"Hence it is that bad reasoning as well as good reasoning is possible; and this fact is the foundation of the practical side of logic." Charles Sanders Peirce, *Four Methods of Settling Opinion*.

**Philosophy 013A: Introduction to Logic**  
University of Vermont  
Spring 2012  
MWF 12:50pm–1:40pm, Terrill 108

*Professor: Randall Harp  
Teaching Assistant: Kristen Clark  
Office: 70 S Williams room 203  
Office Hours: (RH) MW 4:00–5:00, and by appointment (KC) TR 1:00–2:00, 70 South Williams 109  
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Prerequisites: None  
Course Website: On Blackboard (bb.uvm.edu)

**Course Description:** What is an argument? What distinguishes a good argument from a bad one? Are there conceptual tools we can use to produce, understand, and evaluate arguments? There are the questions which Logic seeks to answer. In this course, we will learn the basics of first-order logic (which includes propositional logic and predicate logic): we will learn how to convert natural-language arguments into the language of first-order logic, and we will learn how to apply the formal rules of first-order logic so as to assess the validity of arguments.

**Textbook and Course Materials:** This course uses Barker-Plummer, Barwise and Etchemendy’s *Language, Proof, and Logic*. This textbook comes with software which we will use for this course, both in order to understand the material and to submit homework.

Purchasing the textbook grants you access to an automated grading service. **You must have a new copy of the textbook to get this access; please do not purchase a used copy of the textbook.** If you purchase a used textbook, you cannot access the online grading service and you will not be able to submit your homework properly!

You will need to have access to a computer in order to complete your
homework assignments for this course. The software runs on Mac OS, Windows, and Linux platforms. You will also need internet access in order to submit your assignments to the grading server.

If you have any questions or concerns about the software component of this course, please contact me as soon as possible.

Updates to the software are available at lpl.stanford.edu. You can also find hints and partial solutions to selected exercises at the LPL website.

Evaluation: There are three components to your grade for this course:

- **Homework (60%)**: There will be thirteen homework assignments, each due on Monday. Homework assignments will be posted on blackboard. Each homework assignment is worth 5% of your final grade, and I will drop your one lowest homework grade. **Late homework will not be accepted. Any homework submitted after 12:50pm (i.e. class time) the day the homework is due is late!**

- **Midterm (10%)**: There will be a midterm exam due on Monday, March 28. Part of the midterm will be take-home and due in class, and part of the midterm will be taken in-class.

- **Final exam (30%)**: There will be an in-class final exam on Monday, May 7 from 1:30pm–4:15pm in the normal lecture room. The final exam will be closed book and closed notes.

- **Homework Resubmission**: You may resubmit up to two homework problem sets by the last week of classes. Resubmitted homework will receive a penalty of 10% of the maximum weekly grade, in addition to any errors in your homework (i.e. you may receive a maximum of 90% on each resubmitted homework).

**Statement on Academic Honesty:** I expect that we are all here to learn from one another. To this end, I ask that all students abide by the Code of Student Rights and Responsibilities as well as the Code of Academic Integrity. If you have any questions about whether your work violates the Code of Academic Integrity, please ask.

**Statement on Academic Support and Disability Accommodations:** Academic Support Programs offers several programs to provide academic support to students; their website is www.uvm.edu/aspprogs/. In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact ACCESS, the office of Disability Services on campus. ACCESS works with students to create reasonable and appropriate accommodations via an accommodation letter to their professors as early as possible each semester. Contact ACCESS: A170 Living/Learning Center; 802-656-7753; access@uvm.edu; or www.uvm.edu/access.
Schedule of Assigned Readings

Week 1: Introduction

Jan 18–20 No reading assigned

Week 2: Atomic Sentences

Jan 23–27 Read: LPL 1.1–1.5

Week 3: The Logic of Atomic Sentences

Jan 30–Feb 3 Read: LPL 2.1–2.5

Week 4: The Boolean Connectives

Feb 6–10 Read: LPL 3.1–3.8

Week 5: The Logic of Boolean Connectives

Feb 13–17 Read: LPL 4.1–4.6

Week 6: Methods of Proof for Boolean Logic

Feb 20 [No class]
Feb 22–24 Read: LPL 5.1–5.4

Week 7: Formal Proofs and Boolean Logic

Feb 27–Mar 2 Read: LPL 6.1–6.6

Week 8: Illogicality Run Amok

Mar 5–Mar 9 [Spring Break]

Week 9: Conditionals

Mar 12–16 Read: LPL 7.1–7.5

Week 10: The Logic of Conditionals

Mar 19–23 Read: LPL 8.1–8.4

Week 11: Introduction to Quantification

Mar 26–Mar 30 Read: LPL 9.1–9.6

Week 12: The Logic of Quantification

Apr 2–6 Read: LPL 10.1–10.5
Week 13: Multiple Quantifiers
Apr 9–13 Read: LPL 11.1–11.7

Week 14: Methods of Proof for Quantifiers
Apr 16–20 Read: LPL 12.1–12.4

Week 15: Formal Proofs and Quantifiers
Apr 23–27 Read: LPL 13.1–13.4

Week 16: Wrap-Up
Apr 30–May 2 No reading assigned

May 7 Final Exam
1:30pm–4:15pm
Terril 108