

DISCIPLINE SPECIFIC ELECTIVE – (DSE-13) – Philosophy of Logic

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/Practice		
Philosophy of Logic DSE 13	4	3	1	Nil	12th Passed	Knowledge of Truth functional Logic

Learning Objectives

- This course is essentially about the nature of logic
- This course is designed to apprise students of the diversity of point of views on the problematic and debatable logical issues.
- The selection of issues is done keeping in mind the topics that the student is already familiar with. Introductory courses on Logic include syllogism, the laws of thought and symbolic logic.
- Hence this course includes theoretical discussions of issues in these areas of deductive logic.

Learning Outcomes

- Students will understand the debates around the nature of logic
- Students will develop the critical ability to engage with abstract concepts in logic
- Students will appreciate the problems and beauty of the basics of logic
- Students will realize that what seems trivial is actually profound and can be subject to change

UNIT 1 Nature of Logic

(12 Hours, 4 Weeks)

1. The Formal Laws of Thought: Immanuel Kant
2. Logic as the Essence of Philosophy: Bertrand Russell

Essential/Recommended Reading

I. M. Copi, J.A. Gould (ed.), Readings on Logic 1st edn., New York, NY: Macmillan (1964), 38-42.

I. M. Copi, J.A. Gould (ed.), Readings on Logic 1st edn., New York, NY: Macmillan (1964), 78-92

UNIT 2 The Syllogism

(9 Hours, 12 Weeks)

1. What the Tortoise said to Achilles: Lewis Carroll
2. Aristotle's Logic: Bertrand Russell

Essential/Recommended Readings

Carroll, L. (1895), "What the Tortoise Said to Achilles", *Mind* N.S. 4, 278–280 Also reprinted in I. M. Copi, J.A. Gould (ed.), *Readings on Logic* 1st edn., New York, NY: Macmillan (1964), 122–124.
I. M. Copi, J.A. Gould (ed.), *Readings on Logic* 1st edn., New York, NY: Macmillan (1964), 125–130.

UNIT 3 Laws of Thought

(12 Hours, 4 Weeks)

1. Proving the Laws of Thought by Aristotle
2. A Defense of the Law of Excluded Middle by Bertrand Russell

Essential/Recommended Reading

I. M. Copi, J.A. Gould (ed.), *Readings on Logic* 1st edn., New York, NY: Macmillan (1964), 133–144.
I. M. Copi, J.A. Gould (ed.), *Readings on Logic* 1st edn., New York, NY: Macmillan (1964), 117–186

UNIT 4 Symbolic Logic

(12 Hours, 4 Weeks)

1. Mathematics and Logic by Bertrand Russell

Essential/Recommended Reading

I. M. Copi, J.A. Gould (ed.), *Readings on Logic* 1st edn., New York, NY: Macmillan (1964), 216–223

Suggestive Readings

- Barnes, Jonathan, 1981. "Proof and the Syllogism", 17–59 in Berti 1981.
- Boolos, G., 1998, *Logic, Logic, and Logic*, Cambridge: Harvard University Press.
- Freeman, J. B. 1988 *Thinking Logically*, Englewood Cliffs, NJ: Prentice Hall.
- Gabbay, Dov M., and John Woods (eds.), 2009, *Handbook of the History of Logic: Volume 5 — Logic From Russell to Church*, Amsterdam: Elsevier/North Holland.
- Galathai, Jolen, 2013, *Russell's Philosophy of Logical Analysis*, London: Palgrave Macmillan.
- Hintikka, Jaakko, 2009, "Logicism", in A.D. Irvine (ed.), *Philosophy of Mathematics*, Amsterdam: Elsevier/North Holland, 271–290.
- Lear, Jonathan, 1980. *Aristotle and Logical Theory*, Cambridge University Press.
- Patzig, Günther, 1969. *Aristotle's Theory of the Syllogism*, Jonathan Barnes (trans.), Dordrecht: D. Reidel.
- Scriven, M. 1976 *Reasoning*, New York, NY: McGraw-Hill