

80-310/610, Fall 2003
Logic and Computation
Syllabus (Buldt)

Day	Date	Subject	Remarks
I. Introduction			
Mo	08/25	General Introduction I	—
We	08/27	General Introduction II	—
Fr	08/29	Concepts from Set Theory	—
II. Syntax of/for \mathcal{L}_1			
Mo	09/01	<i>Labor Day</i>	no class
We	09/03	Alphabets & Cardinality	§§ II.1–2
Fr	09/05	Terms & Formulas	§ II.3
Mo	09/08	Issues in Induction	§ II.4
We	09/10	”	§ II.5
Fr	09/12	”	p. 56
III. Semantics of/for \mathcal{L}_1			
Mo	09/15	Structure & Interpretation	§§ III.1–2
We	09/17	Satisfaction & Consequence	§§ III.3–4
Fr	09/19	Various Semantical Concepts	pp. 35–36
Mo	09/22	Coincidence	pp. 36–38
We	09/24	Reduct & Expansion	p. 38
Fr	09/26	Isomorphism	pp. 40–42
Mo	09/29	Dedekind’s Proof	pp. 50–51
We	10/01	Substructure	pp. 42–43
Fr	10/03	Substitution	§ III.8
IV. Calculus for \mathcal{L}_1			
Mo	10/06	Sequent Calculus (propositional)	§§ IV.1–3
We	10/08	Sequent Calculus (quantificational)	§§ IV.4–5
Fr	10/10	Other Calculus	slides

Mo	10/13	Axiomatics	slides
We	10/15	1st In-Class Exam	!
Fr	10/17	<i>Mid-Semester Break</i>	no class
Mo	10/20	Correctnes	p. 70
We	10/22	Consistency	§ IV.7
Fr	10/24	Completeness (Proof Idea)	pp. 75+85

V. Completeness Proof for \mathcal{L}_1

Mo	10/27	Henkin’s Theorem	§ V.1
We	10/29	Countable Case	§ V.2
Fr	10/31	General Case	§ V.3

VI. Completeness & Beyond

Mo	11/03	Löwenheim-Skolem Theorems	§§ VI.1–2
We	11/05	”	”
Fr	11/07	”	pp. 107, 111–112
Mo	11/10	Compactness Issues	§§ V.2+4
We	11/12	”	”
Fr	11/14	”	”
Mo	11/17	Extensions of \mathcal{L}_1	§ IX.1
We	11/19	”	§ IX.2
Fr	11/21	”	§ IX.3

VII. Computability, Decidability & Incompleteness

Mo	11/24	Computability & Representability	§§ X.1–2
We	11/26	<i>Thanksgiving Holiday</i>	no class
Fr	11/28	<i>Thanksgiving Holiday</i>	no class
Mo	12/01	Decidability & Incompleteness	§§ X.3–7
We	12/03	”	”
Fr	12/05	”	”
??	12/??	2nd In-class Exam	!
Th	12/18	—	Final Grades