्त्र', कमकयोग, सुशीला बलराज
विश्व सुनीती विमल मंगक, नागपूर.

7. बारललांगे सुरेखर आणि मराठे मो. प्र., 'तक्क रेखा', काण्ढिनेखिल प्रकाशन, पुणे-३०.
8. सांतोष ठाकरे, तक्क शास्त्र, कुांभ प्रकाशन, अमरावती, २००१.
9. ियाकपूरकर, पारांपरक तक्क शास्त्र, प्रकाशक: भूपाली ियाकपूरकर, १९७८, सोलापूर

E-Content

(1) Online Downloadable Syllabus Based Study Materials

1. E-Content Learning - SPPU, Pune (Exam Purpose Module in English and Marathi) :
<http://study.Materials.unipune.ac.in:8080/jspui/>
2. Sunil Bhoite YouTube मराठी : श्रेयांक –घिकाांची सपटीकरिात्मक व्याख्यानं
<https://www.youtube.com/channel/UC7JeiDxLgsjaRjX3mek8NDg>
3. PHILOSOPHER'S NOTES मराठी नोट्स : <http://philosophia.yolasite.com/>

(2) Online Downloadable Reading Study Materials – Articles.

1. Introduction to Logic <http://logic.stanford.edu/intrologic/public/index.php>
2. Deductive reasoning/deductive logic
https://en.wikipedia.org/wiki/Deductive_reasoning
3. Deductive and Inductive Arguments <https://www.iep.utm.edu/ded-ind/>
4. Rule of inference https://en.wikipedia.org/wiki/Rule_of_inference
5. List of rules of inference https://en.wikipedia.org/wiki/List_of_rules_of_inference

(3) Audio-Visual Materials

(A) YouTube

1. PHILO-notes, What Is Logic? - Introduction to Logic (05 minutes 14 secs.):
https://www.youtube.com/watch?v=oVgVz175Rdw&ab_channel=PHILO-notes
2. Mark Thorsby, Introduction to Formal Logic (Videos) :
<https://www.youtube.com/channel/UCh613185XS3ttEUA8UYnPuW>
3. A.V. Ravishankar Sarma, Identification of Arguments (54 minutes 50 secs.) :
https://www.youtube.com/watch?v=gfYwQ7oxDok&list=PLbMVogVj5nJS1F-yeDwn16nsuYrpSYzaO&ab_channel=nptelhrd
4. Mark Thorsby, Basic Concepts: Arguments, Premises, & Conclusions (35 minutes 5 secs.):
https://www.youtube.com/watch?v=qL6HMPOYIVs&list=PLS8vfA_ckeuz9UjAHhA1q-ROZGuE_h21V&ab_channel=MarkThorsby
5. What is an Axiom? (Philosophical Definition) (06 minutes 53 secs.):
https://www.youtube.com/watch?v=qSpKQfSnN44&ab_channel=Carneades.org
6. Lassonde Student, Axioms, Rules of Inference and Proofs in Predicate Logic (09 minutes 57 secs.) :
https://www.youtube.com/watch?v=qSpKQfSnN44&ab_channel=Carneades.org

https://www.youtube.com/watch?v=AWPQKvWBJIk&ab_channel=LassondeStudent

7. Mark Thorsby, Argument Forms: Proving Invalidity (26 minutes 44 secs.) :
https://www.youtube.com/watch?v=bCuqts1f2NU&ab_channel=MarkThorsby
8. Mark Thorsby, Predicate Logic: Finite Universe Method (01 hour 08 minutes 52 secs.) : https://www.youtube.com/watch?v=x6lnBtOS6E0&ab_channel=MarkThorsby

(B) Films (Recommended)

1. Philosophy and Film Database: Logic/Critical thinking :
<https://libguides.newcastle.edu.au/philosophyandfilmdatabase/logic>

SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
CBCS 2019 Pattern
SYBA LOGIC AND PRINCIPLES OF REASONING Semester- 4
Core Course 2 D (CC 1 D)
Syllabus
Operative From 2020-21

Semester Fourth: Predicate and Relational Logic

Objectives :

1. To acquaint the student with Predicate logic and Rules of Quantification.
2. To equip students with the logic of relations.
3. To acquaint the student to the pleasures in logical thinking.

Credit 1: Predicate Logic

1. Nature and need of Predicate Logic.
2. Singular and General Propositions.
3. Constants and Variables (Individual and Predicate)
4. Propositional functions.
5. Substitution instances.
6. Instantiation and Quantification.

