

PHIL 005
Spring, 2016
Calendar of Class Meetings, Assignments, and Examinations

Problem sets should be submitted at the start of lecture as indicated.

- 01.13 Lecture 1: What is this course about?
- 01.15 Problem Session 1
- 01.20 Lecture 2: Truth-functional Logic: Syntax and Semantics
- 01.22 Problem Session 2
- 01.25 Lecture 3: Expressive Completeness of Truth-functional Logic
Problem Set 1 Due
- 01.27 Lecture 4: Truth-functional Validity, Satisfiability, and Implication
- 01.29 Problem Session 3
- 02.01 Lecture 5: Monadic Quantification Theory (MQT): Syntax and Semantics
Problem Set 2 Due
- 02.03 Lecture 6: MQT: Counting Structures
- 02.05 Problem Session 4
- 02.08 Lecture 7: MQT: Validity, Satisfiability, and Implication
Problem Set 3 Due
- 02.10 Lecture 8: MQT: Homomorphisms and Monadic Equivalence of Structures
- 02.12 Problem Session 5: Practice Examination 1
- 02.15 Examination 1
- 02.17 Lecture 9: MQT: Decision Procedure for Validity, Satisfiability, and Implication
- 02.19 Problem Session 6
- 02.22 Lecture 10: Polyadic Quantification Theory (PQT): Syntax and Semantics
Problem Set 4 Due
- 02.24 Lecture 11: Exploring the Expressive Power of PQT: Simple Graphs, Linear Orders, and Functional Relations
- 02.26 Problem Session 7

02.29 Lecture 12: Exploring the Expressive Power of PQT: Equivalence Relations and Binary Functions

03.02 Lecture 13: Exploring the Expressive Power of PQT: Finite Spectra

03.04 Problem Session 8

03.14 Lecture 14: Definability of Relations
Problem Set 5 Due

03.16 Lecture 15: Symmetry, Automorphisms, and Isomorphisms

03.18 Problem Session 9

03.21 Lecture 16: Automorphisms and Definability: Orbits
Problem Set 6 Due

03.23 Lecture 17: Review for Examination 2

03.25 Problem Session 10: Practice Examination 2

03.28 Examination 2

03.30 Lecture 18: PQT: Validity, Satisfiability, and Implication

04.01 Problem Session 11

04.04 Lecture 19: PQT: A System of Deduction
Problem Set 7 Due

04.06 Lecture 20: PQT: Deductions

04.08 Problem Session 12

04.11 Lecture 21: PQT with Identity: A System of Deduction
Problem Set 8 Due

04.13 Lecture 22: PQT with Identity: Deductions and Counterexamples

04.15 Problem Session 13

04.18 Lecture 23: PQT with Identity: Soundness, Completeness, and Compactness
Problem Set 9 Due

04.20 Lecture 24: PQT with Identity: Undecidability of Validity – The Church-Turing Theorem and Beyond

04.22 Problem Session 14

04.25 Lecture 25: Whither Now?

04.27 Lecture 26: Review for Final Examination

04.29 Problem Session 15: Practice Final Examination

05.02 Final Examination 12:00-2:00

Schedule of Readings

All reading assignments refer to *Deductive Logic* by Warren Goldfarb.

For Lectures 1-4 read Sections 1-16

For Lectures 5-9 read Sections 18-27

For Lectures 10-26 read Sections 28-41

Course Requirements and Grades

There will be nine problem sets, with due dates specified in the calendar above, examinations in class on Monday, February 15 and Monday, March 28, and a final examination on Monday, May 2, 12:00-2:00 pm. 10% of the final grade will be based participation in the problem sessions, 20% on the problem sets, 40% on the exams in class, and 30% on the final exam.