

PHI 251: Logic

Syracuse University, Spring 2025

Course Description

In a good deductive argument the conclusion *follows from* the premises. But what exactly does this “following from” involve? Logic aims to answer that question by giving a precise account of the relation of *logical consequence* that holds between the premises and conclusion of a valid argument. In this course we will begin by studying [Truth-Functional Logic](#), and then move on to the more complex system of [First-Order Logic](#). We will learn how to formally represent the logical structure of English arguments in each system, and then develop a semantics and a system of natural deduction to determine whether these formally represented arguments are valid. Upon completing the course students will be familiar with basic model- and proof-theoretic concepts and techniques, and be able to apply them to analyze and evaluate natural language arguments.

Contact Information

Michael Rieppel

Email: morieppe@syr.edu

Office Hours: W 2:15–3:15 (523 Hall of Languages) or by appointment

Teaching Assistants:

	Steven Alvarez	Jared Liebergen	Tong Pan
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Section Times:	F 9:30 & 10:35	Th 11:00 & 2:00	F 11:40 & 12:45
Office Hours:	F 11:40	Th 12:30	M 11:40

Logistics

Lectures are Mo/We 10:35 – 11:30 in room Marley 216. You are also enrolled in a separate discussion section with your TA that meets once per week (see above). Attendance in lectures and discussion sections is mandatory. Your primary contact person for this class is your TA. Problem sets, quizzes, and exams will be submitted to, and graded by, your TA.

Resources

The textbook for this course is [forallx@syr](#), the pdf is on Blackboard. (Note: there are many versions of the *forall x* textbook differing from each other in various ways. Be sure you are working with the *forallx@syr 2025 Edition*.) Problem sets, announcements, and other course resources will be posted on Blackboard. Make sure to regularly check your email!

Grades

- (i) Final Exam (35%)
- (ii) Midterm Exam (25%)
- (iii) Two symbolization tests (20%)

(iv) problem sets (10%)

(iv) Attendance and participation (10%)

Letter grades are based on the scale of 93+ = A, 90-92 = A-, 87-89 = B+, 83-86 = B, 80-82 = B- etc. There won't be any extra credit assignments.

Schedule

The following is a *tentative* schedule and subject to change as we proceed. Details about the evolution of the course will be announced in lecture. Note the exam dates, and *do not make travel arrangements that conflict with these!*

Week 1 1.13: What is Logic? [Ch. 1]

Week 2 1.20: What is Logic? Symbolization in TFL [Ch. 1, Ch. 2]

Week 3 1.27: Symbolization in TFL [Ch. 2]

Week 4 2.3: Semantics of TFL [Ch. 3]

Week 5 2.10: Semantics of TFL [Ch. 3]

Week 6 2.17: Natural Deduction for TFL [Ch. 4]

Week 7 2.24: Natural Deduction for TFL [Ch. 4]

Week 8 3.3: Natural Deduction for TFL [Ch. 4]

Week 9 3.10: *Spring Break!*

Midterm Exam: in class Wednesday March 19th

Week 10 3.17: Symbolization in FOL [Ch. 5]

Week 11 3.23: Symbolization in FOL [Ch. 6]

Week 12 3.31: Natural Deduction for FOL [Ch. 6]

Week 13 4.7: Natural Deduction for FOL [Ch. 6]

Week 14 4.14: Semantics of FOL [Ch. 7]

Week 15 4.21: Semantics of FOL [Ch. 7]

Final Exam: Thursday May 1st, 3-5pm

Course Policies

Academic Integrity

Don't cheat! It's unfair to your instructors and fellow students. Any established academic integrity violation may result in course failure, regardless of violation level. Using websites like Chegg or Course Hero to post assignment or exam questions, or obtain solutions, violates academic integrity expectations, as does the use of artificial intelligence to complete any assignment, quiz, or exam. For details on SU's academic integrity expectations and policies visit:

<http://class.syr.edu/academic-integrity/policy/>

All work submitted for **quizzes and exams** must be yours alone. Communicating about quiz or exam questions with anyone during the quiz or exam period violates academic integrity expectations.

Discussing **problem sets** with your TA, or me, or your classmates is fine. But the answers you submit *must have been written up by you individually and reflect your own understanding of the material*. Directly copying someone else's work counts as a violation of academic integrity.

You may **work in a group** on problem sets, and we'll give you two extra credit points on a given assignment if you do, subject to the following rules:

- Groups may have at most four members, and all must have the same TA. You must list your group members at the top of your assignment to receive group credit points.
- Each group member is expected to have worked independently on the problem set for at least one hour prior to meeting with the group. If someone in your group shows up without having done preliminary work, let them know that's not acceptable.
- Each group member has to write up and turn in their own individual assignment — what you turn in should demonstrate your own understanding of the material.

Electronic Devices

Phones and computers should be put away during class and the volume muted. If you use a tablet to take notes *by hand*, you may do so, but I expect you to use it *for that purpose only*. If a device becomes a distraction to you or those around you, you won't be allowed to use it anymore.

Extensions and Absences

Note the dates of the midterm exam and the final exam. Do not make plans that conflict with these exam dates. All students must take the exams at the scheduled time and date. To request an extension on an assignment you need to contact your TA at least *48 hours* before the assignment is due. Unexcused late work will not be accepted. If you expect to be absent from class for a religious observance, please notify me within the first two weeks of the semester.

Email Policy

I will do my best to reply to emails about brief administrative questions within a day (on week-days). For substantive inquiries, come see me during office hours or schedule an appointment.

Accommodations for Students with Disabilities

Syracuse University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. There may be aspects of the instruction or design of this course that result in barriers to your inclusion and full participation in this course. I invite any student to contact me to discuss strategies and/or accommodations (academic adjustments) that may be essential to your success and to collaborate with the [Center for Disability Resources \(CDR\)](#) in this process. Since accommodations may require early planning and generally are not provided retroactively, please contact the CDR as soon as possible.

Health

Mental health and overall well-being have a significant impact on academic success. It is important to develop skills and resources to effectively navigate stress, anxiety, depression and other mental health concerns. Please familiarize yourself with the range of resources the [Barnes Center](#) provides and seek out support for mental health concerns as needed. Counseling services are available 24/7, 365 days a year, at 315.443.8000, and I encourage you to explore the resources available through the [Wellness Leadership Institute](#).