

# INFORMATION FOR PHILOSOPHY 521

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## Texts:

P. Teller, *A Modern Formal Logic Primer*, available at Cal Copy (not in bookstore). Available soon. Available immediately on Blackboard.

## Requirements:

- 1) Three midterm exams, only best two count, 30% each.
- 2) Comprehensive final, 35%.
- 3) Homework and lab work, 5%.

## Brief Outline:

- 1) Propositional language, logical equivalences, translation to and from English, truth table test for validity, natural deduction proofs.
- 2) Predicate language, simplified syntax and interpretation of predicate logic, translation to and from English, full predicate language, full interpretations, proofs of invalidity by counterexamples, natural deduction proofs, theories.

## Remarks:

- 1) This course does not require previous experience with computers.
- 2) Attendance will not be taken, but failure to attend is guaranteed to cause you problems.
- 3) This course becomes somewhat more difficult toward the end, so do not fall behind. Seek the instructor's assistance early if you do not understand something after reading the text, listening in class, and attempting the problems.

## Tentative Readings and Exercises:

Read Volume I, Chapter I, *Basic Ideas*, pp. 1-20

Ex. 1-2, a, c, e, g, i

Ex. 1-4, b, d

Ex. 1-5, a, b, e, f

Ex. 1-6, b, d, f

Read Chapter II, *Transcription Between English and Sentence Logic*, pp. 21-28

Ex. 2-2, a, c, e, g, i, k, m, o, q, s, u

Read Chapter III, *Logical Equivalence, Logical Truths, and Contradictions*, pp. 29-39

Ex. 3-2, a, c, e, g, i

Ex. 3-6, a, b, h

Read Chapter IV, *Validity and Conditionals*, pp. 46-57

Ex. 4-2, a, c, e; 4-5, a, c, e

Ex. 4-8, a, c, e, g, i, k

Do truth-table and translation exercises on computer

Read Chapter V, *Natural Deduction for Sentence Logic: Fundamentals*, pp. 59-74

Do proof exercises on computer

Read Chapter VI, *Natural Deduction for Sentence Logic: Strategies*, pp. 75-93

Do proof exercises on computer

## FIRST MIDTERM

Read Chapter VI, *Natural Deduction for Sentence Logic: Derived Rules*, pp. 94-106

Do proof exercises on computer

Read Volume II, Chapter I, *Predicate Logic: Syntax*, pp. 1-12

Ex. 1-1, a, c, e, g

Ex. 1-2, a, c, e, g, i

Ex. 1-3, b, c, g, i

Ex. 1-4, a, c, e, f, g, j, m

Ex. 1-5, a, c, g, g, i, h, m

Read Chapter II, *Predicate Logic: Semantics and Validity*, pp. 13-27

Ex. 2-1, a, b, d

Ex. 2-2, a, c, e, g, i

Ex. 2-4, a, c, e, g, i

Ex. 2-5(b), b1, b3, b5, b7, b9

Ex. 2-6, a, c, e, g, h (added)

Read Chapter III, *More About Quantifiers*, pp. 28-39

Ex. 3-1, a, c, e, f

Ex. 3-2, a, c, e, g, i

Read Chapter IV, *Transcription*, pp. 40-61

Ex. 4-3, a, c, e, g, i, k, m, o

Ex. 4-4, a, c, e, g, g, k, r, s, w, x, aa

Read Handout "Translation Strategies: Successive Refinement"

Ex. 4-8, a, c, h, i, n, q, x, aa, ee, gg, mm, rr, uu, kkk

Do translation, truth, and validity exercises on computer

Read Handout "Proving Invalidity," do exercises

## SECOND MIDTERM

Read Chapter V, *Natural Deduction in predicate logic*, pp. 62-90

Do proof problems on computer

Read Chapter VI, *More on Natural Deductions for Predicate Logic*, pp. 91-105

Do proof problems on computer

## THIRD MIDTERM

Read Handouts on Theories, Philosophical Arguments, do exercises

## FINAL EXAM (comprehensive)