GPH S2 01

Logic - 2

SEMESTER - II

PHILOSOPHY

Block 1

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

Subject Experts

Professor Sibnath Sarma, Dept. of Philosophy, Gauhati University
Professor Sauravpran Goswami, Dept. of Philosophy, Gauhati University
Mr. Pradip Khataniar, Associate Professor, Dept. of Philosophy, Cotton University

Course Co-ordinators: Dr. Bhaskar Bhattacharyya, Asst. Professor, Dept. of Philosophy, KKHSOU
Dr. Tejasha Kalita, Asst. Professor, Dept. of Philosophy, KKHSOU

SLM Preparation Team

UNITS	CONTRIBUTORS
1	Professor Begum Bilkis Banu, Deptt. of Philosophy, Gauhati University
2 & 3	Dr. Pranati Devi, Deptt. of Philosophy, B. Borooah College
4, 5 & 7	Dr. Bhaskar Bhattacharyya, Assistant Professor, KKHSOU
6	Dr. Juthika Das, Deptt. of Philosophy, Handique Girls' College
8	Dr. Tejasha Kalita, Assistant Professor, KKHSOU
9	Mr. Pradip Khataniar, Deptt. of Philosophy, Cotton University
10	Mrs. Meenakshee Sharma Pathak, Deptt. of Philosophy, Handique Girls' College

Editorial Team

Content Editor: Professor Begum Bilkis Banu, Deptt. of Philosophy, Gauhati University
Dr. Maina Sharma, Deptt. of Philosophy, B. Borooah College
Dr. Pranati Devi, Deptt. of Philosophy, B. Borooah College

Language Editor: Dr. Arpana Nath, Assistant Professor, Dept. of English, Cotton University
Dr. Kalpana Bora Barman, Assistant Professor, Dept. of English, Cotton University

Format Editor: Dr. Bhaskar Bhattacharyya, Dr. Tejasha Kalita, KKHSOU

First Edition: December, 2017

This Self Learning Material (SLM) of the Krishna Kanta Handiqui State University is made available under a Creative Commons Attribution-Non Commercial-ShareAlike4.0 License (International): http.//creativecommons.org/licenses/by-nc-sa/4.0.

Printed and published by Registrar on behalf of the Krishna Kanta Handiqui State Open University.

Head Office : Patgaon, Rani Gate, Guwahati-781 017; Web: www.kkhsou.in
Sub-Head Office : Housefed Complex, Dispur, Guwahati-781 006

The university acknowledges with thanks the financial support provided by the **Distance Education Bureau, UGC**, for the preparation of this study material.

COURSE INTRODUCTION

This course deals with Logic. Logic is an important branch of philosophy. The word ‘logic’ is derived from the Greek word ‘logos’. It means thought or reason or law. Logic is defined as the science of reasoning. This definition is not accepted as the real definition of logic because reasoning implies a special kind of inferring or inference. Again, we can define logic as the study of the methods and principles used in distinguishing correct from incorrect arguments. This helps us to make a distinction between correct and incorrect argument. That is why; it is clear that logic is a tool or strategy by which we can find out the distinction between good reasoning and bad reasoning. The study of logic, therefore, enhances our reasoning power to testify the arguments, whether they are valid or invalid. It also helps us in our domestic discourse to argue systematically with others.

BLOCK INTRODUCTION

This course consists of two blocks.

The first block consists of ten units. The first unit starts with 'Standard Form of Categorical Syllogism'. After going through this unit, you will be able to know what standard form of categorical syllogism is and what its structure. Mood and figure are two important things of the standard categorical syllogism. These two are also discussed in this unit. Apart from these two, you will also be able know to about venn-diagrametic technique.

The second unit is 'Venn-diagram'. After going through this unit, you will be able to know what the four standard forms of categorical propositions are and their class relations, distribution of terms etc. You will also be able to know, what Venn diagram is and what the use of it is. This unit is also dealt with history of Venn diagram and Aristotelian and Boolean standpoint of it.

The third unit is 'Venn-diagrametic Technique for Testing the Categorical Syllogism'. It discusses the concept of syllogism, kinds of syllogism, standard form of categorical syllogism, Venn-diagram etc.

The fourth unit, 'Rules of Categorical Syllogism'. This unit basically includes concepts like categorical syllogism, standard form of it, figure and mood, and different rules of categorical syllogism.

