

**PHIL 1102: Logic
Stoner/Spring 2016**

Thursdays, 6 - 8:50, C2044

Instructor

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Office hour: Thursdays, 4:00 – 5:00

Course Description

Logic is the study of the structure of arguments. This course uses the tools of symbolic logic to examine basic logical concepts like truth, consistency, and validity. It introduces two artificial languages: truth-functional logic and predicate logic, and focuses especially on formal proofs in truth-functional logic. These analytical skills support work in a range of activities that require clear, careful, step-by-step thinking.

Required Text

Introduction to Logic by Paul Herrick, Oxford University Press 2013.

Course Requirements

Homework: 200 points (from your 10 best scores out of 13 assignments)

Quizzes: 200 points (from your 10 best scores out of 12 quizzes)

Midterm: 200 points

Final: 300 points

Participation: 100 points

Homework: Most weeks you will turn in a homework assignment at the beginning of class. These assignments may not be made up or turned in late. Each week I will choose two problems from the assigned set to grade. Your homework score for the semester will be the sum of your ten best scores out of thirteen total assignments.

Quizzes: Most classes will begin with a brief review and a quiz covering the previous week's content. Quizzes may not be made up or taken late. Your quiz score for the semester will be the sum of your ten best scores out of twelve total quizzes.

Exams: Two exams—a midterm and a final—constitute the biggest portion of your course grade. These exams include a variety of questions, including true/false, multiple-choice, translation, truth tables, and derivations. Be sure to contact me ahead of time if you need alternative arrangements, or if you must miss an exam day. If you do not contact me ahead of time, exams can be made up, at a penalty of one letter-grade per day late.

Participation: Your active participation is important, both for your own success and for the success of

the course. Don't hesitate to ask questions if you are confused. (If you're confused, it's all but certain other people are, too.) Don't hesitate to help me answer questions other students have. In small groups, ask for help when you need it and, even more important, offer help when you can.

Grade Table

At the end of the semester, I will total up all your points and assign letter grades based on this table. These thresholds indicate firm cut-off points. For example, a total score of 799 points is a C, while a total score of 800 is a B.

Letter Grade	Point threshold
A	900
B	800
C	700
D	600
F	--

Course Calendar

Jan 14: Introduction, arguments in the wild, common fallacies

Jan 21: Statements and arguments: truth, validity, and soundness

Textbook material covered in class: p. 13-27, chapters 3 and 4
Homework due in class: the problem set handed out last class
Quiz: identifying common fallacies

Jan 28: Translating English into truth-functional logic (TL)

Textbook material covered in class: chapters 10 and 12
Homework due in class: exercise sets 4.3, 4.4, and 4.6
Quiz: validity and soundness

Feb 4: More translations, understanding the structure of TL formulas

Textbook material covered in class: chapter 13
Homework due in class: exercise sets 10.3, 10.4, 12.3, 12.4, 12.6
Quiz: translations

Feb 11: Using truth tables to determine the truth-functional status of TL formulas

Textbook material covered in class: chapters 14 and 15
Homework due: exercise sets 12.2, 12.5, 13.1, 13.2, and 13.3
Quiz: translations

Feb 18: Using truth tables to determine the truth-functional validity of arguments in TL

Textbook material covered in class: chapters 16 and 17
Homework due: exercise sets 14.2, 14.3, 15.1, and 15.2

Quiz: truth tables for formulas

Feb 25: Review and midterm exam

Homework due: exercise sets 16.1 and 16.2, 17.1, 17.4

March 3: No class (Ian is presenting a paper at a philosophy conference in Chicago)

March 10: No class (Spring Break)

March 17: Natural deduction proofs in TL: MP, MT, DS, HS

Textbook material covered in class: chapter 18

March 24: ND proofs in TL: Simp, Conj, Add, CD

Textbook material covered in class: chapter 19

Homework due: exercise sets 18.1 and 18.2

Quiz: ND proofs using the first four inference rules

March 31: ND proofs in TL: complex inference rules

Textbook material covered in class: chapter 21

Homework due: exercise sets 19.1 and 19.2

Quiz: ND proofs using all eight inference rules

April 7: ND proofs in TL: replacement rules

Textbook material covered in class: chapter 20

Homework due: exercise sets 21.1, 21.3 (skip #5 and #8), and 21.4 numbers 1-4

Quiz: indirect and conditional ND proofs

April 14: ND proofs in TL: strategies, things to do with derivations

Textbook material covered in class: chapter 22

Homework due: exercise set 20.4, numbers 1-30.

Quiz: ND proofs with replacement rules

April 21: Translating English into predicate logic (PL)

Textbook material covered in class: chapter 23 and 24

Homework due: exercise set 22.1

Quiz: ND proofs

April 28: PL Interpretations

Textbook material covered in class: chapter 27

Homework due: exercise sets 23.2, 23.3 and 23.4

Quiz: PL translations

May 5: Conceptual review and practice for the final exam

Homework due: exercise set 27.1, and 10 problems of your own choosing from the final exam review packet (tip: pick the 10 hardest you can find)

Quiz: PL counterexamples

May 12: Final Exam

Course Policies

Accessibility. I want this course (in both content and assessment) to be accessible to all students regardless of impairments and disabilities. If you have a disability that I can better accommodate, please consider meeting with me to talk about it. Improvements to accessibility are improvements to the course, and students in future semesters will owe you a debt of gratitude (that will, of course, go unpaid) for taking the time to give me your feedback on accessibility.

Testing accommodations require you to register with the Office for Students with Disabilities. Reach them by phone at 952-358-8625 or email them at osd@normandale.edu

Attendance: Attendance is mandatory. One unexcused absence is OK. Each additional unexcused absence will incur a penalty of 50 points.

Electronic devices: Do not use any electronics in the classroom, please. No phones, no laptops, no tablets, no nothing. If you have a reason for bringing a device to class (if you have a sick kid at home who might need to call you, for example) please let me know before class starts.

Extra credit: There will be no extra credit. Keep up with the course as it happens!

Academic honesty: I encourage you to work together on your homework assignments, but *copying* is not allowed. You must write out your own answers, and they should reflect your own understanding of the problem, not someone else's. If I discover that you are copying someone else's work without understanding it (for example, if you are unable to explain why you approached a homework problem in the way you did) I will record a zero for your entire homework score, which is 20% of your total course grade. The midterm and final are in-class exams, and collaboration is not allowed. If I discover you have cheated on an exam (for example, if you smuggle in notes) I will record a zero for that exam.

Time: This is a 3-credit course. Expect to budget about 6 hours each week for homework.

Patience: People learn logic at different paces. Some of you will “click” with symbolic logic and pick up the material relatively easily. Some of you will have to work hard most or all semester before it “clicks.” Be patient with those who pick up the material faster or slower than you.