

Introduction to Logic (Lower Division)

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Course Description:

We will study formal logic, focusing on the use of a symbolic logic and a formal system of derivation. In this class, we will cover the basics: sentential logic and quantification theory. No prior knowledge of mathematics or philosophy is required.

Logic is not especially hard to learn, but it can only be mastered through practice. In this, you will get a lot of help. Homeworks will be completed using a computer program, LOGIC 2010, which was designed to accompany our textbook. The program will tell you when you make a mistake, and sometimes it will offer hints and suggestions. You will thus be able to work on a problem until you get it right, and then submit your work.

Course Requirements:

Students are expected to regularly attend lectures and sections. Homework will be assigned at the end of each meeting, for a total of 27 homeworks. In addition, each student is expected to write four exams: three midterms and a final exam. The exams are scheduled as follows:

1st Midterm: 2/7, during regular meeting times.

2nd Midterm: 2/28, during regular meeting times.

3rd Midterm: 4/6, during regular meeting times.

Final exam: 5/9, from 1:00 to 3:00.

Books and Software

We will be using the book *An Introduction to Symbolic Logic*, by Terence Parsons. This book is available online for free at:

[http://www.humnet.ucla.edu/humnet/phil/faculty/tparsons/Logic Text](http://www.humnet.ucla.edu/humnet/phil/faculty/tparsons/Logic%20Text)

The textbook is designed to be used along with the UCLA Logic2010 logic program, and we will be using it – for lectures and assignments. The download page for the program can be found at:

<http://logic2k.humnet.ucla.edu/download.html>.

There are separate packages for Windows and Mac OS X.

Course Topics:

The schedule is subject to change. Revisions will be announced in class and posted on the course website.

Week 1	1/10	Introduction
	1/12	Ch. 1: Sentential Logic with “if” and “not”: 1. 1 – Symbolic Notation; 1. 2 – Meanings of the Symbolic Notation
Week 2	1/17	No class, MLK Day
	1/19	1. 3 – Symbolization: Translating Complex Sentences Into Symbolic Notation; 1. 4 – Rules
Week 3	1/24	1. 5 – Direct Derivations; 1. 6 – Conditional Derivations; 1. 7 – Indirect Derivations; 1. 8 – Subderivations
	1/26	1. 9 – Shortcuts in Derivations; 1. 10 – Strategy Hints for Derivations
Week 4	1/31	Advanced Software training: “Brief Strategic Advice for Chapter 1” (“Advice” button in the Derivations module); “Examples” in the Symbolization module
	2/2	Ch. 2: Sentential Logic with ‘and’, ‘or’, ‘if-and-only-if’: 2. 1 – Symbolic Notation; 2. 2 – English Equivalents of the Connectives; 2. 3 – Complex Sentences
Week 5	2/7	Midterm 1 – Chapter 1
	2/9	2. 4 – Rules; 2. 5 – Some Derivations using Rules S (implication), ADJ (unction), Conditionals-to-Biconditional ; 2. 6 – Abbreviating Derivations
Week 6	2/14	2. 7 – Using Theorems as Rules; 2. 8 – Derived Rules; 2. 9 – Official Conditions for Derivations
	2/16	Advanced Software training: “Brief Strategic Advice for Chapter 2” (“Advice” button in the Derivations module); Review 2. 7 – 2. 9
Week 7	2/21	2. 10 – Truth Tables and Tautologies; 2. 10 – Tautological Implication
	2/23	Review
Week 8	2/28	Midterm 2 – Chapter 2
	3/2	Ch. 3: Individual constants, Predicates, Variables and Quantifiers: 3. 1 – Individual Constants and Predicates; 3. 2 – Quantifiers, Variables and Formulas
Week 9	3/7	3. 3 – Scope and Binding; 3. 4 – Meanings of the Quantifiers
	3/9	3. 5 – Symbolizing Sentences with Quantifiers

Spring Break – 3/14–3/16

Week 10	3/21	3. 6 – Derivations with Quantifiers; 3. 7 – Universal Derivations; 3. 8 – Some Derivations
	3/23	3. 9 – Derived Rules

Week 11	3/28	Advanced Software training: “Brief Strategic Advice for Chapter 3”; Review 3. 6 – 3. 9
	3/30	3. 10 – Invalidities
Week 12	4/4	Review
	4/6	Midterm 3 – Chapter 3
Week 13	4/11	Ch. 4: Many-Place Predicates: 4. 1 – Many-Place Predicates; 4. 2 – Symbolizing Sentences with Many-Place Predicates
	4/13	4. 3 – Derivations
Week 14	4/18	4. 4 – The Rule “Interchange of Equivalentents”; 4. 5 – Biconditional Derivations; 4. 6 – Sentences without Overlay of Quantifiers
	4/20	4. 7 – Prenex Normal Forms; 4. 8 – Some Theorems; Advanced Software training: “Brief Strategic Advice for Chapter 4”
Week 15	4/25	4. 9 – Showing Invalidity
	4/27	Final Review.