Credit 2: Research Methodology

1. Nature and utility of research methodology
 2. Research Methodology in social sciences
 3. Nature scope and use of data collection:
 4. Method of data collection
 - A) Survey,
 - B) Observation,
 - C) Questionnaire,
 - D) Interview.
- (Nature, types, merits and limitations of each method)

Credit 3: Relational Logic

1. Nature of relational logic: as an extension of Predicate logic.
2. Properties of dyadic relations.
3. The logical structure of relational proposition.
4. Kinds of relational propositions according to the number of relata.

5. Symbolizing relational propositions

References :

1. Copi, I. M., Introduction to Logic, Macmillan Co. New York, 1986.
2. Copi, I. M., Symbolic Logic, Macmillan Co. New York, 1995 (6th ed.).
3. Hughes and Londe, Elements of Formal Logic, Methuen, London, 1965. (Relevant chapters only)
4. Robert Lata and Alexandar Macbeath, The elements of Logic (Macmillan & Co. Ltd)
7. कावळे एस. आर. आणि गोळे लीला, 'सुगम आकारक तर्कशास्त्र', पुणे
जवयापीठ प्रकाशन, पुणे,
१९७२.
8. दि. य. पांडे आणि , 'सांकेतिक तर्कशास्त्र', कमलयोग, 'सुशला' बलराज माक,
विश्व सुनीती विव नागपूर.

9. सुरेन्द्र बारलगाणे आणि म. म. मराठे 'तक्क रेखा', काण्ढिनिर्दालि एकाशन,
पुणे-३०.
10. सांतोष ठाकरे, तक्क शास्त्र, कुांभ एकाशन, अमरावती, २००१.
11. ियाकपूरकर, पारांपरक तक्क शास्त्र, एकाशक: भूपाली ियाकपूरकर, १९७८,
सोलापूर

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<http://studyMaterials.unipune.ac.in:8080/jspui/>
2. PHILOSOPHER'S NOTES मराठी नोट्स : <http://philosophia.yolasite.com/>

(2) Online Audible Syllabus Based Study Presentations.

- Sunil Bhoite YouTube मराठी : श्रेयांक -घिकांंची स्पष्टीकरिात्मक व्याख्यानं
<https://www.youtube.com/channel/UC7JeiDxLgsjaRjX3mek8NDg>

(3) Online Downloadable Reading Materials- Books, Articles, etc.

1. Terrell, D.B., Logic : A Modern Introduction to Deductive Reasoning, Holt Reinhart and Winston, New York, 1967 : <https://archive.org/details/logicmodernintro0000terr>.
2. Irving M. Copi Carl Cohen Kenneth McMahon, Introduction to Logic
http://angg.twu.net/tmp/2016-optativa/copi_introduction_to_logic.pdf
3. Neidorf, Robert, Deductive forms : an elementary logic :
<https://archive.org/details/deductiveformsel0000neid>
4. Relational Logic http://logic.stanford.edu/intrologic/lectures/lecture_06.pdf
5. Relational Logic :
http://intrologic.stanford.edu/chapters/chapter_06.html#:~:text=In%20Relational%20Logic%2C%20the%20precedence,both%20quantifiers%20and%20logical%20operators.

(4) Audio-Visual Materials

(A) YouTube

1. Introduction to Proofs in Predicate Logic (08 minutes 36 secs.):
https://www.youtube.com/watch?v=rWsoUhFGWN8&ab_channel=LassondeStudent
2. Predicate Logic: Predicate and Quantifier –INTRODUCTION Hindi (11 minutes 14 secs.) :
https://www.youtube.com/watch?v=lxNaLc8riHY&ab_channel=UniversityAcademy-

[Formerly-IPUniversityCSE%2FIT](#)

3. Quantification Theory (30 minutes 13 secs.) :_
https://www.youtube.com/watch?v=27AlkKV7A14&ab_channel=Ch-02%3ASANSKRITI%5BArts%2CHistory%2CPhilosophy%5D
4. Universal Quantifier, Existential Quantifier, Inference Rule for Quantifiers (05 minutes) :_
https://www.youtube.com/watch?v=HRncRYBDggA&ab_channel=StudyYaar.com

(B) Films (Recommended)

1. Philosophy and Film Database: Logic/Critical thinking :_
<https://libguides.newcastle.edu.au/philosophyandfilmdatabase/logic>