INTRODUCTION TO LOGIC (1) Syllabus

PHIL 1155 FALL 2012 MWF 9:00-9:50 ADM 318

Dr. Seth Holtzman

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hours: **MWF** 2-5; **T** 11-12 if no meeting**; & by appt**. **email**: sholtzma@catawba.edu

Course summary:

This course provides an introduction to the subject of formal reasoning. We will study modern formal logic, usually called mathematical or symbolic logic. This is a system for understanding the formal structure of our thinking (yes, our thought is structured!), much the way mathematics is a system for understanding the formal structure of our counting and measuring. Think how difficult it is to divide 3974 candy bars into 297.43 groups--manipulating the bars by hand concretely. Work out that same problem abstractly, using our formal mathematical symbols, and it becomes an easy (if tedious) long division problem. Logic is in some ways similar. A formal system helps us understand our reasoning and even helps us reason--in ways that would be extremely difficult if not impossible if we lacked the symbolic system to think with.

Class format will be mostly lecture. We will work some problems on the board. You will have frequent reading assignments and homework.

This course meets the Humanities distribution requirement, but you may use only one of PHIL 1155 or 1166 to meet this requirement.

Expected learning outcome *Successful students will demonstrate*:	**Means of Assessment** *By being successful on:*
Awareness of what the subject of deductive logic is	Homework, quizzes and tests, final exam
Understanding of the truth-functional connectives	Homework, quizzes and tests, final exam
Ability to use proof method to test arguments for validity	Homework, quizzes and tests, final exam
Ability to use the truth table method to test arguments for validity/invalidity	Homework, quizzes and tests, final exam
Ability to use the truth table method to determine the logic of statements and of relationships	Homework, quizzes and tests, final exam
Improved logical sensitivity and improved ability to reason	Homework, quizzes and tests, final exam

Requirements and grading:

1. Attendance is required; you cannot learn the course on your own. In class I will sometimes elicit your grasp of the readings, lecture, and course. You need to be present, mentally active and prepared, so that you can participate in class--working problems on the board, answering questions, raising relevant issues. Also, some homework problems will be checked/graded. I do not mind if you work on homework with your colleagues. But you will not profit from the homework if you do not at least think it through for yourself. I will not accept late homework assignments; do not turn them in. Those assignments to be turned in are due at the beginning of class. **TOTAL of homework/participation: 10% of your grade**

2) Three pop quizzes, **each 5%** of your grade. None will not take the entire period and each will test a limited amount of material. NO makeup quizzes. **TOTAL of quizzes: 15% of your grade**

3) Two scheduled tests, **each 25%** of your grade. Tentative dates: Oct. 5th and Nov. 2nd. Each will test a substantial amount of material. If you miss an exam, you must contact me immediately. If you know you have to miss it, contact me beforehand. We will have a serious talk; I do not guarantee that you will be permitted a make-up exam. **TOTAL of tests: 50% of your grade**

4) A comprehensive final exam, **25% of your grade**. You cannot receive a LOWER grade for the course than you receive on the final exam, IF AND ONLY IF you have taken all tests AND at least two quizzes. (Grade drops due to absences still apply.) Exam date: *Thursday, Dec 6th, 8:00 - 11:00am*; you may use scratch paper.

The grades mean:

"A"	Superior mastery
"B"	Good mastery
"C"	Satisfactory achievement
"D"	Less than satisfactory achievement
"F"	Unsatisfactory achievement; Failure to achieve minimum competency

I will employ plus/minus grades, but A+ is not a possible final grade for the course:

A+ 97-100	B+ 87-89	C+ 77-79	D+ 67-69
A 93-96	B 83-86	C 73-76	D 63-66
A- 90-92	B- 80-82	C- 70-72	D- 60-62

As indicated, grades measure achievement.

Text:

Howard Pospesel's Introduction to Logic: PROPOSITIONAL LOGIC (revised 3rd edition). It comes with a very helpful CD at the end containing a Logic program that allows you to check your own homework. You should use this easy program; see appendix 5 in the book for help.

Reading, taking notes, and homework:

Read the assigned passages carefully. Some of the material is easy and accessible on your first attempt. Other assignments are taxing and will require multiple readings. I advise you to take notes on what you read, since I will lecture on only those parts I consider essential for us to cover in class. You are responsible for everything in the assigned readings, whether or not it is covered in class. Lectures can cover material not in the readings; this is another reason to attend.

Most students take very sketchy notes. Perhaps they think that they cannot take notes and listen at once; perhaps they do not appreciate the value of taking notes. Learn to write while you listen; it not only can be done, it enhances your grasp of what is being said. Take as many notes as you can. Your notes are an invaluable resource both for understanding the course and for the final exam.

