

# Phil 122A: Introduction to Propositional Logic

## Fall 2024

### Instructor:

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- + Office: MHP B5C

### Office Hours:

- + Tuesday 1-2pm
- + Thursday 1-2pm

If you have a conflict with the scheduled office hours, please email me to make an appointment for another time.

### Time and Place:

Tuesday, Thursday DMC 206 5-6:50pm

### Course Description:

When we reason deductively, we attempt to figure out what *logically follows* from what we already know.

When we argue, we attempt to convince others that something is the case. One way to do this is by showing that the thing we want to argue for *logically follows* from what the people we are arguing with already believe.

In both cases, there is this idea of a conclusion “logically following” from a bunch of premises. But what does it mean for a conclusion to “follow” from some premises? This idea of a conclusion “following from” some premises needs to be made more precise.

In this class, we will cover two ways of doing just that. On the first conception we cover, a conclusion follows from some premises when there is no way for the world to be such that the premises are true but the conclusion is false.

On the second conception we cover, a conclusion follows from some premises, when there is a special kind of *proof* from the premises to the conclusion.

### Goals:

By the end of the course, students will be able to...

- + Identify whether strings of symbols are sentences of propositional logic.
- + Provide formal representations of English language sentences in the language of propositional logic.

- + Use truth tables to determine whether arguments formulated in the language of propositional logic are valid.
- + Deploy a natural deduction system to construct a proof of a conclusion from certain premises in the language of propositional logic.

## Course Materials

I will use Brightspace to distribute some class materials such as the syllabus for the course.

## Course Requirements

### Quizzes

Your grade will be determined by your performance on three quizzes.

1. The first two quizzes will be take home quizzes.
  - The take home quizzes will only cover material not covered by any previous quiz.
2. The last quiz will be taken in class on the 8th of October.
  - The in-class quiz will be cumulative.
3. Your grade will either be the average of your performance on each quiz, or your performance on the in-class quiz, whichever is higher.

### Attendance and Participation

Attendance and participation is strongly encouraged. Though your grade is solely determined by your performance on the course's three quizzes, it will be difficult for you to do well on the quizzes if you don't attend and participate in class.

## Course Policies

### No Laptops Policy

- + The use of laptops during class is prohibited unless you have a very good reason (such as a medical reason) for having one out.

### Submission Policy

- + Unless an extension has been provided, take home quizzes are to be physically handed to me at the beginning of the class on the day that they are due.
- + Late work will not be accepted.

## Extension Policy

- + If you want an extension on your quiz, write me an email any time before the quiz is due and I will grant you an extension until the next class meeting, no questions asked.

If you:

- want an extension for a longer period of time,
- haven't asked for an extension prior to when your assignment was due but still want an extension, or
- have already asked for an extension, but want another one for the same assignment,

Then: write me an email or talk to me. In general if you have a good reason for needing an extension I will grant you one.

## Email Policy

- + When you email me, I will endeavor to respond within one business day of your email. You should feel free to send a reminder if I cannot manage to respond within that period.

What to do if you can't or don't make the final quiz on 10/8

- + The final quiz will be administered in class on the 8th of October. If you anticipate that you can't make it, please be sure to let me know in advance, and I will endeavor to set up a different time when you can complete the quiz.
- + If you fail to make it on the 8th of October for some unforeseen reason, write to me as soon as possible, and I will use my discretion to decide what to do.

## Grading Scale

A	95-100	B	83-86	C	73-76	D	63-66
A-	90-94	B-	80-82	C-	70-72	D-	60-62
B+	87-89	C+	77-79	D+	67-69	F	59 or below

## Tentative Schedule

Meeting Day	Topic	Note
8/27	Introduction	
8/29	Syntax of PL	

9/3	Translations	Quiz 1 assigned, due 9/10
9/5	Practice Day	
9/10	Computing Truth Values	Quiz 1 due at beginning of class
9/12	Semantic Validity	Quiz 2 assigned, due 9/19
9/17	Practice Day	
9/19	Basic Inference Rules	Quiz 2 due at beginning of class
9/24	Replacement Rules	
9/26	Conditional Proof and Indirect Proof	
10/1	No class	
10/3	Practice Day	
10/8	Quiz 3 in class	
10/10	No class: Fall recess	

## Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

Academic dishonesty has a far-reaching impact and is considered a serious offense against the university. Violations will result in a grade penalty, such as a failing grade on the assignment or in the course, and disciplinary action from the university itself, such as suspension or even expulsion.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment or what information requires citation and/or attribution.

## Statement on University Academic and Support Systems

### Students and Disability Accommodations:

- + USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at [osas.usc.edu](https://osas.usc.edu). You may contact OSAS at (213) 740-0776 or via email at [osasfrontdesk@usc.edu](mailto:osasfrontdesk@usc.edu).

### Student Financial Aid and Satisfactory Academic Progress:

- + To be eligible for certain kinds of financial aid, students are required to maintain Satisfactory Academic Progress (SAP) toward their degree objectives. Visit the [Financial Aid Office webpage](#) for [undergraduate](#)- and [graduate-level](#) SAP eligibility requirements and the appeals process.

### Support Systems:

- + [Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

- + [988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline consists of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

- + [Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

- + [Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

- + [Reporting Incidents of Bias or Harassment](#) - (213) 740-2500

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

- + [The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

- + [USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

- + [Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

- + [USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

- + [USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

- + [Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

- + [Occupational Therapy Faculty Practice](#) - (323) 442-2850 or [otfp@med.usc.edu](mailto:otfp@med.usc.edu)

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.