Course Description

In a good deductive argument the conclusion follows from the premises. But what exactly does this involve? Logic aims to answer that question by giving a mathematically precise account of the relation of logical consequence. In this course we will study three increasingly complex systems of logic: sentential logic, monadic predicate logic, and first-order logic. We will learn how to represent the logical forms of English arguments, and then develop a semantics as well as a system of natural deduction in each system to determine the validity of arguments given such formal representations. 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

Prof. Michael Rieppel
Email: morieppe@syr.edu
Office Hours\(^1\): Mo 3:30–5:30, 523 Hall of Languages

Teaching Assistants:

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<tr>
<th>Rose Bell</th>
<th>Ben Cook</th>
<th>Stacy Kohls</th>
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<td><a href="mailto:rabell@syr.edu">rabell@syr.edu</a></td>
<td><a href="mailto:bkcook@syr.edu">bkcook@syr.edu</a></td>
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<td>Th 11:00 and 2:00</td>
<td>Fr 11:40 and 12:45</td>
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Lectures are M/W 2:15–3:10 in the HBC Gifford Auditorium. You are also enrolled in a discussion section that meets once per week with a TA. Attendance in sections is mandatory.

Course Resources

Your primary printed resource in this class will be a course reader containing the lecture notes, available from the SU Bookstore located in the Schine Student Center. Bring this reader with you to lecture and sections. Additional course handouts will be posted on Blackboard.

As a supplementary resource, I recommend Graeme Forbes textbook *Modern Logic* (Oxford University Press, 1994). My lectures will (with some exceptions) follow the structure and content of this

\(^1\) If you need to speak with me or your TA but can’t make our regular office hour times, email us to arrange an appointment at an alternative time.
book. You can pick it up at the SU Bookstore, and PDFs of the first three chapters are freely available on the author's website at http://spot.colorado.edu/~forbesg/modlogtoc.html

Grades

(i) Final Exam (35%)
(ii) Midterm Exam (25%)
(iii) Two Quizzes (10% each)
(iv) Problem sets, section attendance and participation (20%)

There will be no 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. (For those who have Forbes’ Modern Logic, I’ve indicated the corresponding sections in the textbook where applicable.)

Week 1 — 1.17

• What is Logic? Validity and soundness.

Week 2 — 1.22, 1.24

• What is Logic? Validity and soundness.
• Symbolization in SL. [Forbes Ch. 2]

Week 3 — 1.29, 1.31

• Symbolization in SL. [Forbes Ch. 2]

Week 4 — 2.5, 2.7

• Semantics in SL. [Forbes Ch. 3]

Week 5 — 2.12, 2.14

• Semantics in SL. [Forbes Ch. 3]

Week 6 — 2.19, 2.21

• Natural deduction in SL.

Week 7 — 2.26, 2.28
• Natural deduction in SL.

**Week 8** — 3.5, 3.7

• Natural deduction in SL.
• **Midterm Exam, Wednesday March 7, in class**

**Week 9** — 3.12, 3.14

*Spring Break, No Classes!* 

**Week 10** — 3.19, 3.21

• Symbolization in MPL [Forbes Ch. 5]

**Week 11** — 3.26, 3.28

• Semantics in MPL. [Forbes Ch. 6]

**Week 12** — 4.2, 4.4

• Natural deduction in MPL.

**Week 13** — 4.9, 4.11

• Natural deduction in MPL.

**Week 14** — 4.16, 4.18

• Symbolization in FOL. [Forbes Ch. 7]

**Week 15** — 4.23, 4.25

• Semantics in FOL. [Forbes Ch. 8]

**Week 16** — 4.30

• Semantics in FOL. [Forbes Ch. 8]

**Final Exam** — Thursday May 3, 12:45–2:45, HBC Gifford Auditorium
Course Policies

Academic Integrity

Syracuse University’s Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the policy and know that it is their responsibility to learn about course specific expectations, as well as about university policy. For details visit:


Working on problem sets collaboratively with others is fine, and indeed encouraged. However, any work that you submit for grading must have been written up by you individually. Directly copying someone else’s work or relying on detailed notes produced in collaboration with others is considered a violation of academic integrity.

Accommodations for Students with Disabilities

If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS) http://disabilityservices.syr.edu for an appointment to discuss your needs. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

Please provide me with a current accommodation letter from ODS if you have one so that I am aware of your accommodation.

Extensions and Absences

Please note the dates of the midterm exam and the final exam. Do not make travel plans at the end of the semester that conflict with the final exam date! You must take the final exam at the scheduled time and date. If you have a scheduling conflict for the midterm due to a prior commitment, contact me or your TA in the first two weeks of class discuss potential alternative arrangements.

To request an extension on an assignment you need to contact your TA at least three days before the due date. 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

Please do not use electronic devices during lecture. Phones, tablets, computers etc. should be put away and the volume muted. If you think you need to use an electronic device during lecture in order to succeed in this course, come speak to me individually.

Email Policy

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