Do all assigned homework, whether or not you are to turn it in. Work out the logic problems you are presented with in class or in the book. Beginning logic students typically suffer from what we call the "eye-hand disease". Those suffering from this ailment see a problem worked out for them in class or the book and sincerely believe that they understand how to do that kind of problem simply by seeing it done. Then test time arrives (or graded homework is returned), and it is clear that they didn't really understand--though they thought they had. WARNING: you often will not truly grasp a logic exercise until you do it **by hand**. Practice! If you get behind, even with your best efforts, see me for extra help.

Absences and violations:

To keep attendance--and to learn your names--I will institute a seating chart in the first few classes. Choose a permanent seat; contact me if you need to change it. I will use the chart to check attendance promptly at the start of class. If late, you might be counted absent; if late enough, you do count as absent. Avoid tardiness; if you are often late (without good reason), I will choose to count you as absent. Sleeping and other forms of mental disconnect in class count as an absence. When absent, you are responsible for missed assignments and classroom material; get notes from a classmate, and see me if you still have questions.

No absences are excused. After 3 penalty-free absences, which you needn't explain to me, further absences lower your final grade: for 4-5 total absences, minus 1/3 grade; for 6-8, minus 2/3 grade; for 9-10, minus 1 grade. Missing class right before or after a vacation counts as a double absence. Over 10 absences for other than an emergency is automatic grounds for an "F" (or an "I" in some cases), regardless of your grades. Tell me if you are having to miss class due to an emergency.

Respect the people and ideas in our class. I don't care if you bring a drink or sport a hat or wear rags. I care that you pay attention to me and to others (so, no cell phones or activated pagers/beepers/watches), that you are on time and ready to work, that you bring a positive attitude to class even if you are struggling, and that you contribute positively to class.

Cheating, working with others to complete assignments (unless this is allowed), and falsifying an emergency to skip class or an assignment, all violate the Honor Code. So does plagiarism, employing a writer's ideas (and words) without giving due credit. See me for help about borrowing someone's ideas or words for your use. No electronic devices are allowed during an exam, except for simple watches, computers (if specifically allowed), and any needed medical devices. Specifically, cell phones and any devices that allow for texting are prohibited. Violation of this policy can result in an "F" for that exam.

Schedule of Readings:

1st week ***Aug 15, 17***

Orientation: Syllabus
Judging Arguments: handout

2nd week ***Aug 20, 22, 24***

Arguments
Pospesel Chapter 1-- "Logic", pp.1-8

3rd week ***Aug 27, 29, 31***

Proofs
Pospesel Chapter 2-- "If"

4th week ***Sept 3, 5, 7***

VACATION on Monday
Proofs
Pospesel Chapter 2-- "If" (continued)

5th week ***Sept 10, 12, 14***

Proofs
Pospesel Chapter 2-- "If" (continued)
Pospesel Chapter 3--"And"

6th week ***Sept 17, 19, 21***

Proofs

Pospesel Chapter 3--"And" (continued)
Pospesel: Chapter 4: "If (Again)"

7th week ***Sept 24, 26, 28***

Proofs

Pospesel: Chapter 4: "If (Again)" (continued)

8th week ***Oct 1, 3, 5***

Proofs

Pospesel: Chapter 4: "If (Again)" (continued)

TEST #1

9th week ***Oct 8, 10, 12***

Review TEST #1

Proofs

Pospesel: Chapter 5: "Not"

10th week ***Oct 15, 17, 19***

VACATION on Monday

Proofs

Pospesel: Chapter 5: "Not" (continued)

11th week ***Oct 22, 24, 26***

Proofs

Pospesel: Chapter 5: "Not" (continued)
Pospesel: Chapter 6: "Iff"

12th week ***Oct 29, 31, Nov 2***

Proofs

Pospesel: Chapter 6: "Iff" (continued)

TEST #2

13th week ***Nov 5, 7, 9***

Review Test #2

Proofs

Pospesel: Chapter 7: "Or"

14th week ***Nov 12, 14, 16***

Proofs

Pospesel: Chapter 7: "Or" (continued)

Truth Tables

Pospesel: Chapter 10: "Truth Tables"

15th week ***Nov 19, 21, 23***

Truth Tables

Pospesel: Chapter 10: "Truth Tables" (Cont.)

VACATION ON WEDNESDAY & FRIDAY

16th week ***Nov 26, 28, 30***

Truth Tables: The Logic of Statements

Pospesel: Chapter 12: "Statements"

Truth Tables: The Logic of Relationships

Pospesel: Chapter 13: "Logical Relations"

FINAL EXAM: **Thursday, Dec 6th , 8:00-1100am**