The fifth unit, 'Basic Categorical Fallacies' discusses what is categorical fallacy, what are different types of basic categorical fallacies.

The sixth unit starts with 'Formal Proof of Validity'. After going through this unit, you will be able to know what formal proof of validity is. You will also be able to know how the formal proof of validity of an argument can be constructed easily. The nineteen rules namely, the rules of inference and rules of replacement will also be discussed in this unit.

The seventh unit is 'Rules of Inference.' After going through this unit, you will be able to know what rules of inference are and what the nine rules of inference are. You will also be able to know how by applying these rules validity of the arguments can be proved.

The name of the eighth unit is 'Rules of Replacement'. After going through this unit you will be able to know what rules of replacement are and what the twenty rules of inference are. You will be further able to know about the difference between 'rules of inference' and 'rules of replacement.'

The ninth unit is 'Elementary Formal Deductions by Applying These Rules'. This unit basically includes concepts like categorical syllogism, standard form of it, figure and mood and different rules of categorical syllogism. By reading this unit you will be able to know what elementary formal Deduction is and about the strategy for constructing formal deduction and certain examples of formal deduction.

The name of the tenth unit is ‘Decision Procedure’. After going through this unit you will be able to know that decision procedure is basically concerned with the concept of decidability. You will also be able to know Truth-Table method, the Method of Reductio Ad Absurdum or the Indirect Truth-Table Method, Reduction to Conjunctive Normal Form.

While going through this course, you will come across some along-side boxes, which are put on the left side or right side of the text. These boxes will give us the meanings of some words and concepts within the text. Apart from this, there will be some broad and short questions included under Activity and Check Your Progress in every unit. Activities will increase our thinking capacity because questions put in Activity are not directly derived from the text. But answers to the short questions are put in the section Answers to Check Your Progress. Besides, there are some text-related questions which are put in Model Questions. These questions will help your attention on the probable topics for the examination so that you can prepare for the examination with confidence.

BACHELOR OF ARTS

Logic 2

DETAILED SYLLABUS

UNIT 1: Standard Form of Categorical Syllogism **Pages: 9-20**

Standard Form Categorical Syllogism, Mood, Figure, Venn Diagram Technique for Testing Syllogism

UNIT 2: Venn Diagram **Pages: 21-41**

Categorical Proposition and Standard Form of Categorical Proposition**,** Classes and Relation, The Four Standard Form of Categorical Propositions and Their Class Relations, Distribution of Terms, Venn Diagram, Use of Venn Diagram, History, Aristotelian and Boolean Standpoint, Symbolism and Diagrams for Standard Form Categorical Propositions

UNIT 3: Venn-Diagrametic Technique for Testing the Categorical Syllogism **Pages: 42-58**

Concept of Logical Form, Distinction between Form and Matter, Recognizing the Form of an Argument, Logical Form and the use of Symbols, Importance of Logical Form

UNIT 4: Rules of Categorical Syllogism **Pages: 59-69**

What is Categorical Syllogism? Figures and Moods of Syllogism, Standard Form Categorical Syllogism, Rules of Categorical Syllogism

UNIT 5: Basic Categorical Fallacies **Pages: 70-78**

Categorical Syllogism, Fallacy of Four Terms, Fallacy of Undistributed Middle, Fallacy of Illicit Major, Fallacy of Illicit Minor

UNIT 6: Formal Proof of Validity **Pages: 79-97**

Formal Proof of Validity, Strategy for Deduction, Derivation Rules: Rules of Inference, Derivation Rules: Rules of Replacement, Differences between Replacement and Substitution, Differences between Rules of Inference and Rules of Replacement, Test of Formal Proof

UNIT 7: Rules of Inference **Pages: 98-108**

What is Rules of Inference, Nine Rules of Inference, Solved Examples of Rules of Inference

UNIT 8: Rules of Replacements **Pages: 109-114**

What is Rules of Replacement, Ten Rules of Replacement, Solved Examples of Rules of Replacement

UNIT 9: Elementary Formal Deductions by Applying These Rules **Pages: 115-124**

Elementary Formal Deduction, Simple Introductory Deduction, The Strategy for Constructing Formal Deduction, Certain Examples of Formal Deduction

UNIT 10: Decision Procedures **Pages: 125-138**

Decidability, Truth-Table method, The Method of Reductio Ad Absurdum or the Indirect Truth-Table Method, Reduction to Conjunctive Normal Form