FIRST SEMESTER, 2014-2015

Course Handout (Part II)

Date:

In addition to part I (General course Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

***Course No.*:** **HSS F236**
***Course title*:** **Symbolic Logic**
***Instructor-in-charge*:** **ANUPAM YADAV**

Scope and Objective:

A study of the propositional and quantification logic to understand and use the basic symbolic procedures to analyze the nature and assess the status of deductive arguments

Text Book: Copi, Irving M., *Symbolic Logic*, 5th Edition, Pearson Education, 1979 (Indian Reprint, 2006)

Reference Books:
R1. Carney, J.D, *Introduction to Symbolic Logic*, Englewood Cliffs, N.J., 1970
R2. Copi, Irving M, *Introduction to Logic*, Pearson Education, 13th Edition, 2009

Course Plan:

Lecture No.	Learning Objectives	Topics to be covered	Reference Chap/Sec. (Book)
1	To understand the nature of logical reasoning	Introduction to Logic	R2, Ch. 1
2	Introducing the major vocabulary of the subject	Key Concepts	R2, Ch. 1
3	To see how the premisses support the conclusion.	Representing the Structure of Arguments	R2, Ch.1
4	Analyzing the relation between truth, validity and soundness to understand the nature of arguments clearly.	Truth, Validity and Soundness	Text Book, Ch. 1

5	To understand the basis of division between categorical propositions in traditional logic.	Categorical Propositions: Quantity, Quality and Distribution	R2, Ch.5
6	To understand the different ways in which the propositions are related to each other and the different opposition relations	Traditional Square of Opposition: Relations of Opposition	R2, Ch.5
7-8	To understand the nature of categorical syllogism and the relevance of major, minor and middle terms. To understand rules and examine fallacies.	Categorical Syllogisms: Major, Minor and Middle terms; Validity of Syllogisms - Rules and Fallacies.	R2, Ch.6
9-10	Understanding how to represent and check the validity of arguments by means of Venn diagrams	Venn Diagrams	R2, Ch. 6
11	To analyze the value of symbolic logic and understand its different concerns.	Symbolic Logic: Introduction	Text Book, Ch. 1
12	Recognizing the value of sentential connectives in forming compound statements out of simple statements.	Sentential Connectives	Text Book, Ch.2
13	To see how to symbolically represent natural language so that the logical features could be easily located.	Symbolizing Natural Language	Text Book, Ch.2
14	To understand the nature of the arguments, which are composed of compound statements, as their validity depends heavily on the different ways the compound statements are related to each other.	Arguments Containing Compound Statements	Text Book, Ch.2
15	Analyzing the important role of truth functional connectives like conjunction, disjunction, implication etc. in determining the truth-value of propositions.	Role of truth-functional connectives	Text Book, Ch.2
16	To construct truth tables of different truth functional connectives.	Truth-tables	Text Book, Ch.2

17-18	How to check the validity of arguments mechanically using truth tables.	Testing Validity and Invalidity by Truth tables	Text Book, Ch.2
19	To identify the formal features of arguments so that checking validity will be easier.	Argument Forms	Text Book, Ch.2
20	To locate the formal nature of different type of statement and to classify them into three groups: tautologies, contradictories and contingent.	Statement Forms	Text Book, Ch.2
21	To see how to check whether a statement is a tautology or contradictory or contingent by means of truth tables.	Testing the Status of Statement Forms by Truth-tables	Text Book, Ch.2
22-23	To check the validity of arguments with the help of a set of elementary argument forms that can be applied to check validity mechanically.	Formal Proof of Validity: Rules of Inference	Text Book, Ch. 3
24-26	To apply a set of logical equivalences in the process of arriving at the validity of arguments.	Rules of Replacement	Text Book, Ch. 3
27	How to prove certain arguments invalid without using truth tables and not employing the formal proof.	Proving Invalidity	Text Book, Ch. 3
28	Understanding the use of conditional proof to prove validity of arguments	Conditional Proof	Text Book, Ch. 3
29	To employ the *reductio ad absurdum* method to assess validity of arguments	Indirect Proof	Text Book, Ch. 3
30-31	A method, which employs insights from truth table technique and *reductio ad absurdum* to check validity and the status of statements.	Shorter Truth table Technique	Text Book, Ch. 3
32-33	Understanding how to symbolize statements that involve existential or	Quantification theory	Text Book, Ch. 4

	universal quantifiers.	Translation with Quantifiers	
34	The nature and function of the quantifiers are examined	Universal Quantifier and Existential Quantifier	Text Book, Ch. 4
35	A modern square of opposition is constructed using quantifiers	Modern Square of Opposition	Text Book, Ch. 4
36	To assess the validity of arguments that involves propositions with quantifiers.	Quantification Rules	Text Book, Ch. 4
37	To prove the validity of arguments by using the quantification rules.	Proving Validity	Text Book, Ch. 4
38	Proving the invalidity of certain arguments by assigning truth-values.	Proving Invalidity	Text Book, Ch. 4
39	To understand how to symbolize the statements which involve relations.	Symbolizing Relations	Text Book, Ch.5
40	To check the attributes of relational statements.	Attributes of Binary Relations	Text Book, Ch.5

Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weightage/ Marks	Date, Time & Venue	Remarks
1	Mid Semester Test	90 Minutes	30	To be announced	CB
2	Quiz / Report / Assignment	-	30	To be announced	OB/CB
3	Comprehensive Examination	3 Hours	40	To be announced	CB

Chamber Consultation Hour: To be announced in the class.

Notices: Notices, if any, concerning the course will be displayed on the Department of Humanities and Social Sciences notice board.

Makeup Policy: Make-up components will be allowed provided there would be a documentary proof to support the case.

Instructor-in-charge
HSS F236