



**Block 2**



**SENTENTIAL LOGIC 1: INTRODUCTION**

**UNIT 1**

**Introduction to the Form of Arguments in Modern Logic**



**UNIT 2**

**Conjunction, Disjunction, Conditional and Biconditional**

**UNIT 3**

**Rules of Inference and Nature of Validity of Arguments**



**UNIT 4**

**Fallacies**



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## BLOCK INTRODUCTION

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Logic in the contemporary century has turned out to be as precise as mathematics in the hands of logicians of analytical and symbolic traditions. In place of propositions and premises, argument forms with symbols are used for right thinking. What are the advantages of using symbols? What is the nature of arguments? This block shall briefly deal with questions of this kind. Symbolic Logic is generally divided into two: Sentential Logic and Predicate Logic. In Sentential Logic, two kinds of sentences are recognized: Simple and Compound. Block 2 deals only with sentential logic. There are different kinds of compound sentences, each requiring its own logical notation. Conjunction, disjunction, conditional, and bi-conditional are all different ways of combining simple sentences into compound sentences. Each of them is symbolized in order to determine their truth-value, using truth-tables or applying Rules of Inference. Certain Rules of Inference are applied for testing the validity of arguments. Among them there are 9 Rules of Inference and 10 Rules of replacement.

**Unit 1** on 'Introduction to the Form of Arguments in Modern Logic,' introduces the form of arguments and the symbols and techniques of modern logic. It clarifies a number of points like main concern of Logic, context of emergence of symbolic logic, history of logic, difference between classical and modern logic, use of symbols, and nature of arguments.

**Unit 2** introduces to the students to the classification and symbolization of sentences in symbolic logic, especially of compound sentences such as conjunction, disjunction, and implication. It enables the students of logic to determine the truth-value of truth-functionally compound sentences, with the skill to discriminate between valid and invalid arguments and argument forms.

**Unit 3** helps the students of logic to learn and recognize the Rules of Inference and the nature of validity of arguments. The truth-table method helps one to test the validity of arguments and the truth of compound sentences along with their sentence connectives. Rules of Inference become another method of testing the validity of arguments.

**Unit 4** enables the students to recognize fallacies that violate the Rules of correct thinking. Fallacies as a method of arguing that appears to be valid but actually false. Understanding what a fallacy is and developing the ability to identify different fallacies help us to judge the value of an argument, to detect errors and to avoid mistakes in reasoning.