Introduction to Logic (PHIL 120)

Summer B-Term 2016

Dempsey Hall; Room 112; 1:10–3:20pm MTWThF (7/21–8/19)

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Office Hours: 3:30–5:30pm Thursdays

Text: John Nolt, Dennis Rohatyn, and Achille Varzi. *Schaum's Outlines: Logic*. 2nd ed. New York, NY: McGraw-Hill, 1998. Print. [Required]

Course Focus:

This course is concerned with formal systems of logic. It will be divided roughly in half: the first half will focus on the logic of whole sentences. In the second half we will expand this system to allow a more fine-grained and powerful logic. This course will involve three areas of evaluation—Exams, Homework, and Participation.

Exams:

There will be 4 exams during the course (see the course schedule for dates). Each exam will be worth 100pts for a total of 400pts.

Homework:

There will be 4 homework assignments (see the course schedule for due-dates). The lowest homework grade will be dropped. Each homework is worth 10pts for a total of 30pts. Homework is due *at the beginning* of class (1:10pm).

Participation:

Participation is a qualitative measure of your involvement in class, both with the instructor and your peers. Good faith participation throughout the course (as judged by the instructor) can contribute *up to* (but does not guarantee) 10pts to the final grade.

Grading:

The class will be graded out of 400pts.

Let x = total points. If,

- $x \geq 400$pts, then the final grade will be 4.0.
- $120 < x < 400$pts, then the final grade will be $\frac{x}{100}$.
- $x \leq 120$pts, then the final grade will be 0.0.

Note: In order to receive a passing grade (> 0.7) it is necessary (but not sufficient) to take **3 out of 4 exams**.

Class Policies:

— Late homework will not be accepted.

— Homework that is turned in after the beginning of class (no later than 1:15pm) will be considered late.

— Missed exams can be excused **only if** (1) the instructor is notified at least 48 hours *prior to* the exam **and** (2) the student has *sufficient reason* with accompanying documentation. Make-up exams will be scheduled at the time of notification. ***Plan Accordingly***.

— The schedule is subject to change. You will be notified in writing if it does.

Note: During the half-term, missing one day of class is equivalent to missing approximately **half a week** of full-quarter instruction. Keep this in mind when considering the effect of absences.

Course Schedule

Week 0: July 21,22 (Th,F)

- Day 1 – What is Logic? Argument; Validity; Formal Systems; Translations
- Day 2 – The language SL / Translations / Well-Formed-Formulae

Week 1: July 25–29 [Chapter 3]

- Day 1 – Translations and Semantics for SL / Truth Tables for WFFs and Arguments
- Day 2 – Review Tables / Introduction to Trees for WFFs
- Day 3 – Review Trees for WFFs / Trees for Arguments
- Day 4 – Review and Practice
- Day 5 – Exam One
  - ⧫ **Homework 1 Due**

    pp.78–80 [**I**: Evens 2–16; **II**: All; **III**: 6,8,9 (Tables), 5,7,10 (Trees); **IV**: 2,3,5 (Tables), 8,9,10 (Trees)]

Week 2: August 1–5 [Chapter 4]

- Day 1 – Natural Deduction / Basic Rules
- Day 2 – Review Basic Rules / Derived Rules
- Day 3 – Theorems and Equivalences
- Day 4 – Review and Practice / Metatheory: Semantic vs Deductive Consequence
- Day 5 – Exam Two
  - ⧫ **Homework 2 Due**

    p.108 [**III**: 3-9 Odds; **IV**: Primes[1],8; **V**: 2,4,6 (Note: #4 is not a WFF, add parentheses to make it an equivalence.)]

Week 3: August 8–12 [Chapter 6]

- Day 1 – Predicate Logic: The language $\mathcal{L}$ and Translations
- Day 2 – Semantics for $\mathcal{L}$ / Trees
- Day 3 – Models
- Day 4 – Review and Practice
- Day 5 – Exam Three
  - ⧫ **Homework 3 Due**

    pp.163–165 [**I**: Primes; **II**: All; **III**: See Handout; **IV**: 2,4,5,10; **V**: Odds 7-15,20]

Week 4: August 15–19 [Chapter 7]

- Day 1 – Natural Deduction in $\mathcal{L}$ / New Rules
- Day 2 – QE and Theorems
- Day 3 – Identity and Further Developments in Logic
- Day 4 – Review and Practice
  - ⧫ **Homework 4 Due**

    pp.192–193 [**I**: 2,5,11,17,23]
- Day 5 – Exam Four

[1] Tip: The number 1 is not a prime. Extra Credit (HW2): why?