Critical Reasoning

Dr. Callie McGrath

Spring 2026

Meeting Time	Tuesday and Thursday, 7-9 PM.
Meeting Location	Zoom (URL coming soon).
Office Hours	Wednesday, 1-2 PM; Thursday, 6-7 PM.

In this course, students will learn how to interpret and critically evaluate arguments for and against a given position. We will examine real-world examples of reasoning and subject them to critical analysis. Topics covered include the use of arguments; their place in language-use; identifying arguments; deductive validity; inductive reasoning; inference to the best explanation; and common logical fallacies. Critical reasoning techniques are broadly applicable, and we will relate the course material to students' academic interests.

Textbook

Introductory Logic: A Semantic Approach by Dr. Callie McGrath.

Assignments

Students in this course will be evaluated according to their fulfillment and performance of the following requirements:

Engagement Attending class sessions well-prepared (e.g. having done assigned reading) and participating.

Problem Sets Working through problem sets in class every week.

Quizzes Testing your understanding through brief pop quizzes.

Exams There will be two *__in-person__* exams for this course. You must complete both of them in order to receive any credit for the course. **Please plan ahead to be physically present on campus to complete each exam.**

Extra Credit

Throughout the quarter, there may be various opportunities to earn extra credit. I will announce such opportunities as they arise. If you have an idea for an extra credit assignment, you can suggest it to me. If I like it and there's no countervailing reason against using it, I will take your idea and announce it to the class.

Tentative Schedule of Topics

Week 1 Introduction. Reasoning. Language and logic. Meaning and reference.

Week 2 Grammar. Parts of speech. Combining words and phrases.

Week 3 Compositionality. Truth in natural and artificial languages.

Week 4 Truth tables. Compound sentences. Propositional formulas.

Week 5 Tautologies and contradictions. Limitations on truth tables.

April 30: Midterm Exam

Week 6 Arguments. Deductive validity and soundness. Argument forms.

Week 7 Evaluating arguments and argument forms with truth tables.

Week 8 Valid argument forms. Formal fallacies.

Week 9 Deduction. Predicates and singular terms. Rules of inference.

Week 10 Tying it all together. The big picture and the limits of propositional logic.

June 4: Final Exam