

Introduction to Logic – Critical Reasoning

Instructor

Matt Knachel, knachel@uwm.edu.
Phone: (414) 817 - 2421
Office hours by appointment via Zoom.

Text

Knachel, *Fundamental Methods of Logic* [free PDF [here](#); hardcopy at [lulu.com](https://www.lulu.com)]

Course Objectives

This is a general introductory course in logic—the study of what distinguishes correct from incorrect reasoning. We will survey a wide variety of reasoning types, and a correspondingly wide variety of principles and techniques for evaluating them. In so doing, we will aim to develop the following skills:

- a) Recognizing arguments and analyzing their structure
- b) Identifying common logical fallacies
- c) Applying formal techniques to evaluate deductive reasoning
- d) Using abstract formal schemata to represent common inductive reasoning patterns
- e) Employing quantitative tools to evaluate probabilistic reasoning and statistical reasoning

Grading

Homework Assignments	-	20%
Quizzes	-	20%
Exams	-	60%

There will also be opportunities to earn extra credit points.

One final requirement for the course: to be considered as having completed the class, you must fill out an evaluation survey (if I don't make it mandatory, nobody fills it out). It will be made available near the end of the term. The survey is completely anonymous, so please be expansive and frank in your comments.

Here are some more details about the evaluative components of the course:

Homework Assignments. These are the exercises from the textbook. Since they are for practice, they will not be graded for correctness; rather, they will be graded for effort. That is, if you make a good-faith effort to attempt all of the homework problems, you will get full credit for the assignment (partial completion earns partial credit). We grade these on a 10-point scale. A score of 10 means you tried all the homework problems; a lower score means you skipped some. You will upload homework assignments to Canvas. Documents need not be typed; scans or pictures of handwritten work are just fine. [Note:

if you use an Apple device, please adjust the settings so that your pictures or documents are universal formats like JPG or PDF; many computers can't read Apple's default file formats like HEIC or .pages.] We will drop your lowest homework score when calculating your grades.

Quizzes. These are follow-ups to the homework exercises. The questions are multiple-choice, but they cover the same material as their corresponding homework assignments. The basic idea is this: you try the homework exercises and maybe struggle a bit; that's OK, though, since they're graded on effort, not correctness; you learn from any mistakes you made on those (consulting the answer key, about which more below), then you're ready to consolidate what you've learned with a follow-up quiz. All the quizzes are collectively only worth 20% of your grade, though, so it's still pretty low-stakes. The important thing is to learn from your mistakes to prepare yourself for the higher-stakes exams. The quizzes are short, with ten questions each; they have a 2-hour time limit. We will drop your lowest quiz score when calculating your grades.

Exams. There are 3 exams—one for each third of the course, which we will call “Modules”. Each Module covers two chapters of the textbook and has certain homework assignments and quizzes associated with it. Module 1 will culminate with Exam 1, which will cover the material from Chapters 1 and 2 in the textbook, with homework assignments 1 – 3 and quizzes 1 – 3 serving as preparation; Module 2, culminating with Exam 2, will cover Chapters 3 and 4, with homework assignments/quizzes 4 – 7 as preparation; and Module 3, with its Exam 3, will cover Chapters 5 and 6, with homework assignments/quizzes 8 – 11 as preparation. (Note that there is no cumulative final exam.) Exams are much longer than the quizzes (5-hour time limit) and many of the questions are not in multiple-choice format.

Extra Credit. As mentioned above you will have opportunities to earn extra points. These additional activities are completely optional, but they're a great way to bolster your grade. Details for these extra credit assignments can be found in the Module Overview documents described below.

Grading Scale. 93 – 100 = A; 90 – 92 = A-; 87 – 89 = B+; 83 – 86 = B; 80 – 82 = B-; and so on, down to 60 – 62 = D-. Raw scores on quizzes and exams will be adjusted (upward) based on overall class performance.

Resources

Here's a rundown of stuff you'll use in the course—where to find it and how to deal with it.

Textbook. I wrote the book, so it's free. Its official home is this website: https://dc.uwm.edu/phil_facbooks/1/. It's also in the Course Information folder on Canvas.

Videos. I teach an in-person version of this course every term. I will post an entire semester's worth of lecture videos in Canvas. By watching these videos, you can experience the class just as you would have in person.

Practice Exams. For each of the three exams, there is a corresponding practice exam. Practice exams have exactly the same format as the real exams: same number of questions, same question types. They are therefore very useful in preparing for the real exam. After taking a practice exam, you can check your answers against an answer key that I will provide (see below).

Answer Keys. There are answer keys for both homework assignments and practice exams. After you submit homework on Canvas, you will gain access to those answer keys. The homework answer keys are restricted to those who have submitted the homework; there is no such restriction for the practice exam answer keys. Homework answer keys contain not only answers to the homework problems, but often detailed explanations. You should use them like this: first, try the homework problems on your own; next, compare your answers to the answers on the key; next, check out videos from class sessions reviewing homework assignments; finally, ask questions (in the discussion forums or office hours or via e-mail) about any problems that you don't understand.

Discussion Forums. These are where you can ask me questions and communicate with each other. Their names will indicate their purpose (e.g., 'General Questions about the Course'), so please take care in posting to the correct place. There are also separate forums for each of the quizzes, access to which is restricted to those who have already taken them; this is the place to ask questions about specific quiz questions.

Fellow Students. I encourage you to talk to each other, either in the question forums or out in the world. Sometimes peers' voices are more helpful than teachers'. Just be sure that any work you submit is your own, not somebody else's.

Other Campus Resources. For your health, safety, academic success, and more--a comprehensive list: <https://uwm.edu/cetl/resources/student-resources/>

Policies

Scheduling. You are free to work at your own pace. The course lasts six weeks, so it makes sense to set aside two weeks for each of the three Modules. Note that some chapters of the text will take more time than others. Chapter 6, for example, is much longer than Chapter 5 (a fact that is reflected in the homework assignments and quizzes), so plan carefully.

Communication. I will communicate with you from time to time via e-mail, using the e-mail address on file with UWM. You must check your UWM e-mail, therefore, to see these messages. You will be held responsible for doing so. I will also periodically post announcements on the front page of the Canvas site; please check that space frequently.

Miscellaneous. The University has policies governing accommodations for disabilities, religious observances, and military service; there are also policies on academic misconduct, discrimination, grades, appeals, and complaints. You can find all the details at the following URL:

<http://uwm.edu/secu/wp-content/uploads/sites/122/2016/12/Syllabus-Links.pdf>

You may not submit work produced by another person or technology (AIs, e.g.).

ESL. If English is not your first language, that fact may or may not make certain things more difficult for you. If it does, please let me know; I am willing to make any accommodation I can to help you succeed.