

Logic in Computer Science

DAT060/DIT202

Week 2–8

Week 2: Natural Deduction for Propositional Logic

Reading

Sections 1.1 and 1.2.

Recommended exercises

All exercises for section 1.2.

Week 3: Semantics of Propositional Logic and Normal Forms

Reading

Sections 1.3, 1.4 and 1.5.

Recommended exercises

All exercises for section 1.4 except 7–11.

Exercises 1–14 in section 1.5.

Week 4: Natural Deduction for Predicate Logic

Reading

Sections 2.1, 2.2 and 2.3.

Recommended exercises

All exercises for section 2.1, 2.2 and 2.3.

Week 5: Semantics of Predicate Logic

Reading

Section 2.4.

Recommended exercises

All exercises in section 2.4.

Week 6: Undecidability of Predicate Logic

Reading

Section 2.5.

Recommended exercises

Exercises 2.5.1 (a)-(g) in section 2.5.

Week 7: LTL and CTL

Reading

Sections 3.1–3.5.

Recommended exercises

Exercise 3.2.2 and all exercises in section 3.4.

Week 8: Algorithms for Model Checking and Fixed-point Characterization

Reading

Sections 3.6 and 3.7.

Recommended exercises

All exercises in section 3.7.