Course Title: Logic for Computer Science
Credit Structure (L-T-P-Cr): (3-0-0-3)
Course Code: IT424
Program/ Semester: B.Tech, Semester VI
Category: Elective
Prerequisites (if any)/desired skill set: Discrete Mathematics
Course objective: Students are expected
(1) To learn syntax and semantics of propositional logic and first order logic
(2) To learn the proof procedures and its soundness and completeness in propositional logic and first order logic
(3) To learn the incompleteness in first order logic

Course content:

Propositional Logic
Syntax, Semantics, Normal Forms, Natural Deduction, Resolution procedure

First Order Logic
Syntax, Semantics, Natural Deduction, Herbrand Theory, Resolution Procedure, Craig’s Interpolation Theorems, Beth’s Definability Theorems

Godel’s Incompleteness Theorems

Suggested textbook/references:

Text Books

References
1) Logic in Computer Science: Modelling and reasoning about systems, M. Huth, M. Ryan, Cambridge University Press, 2004
2) A First Course in Logic, Shawn Hedman, Oxford University Press, 2004
Grading Policy

Midsem 40%
Endsem 50%
Attendance 10%