Introduction to Logic – Critical Reasoning

Instructor

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Text

Knachel, *Fundamental Methods of Logic* [Available as PDF on course website]

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

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<td>Homework Assignments</td>
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There will be a number of opportunities to earn extra credit points.

One final requirement for the course: in order to be considered as having completed the class, you must fill out an evaluation survey. It will be made available near the end of the term.

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 may be eligible for partial credit). I grade these on a 5-point scale. A score of 5 means you tried all the homework problems; a lower score means you skipped some. The homework assignments will be submitted to the D2L Dropbox in designated folders. Documents need not be typed; scans or pictures of handwritten work are just fine. There are 12 total homework assignments.
**Quizzes.** These are follow-ups to the homework exercises, so there are also 12 quizzes. 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. What we’re really doing is preparing for the higher-stakes exams. Quizzes can be found on the ‘Quizzes’ page of D2L. The quizzes are short, with at most a dozen questions; they have a two-hour time-limit.

**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 four homework assignments and quizzes associated with it. So, Module 1 will culminate with Exam 1, which will cover the material from Chapters 1 and 2 in the textbook, with homework assignments 1 – 4 and quizzes 1 – 4 serving as preparation; Module 2, culminating with Exam 2, will cover Chapters 3 and 4, with homework assignments/quizzes 5 – 8 as preparation; and Module 3, with its Exam 3, will cover Chapters 5 and 6, with homework assignments/quizzes 9 – 12 as preparation. (Note that there is no cumulative final exam.) Exams are much longer than the quizzes (5 hour time limit) and are not in multiple-choice format. They are also found on the ‘Quizzes’ page of D2L.

**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.

**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. It’s on the course website (in the ‘Textbook’ folder on the ‘Content’ page), divided into six PDF files, corresponding to its six chapters. (I’m still revising it. If you find any typos, I’d really appreciate if you’d let me know.)

**Videos.** I also teach an in-person version of this course every term. I have made videos of an entire semester’s worth of those sessions. These are a useful complement to the textbook. (Or, depending on your learning style, the textbook is a useful complement to the videos.) In addition, there are videos specifically to help you prepare for the exams; more about these below. Links to the videos are on the D2L ‘Links’ page.

**Module Overviews.** These documents, available in their own folder on the ‘Content’ page, give you a summary of the material covered—both the relevant topics from the textbook and the corresponding videos—and tell you about the homework and extra credit assignments for each of the three Modules.
Practice Exams. For each of the three exams, there is a corresponding practice exam (on the D2L ‘Content’ page, in the ‘Practice Exams’ folder). 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) and also view videos of me going through each of the problems on the practice exam.

Answer Keys. These can be found under ‘Content’ in the ‘Answer Keys’ folder. There are answer keys for both homework assignments and practice exams. After you submit homework to the appropriate dropbox folder, you will gain access to those answer keys. The homework answer keys are restricted to those who have submitted homework through the dropbox; 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 via e-mail) about any problems that you don’t understand.

Taking Quizzes. This document, available in the ‘Course Information’ folder, takes you through the mechanics of entering answers on quizzes in D2L. Remember, both the 12 quizzes and the 3 exams for the course are hosted on the D2L ‘Quizzes’ page, so all of these are referred to as “quizzes”. Since the 12 homework follow-up quizzes are all multiple-choice, no special knowledge is needed for entering answers on those (though if you’re completely new to D2L, there are such questions on the Practice Quiz). Exams, however, are not (entirely) multiple-choice, and so you’ll have to prepare for those. This is what the ‘Taking Quizzes’ document is for. You have a lot of options for entering exam answers. You can try things out with a special Practice Quiz, which you can take as many times as needed for you to try out and master your preferred techniques.

Discussion Forums. These are where you can ask me questions and communicate with each other. They’re under ‘Discussions’ on D2L. The forums are organized by topic (‘General’, ‘Module 1’, etc.), 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.

D2L Help Guide. This document is available in the ‘Course Information’ folder. It provides a series of links to sites with technical support information about the D2L platform. The last link is important: it tells you how to view feedback on graded quizzes.

Policies

Scheduling. The default option is to adhere to a schedule of due dates. Students wishing to work on a different schedule may opt out by contacting me no later than Sept. 10 with an alternative proposal. Homework assignments are due on Mondays; the corresponding quizzes are due three days later on Thursdays (with one exception for Thanksgiving; see below). The exams are due on Wednesdays. Here are the due dates:
Communication. I will communicate with you from time to time via e-mail. I will use 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 D2L; 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:


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.