

PHI 251: Logic

Syracuse University, Fall 2022

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 as well as 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

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Office Hours: Tu 3–5pm, 523 Hall of Languages

Teaching Assistants:

	Minseok Kim	Bertie Probyn
Email:	mkim66@syr.edu	bnprobyn@syr.edu
Discussion Times:	M 10:35 & 12:45	F 10:35 & 11:40
Office Hours:	Th 11–1 (in Byrd)	Th 11–1 (in Byrd)

Course Logistics

Lectures are Tu/Th 2:00 – 2:55pm in 107 Hall of Languages. You are also enrolled in a separate discussion section with a TA that meets once per week. Attendance in lectures and discussion sections is mandatory. Problem sets will be submitted to, and graded by, your TA.

Course Resources

The textbook for this course is *forallx@syr*. A pdf is available on Blackboard. I’d encourage you to also get a printed copy from the SU Bookstore that you can bring with you to lecture and discussion section, but you’re not required to do so. (Note: there are many versions of the *forall x* textbook floating around in print and online, all differing from each other in various ways. Be sure you are working with the *forallx@syr Fall 2022 Edition*.) Problem sets, handouts, announcements and other course resources will be posted on Blackboard. Make sure to regularly check your @syr email for course announcements.

Grades

- (i) Final Exam (35%)
- (ii) Midterm Exam (25%)
- (iii) Quizzes (20%), problem sets (15%), attendance/participation (5%)

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 (but note the exam dates). Details about the evolution of the course will be announced in lecture.

Week 1 8.30: What is Logic? [Ch. 1]

Week 2 9.6: Symbolization in TFL [Ch. 2]

Week 3 9.13: Symbolization in TFL [Ch. 2]

Week 4 9.20: Semantics of TFL [Ch. 3]

Week 5 9.27: Semantics of TFL [Ch. 3]

Week 6 10.4: Natural Deduction for TFL [Ch. 4]

Week 7 10.11: Natural Deduction for TFL [Ch. 4]

Week 8 10.18: Natural Deduction for TFL [Ch. 4]

Midterm Exam: October 25, in class

Week 9 10.27: Symbolization in FOL [Ch. 5]

Week 10 11.1: Symbolization in FOL [Ch. 6]

Week 11 11.8: Natural Deduction for FOL [Ch. 6]

Week 12 11.15: Natural Deduction for FOL [Ch. 6]

Week 13 11.22: *Thanksgiving Break!*

Week 14 11.29: Semantics of FOL [Ch. 7]

Week 15 12.6: Semantics of FOL [Ch. 7]

Final Exam: Fr Dec. 16, 8-10am

Course Policies

Academic Integrity

Do not cheat. 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 in this course. 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. Discussing or communicating about

quiz or exam questions with anyone during the quiz or exam period violates academic integrity expectations for this course.

Discussing **problem sets** with your TA, or me, or your classmates is fine. But the answers you submit for grading *must have been written up by you individually*. 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. 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*.

Disability Accommodations

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.

If you would like to discuss disability-accommodations or register with CDR, please visit their website at <https://disabilityresources.syr.edu>. Please call (315) 443-4498 or email disabilityresources@syr.edu for more detailed information.

CDR is responsible for coordinating disability-related academic accommodations and will work with the student to develop an access plan. Since academic accommodations may require early planning and generally are not provided retroactively, please contact CDR as soon as possible to begin this process.

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.

Electronic Devices

Phones, computers, tablets etc. should be put away during class time 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*.

Students who have a particular need to use technology are permitted to do so after speaking with me privately to make that arrangement. We will discuss the parameters of its use. Failure to use technology to appropriately support student learning of this course material may result in loss of

permission for its use.

Email Policy

I will do my best to reply to emails about *brief* class-related questions within a day or two on weekdays. For substantive inquiries, please come see me during office hours or schedule an appointment.