Philosophy 31
Logic, First Course
Summer Session A 2020

Instructor
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Office Hours: Wednesdays 1-3pm via Zoom
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Description
In this course, we will learn a new language: symbolic logic. Using this formal language, we will study some forms of logically valid inference: inferences in which conclusions follow from premises by logic alone. We will develop ways to formally prove that a conclusion follows logically from premises. Additionally, the symbolic language we develop in 31 is adequate to capture a substantial part of English, and we will practice translating English sentences into our symbolic language. Thus, this class also aims to provide skills for analyzing claims and arguments in everyday life. This course will also provide important background skills for any field that relies on exact reasoning or abstract argumentation. Our course will cover sentential logic and monadic predicate logic.

Logic 2010
We will use a program, developed at UCLA, called Logic2010, for all assignments and exams. The program can be downloaded for free at https://logiclx.humnet.ucla.edu/. Installation and use of the program will be fully explained at the beginning of the course.

Textbook
The required (free) textbook will be An Exposition of Symbolic Logic by Terry Parsons. We will cover Chapters 1 through 3 in this course. It is available on the course webpage, and through the Logic2010 program.

I am happy to recommend various texts for students wishing to learn the material more deeply, or from the perspective of a different field (such as computer science or linguistics).

Grading
30% Homework
30% Midterm exam
40% Final exam
Homework
After each lecture, an assignment will be posted on the assignments page. These assignments will be due 10 minutes before the beginning of the next lecture. Your answers are submitted to our Logic2010 server. Solutions must be submitted via the program.
This course is cumulative; later material builds essentially on earlier material. Hence, I advise that you keep up with the homework from the beginning. One advantage of the software is that it gives you the ability to check your answers, and receive immediate feedback. You may check your answers an indefinite number of times before submitting, without penalty.

Late Policy
Problems submitted late receive at most 70% credit. To receive any credit, a problem must be submitted within one week of its original due date.

Exams
There will be one midterm and one final in this course. Both exams will be taken by hand, in class.

Accessibility
Students needing academic accommodations based on a disability should contact the Center for Accessible Education (CAE) at 310-825-1501 or in person at Murphy Hall A255. Where possible, students should contact CAE within the first two weeks of the term, as reasonable notice is required to coordinate accommodations.

Academic Integrity
Students are expected to know and to follow the university’s guidelines for academic honesty. Academic misconduct can occur in a variety of ways, including (but not limited to) cheating, fabrication, and plagiarism. When in doubt about whether some academic practice is acceptable, ask your instructor for assistance. Always err on the side of caution. Any suspected violation of university policy regarding academic conduct will be reported directly to the Office of the Dean of Students, without exception. UCLA’s policies on academic and intellectual integrity can be found at:
• https://www.deanofstudents.ucla.edu/studentconductcode
• https://www.deanofstudents.ucla.edu/Academic-Integrity

Schedule
Week 1
6/23: Introduction to logic and Logic2010, basic elements of propositional logic
  • Read: Terry Textbook Chapter 0
  • Homework: Assignment 1a and 1b due 6/25 at 10:30am

6/25: Symbolization, truth tables
• Read: Terry Textbook Chapter 1 Sections 1-3; Chapter 2 Sections 1-3, 10
• Homework: Assignment 2 due 6/30 at 10:30am

Week 2

6/30: Natural deduction, inference rules
• Read: Terry Textbook Chapter 1 Sections 4-8; Chapter 2 Sections 4-5
• Homework: Assignment 3 due 7/2 at 10:30am

7/2: Derivation strategies
• Read: Terry Textbook Chapter 1 Sections 9-12; Chapter 2 Sections 6-9
• Homework: Assignment 4 due 7/7 at 10:30am

Week 3

7/7: Review
• Optional Practice Midterm posted to assignments

7/9: Midterm Exam

Week 4

7/14: Intro to predicate logic, symbolization in our new language
• Read: Terry Textbook Chapter 3 Sections 1-5
• Homework: Assignment 5 due 7/16 at 10:30am

7/16: Quantifiers, new inference rules
• Read: Terry Textbook Chapter 3 Sections 6-9
• Homework: Assignment 6 due 7/21 at 10:30am

Week 5

7/21: Derivation strategies
• No reading
• Homework: Assignment 7 due 7/23 at 10:30am

7/23: Invalidities
• Reading: Terry Textbook Chapter 3 Sections 10-11
• Homework: Assignment 8 due 7/28 at 10:30am

Week 6

7/28: Review

7/30: Final Exam