

Point Loma Nazarene University

**Advanced Studies in Logic: Predicate, Inductive, Modal, and Mereological**

PHL490

Fall 2018

T 12:30-3:30

3 Units

Instructor: Rob Thompson

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Office Hours: by appointment

**PLNU MISSION:**

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

**COURSE DESCRIPTION:**

The goal of this course is to develop strong agency with predicate, inductive, modal, and mereological logics to equip the student to translate arguments from the natural language and analyze them for their truth, validity, and strength. For our purposes, logic is characterized as the general study of arguments, with emphasis on principles and methods which enable us to distinguish between good and bad arguments. The study of logic comprises the recognition, recasting, construction, and evaluation of arguments.

Students will familiarize themselves with four types of logic and develop facility with translating arguments from the natural language into any four types of logical syntax as well as from one logical syntax into another. Students will also learn the necessary operators and rules surrounding recognizing, developing, and analyzing arguments in preparation for evaluation. Finally, students will prepare presentations spanning multiple class periods where they prepare to teach necessary elements of a specified type of logic.

**COURSE LEARNING OUTCOMES:**

1. Students will become familiar with all four types of logic in a way which allows them to competently, quickly, and accurately recognize, analyze, and form arguments.
2. Students will be proficient in translating arguments from the natural language into logical syntax as well as from one logical syntax into another.
3. Students will apply standard forms of reasoning to all four types of logic to make conclusions about argument truth, validity, and strength.

**REQUIRED TEXTS:**

*The Art of Reasoning - An Introduction to Logic and Critical Thinking* by David Kelley

### **COURSE REQUIREMENTS AND GRADING:**

10% Readings: Read all assigned material before the start of each session.

25% Homework: Complete all assigned homework before the start of each session.

15% Exam 1: Exam on Predicate Logic (Ch. 10 & 11)

15% Exam 2: Exam on chapters 12-16

35% Presentations: Daily Presentations and final presentations.

### **ACADEMIC ACCOMMODATIONS:**

Please see us in order to discuss any accommodations you may need. All students are expected to meet the minimum standards for this course as set forth by the instructor. Students with learning disabilities who may need accommodations should first discuss options and services with the Academic Support Center (ASC) during the first two weeks of the semester. Approved documentation must be provided by the student and placed on file in the ASC prior to the beginning of the semester. If you have a diagnosed disability, please contact PLNU's Disability Resource Center (DRC) within the first two weeks of class to demonstrate need and to register for accommodation by phone at 619-849-2486 or by e-mail at [DRC@pointloma.edu](mailto:DRC@pointloma.edu). See [Disability Resource Center](#) for additional information.

### **INCLUSIVE LANGUAGE:**

The School of Theology and Christian Ministry is committed to the equality of women and men. Recognizing that people often use language in ways that imply the exclusion or inferiority of women, the School strongly urges students to join faculty and staff in avoiding any sexist language in public discourse, in classroom discussions and in writing.

### **PLNU COPYRIGHT POLICY:**

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

### **PLNU ACADEMIC HONESTY POLICY:**

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

### **PLNU ATTENDANCE AND PARTICIPATION POLICY:**

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that

date, receive the appropriate grade for their work and participation. See [Academic Policies](#) in the Undergraduate Academic Catalog.

**TENTATIVE COURSE SCHEDULE:**

**8/28 (Week 1):** Chapter 10 (emphasis on Conditional Proof and Reductio Ad Absurdum; *come to class having read both chapters with all Chapter 10 homework already completed*) & Chapter 11

**9/4 (Week 2):** Chapter 11

**9/11 (Week 3):** Chapter 11

**9/18 (Week 4):** Exam I (on chs. 10-11) & Chapter 12

**9/25 (Week 5):** Chapter 13

**10/2 (Week 6):** Chapter 14

**10/9 (Week 7):** Chapter 15

**10/16 (Week 8):** Chapter 16

**10/23 (Week 9):** Exam II (on chs. 13-16)

**10/30 (Week 10):** Modal Logic (Emilie)

**11/6 (Week 11):** Modal Logic (Emilie)

**11/13 (Week 12):** Modal Logic (Emilie)

**11/20 (Week 13):** Mereological Logic (Connor)

**11/27 (Week 14):** Mereological Logic (Connor)

**12/4 (Week 15):** Mereological Logic (Connor)