Antelope Valley College

PHIL 110 Introduction to Logic

Asynchronous Online

Instructor: Nate Greely
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Office Hours: F 12:30-1:30pm on Zoom
https://us05web.zoom.us/j/83673642224?pwd=t2mf1ssp1CHRM0fS1izNawcDFJNyGA.1

Course Description

This course is an introduction to logic. Logic is the study of reasoning and argumentation. It provides the basic rules by which we can determine what to believe. This course focuses on formal, deductive logic, though we will cover some inductive and informal logic as well. The course will begin with a survey of various forms of fallacious reasoning and cognitive biases. We will then introduce truth-preserving forms of reasoning, with a focus on techniques for analyzing deductive arguments. This will involve learning the formal apparatus of sentential logic, including translation into formal notation, truth tables, rules of inference, and derivations. We will finish with an introduction to decision theory, where we will apply rigorous reasoning to decision-making.

Textbooks

Basic Sentential Logic, Informal Fallacies, and Cognitive Biases by Rick Grush (provided on Canvas)

Understanding Scientific Reasoning by Ronald Giere (provided on Canvas)

Lecture

Lectures will be posted to Canvas in video form each Monday and Wednesday. They will help to explain the material covered in the readings and help you to work through the sorts of exercises you will encounter on the unit exams, midterm exam, and final exam.

Learning Outcomes

Students will demonstrate their understanding of concepts and techniques in logic, as well as applying their own improved reasoning skills, by participating in discussions, completing homework assignments, unit exams, a midterm exam, and a final exam.

Assessments

Evidence shows that active learning is essential to understanding. This is particularly important for a course like this in which we are learning a skill, much like a learning sport or a musical instrument. You must *practice*. Thus regular homework will be assigned. A discussion forum will also be provided for helping each other work through the homework exercises. The course will be broken into seven units, each of which will be punctuated by an exam. These short exams are designed to be quite easy if you attend regularly and participate in learning activities. There will also be a midterm exam and a final exam.

The breakdown of your final grade is as follows:

Discussion Participation – 15%

Logic is a skill and so it must be practiced. Typically, some of that practice would happen in the classroom. In an online setting we can replace some of this interaction with the discussion board. In the discussion board, feel free to talk about the homework assignments. You may post a question about a problem you are having trouble completing, or you may help someone else out with their homework. Collaboration is encouraged! Students should post at least twice to each week's discussion board, either asking for or providing help on some homework problem.

Homework Completion – 20%

Your logic practice will also take the form of short homework assignments. The homework assignments are similar in format to the exams, so if you can do well on the homework, you can do well on the exams.

Unit Exams – 5% each (total 30%)

The course is divided into seven units, each of which will be punctuated by a timed, online exam on Canvas.

Midterm Exam – 15%

There will be a midterm exam cumulative for Units 1, 2, and 3. It will be similar in format to the unit exams, only longer. The preceding lecture will be devoted to review for the midterm.

Final Exam – 20%

There will be a final exam cumulative for the entire course. It will be similar in format to the unit exams and midterm exam, only longer.

Course Schedule

10/14 – Course Introduction; Truth and Inference; Reading: Greely Lecture Notes

Unit 1 – Informal Fallacies and Cognitive Biases

10/16 – Informal Fallacies; Reading; Grush Ch. 5

10/21 – Cognitive Biases; Reading; Grush Ch. 6; Homework 1 Due

10/21 – Unit 1 Exam Posted

Unit 2 - Arguments

10/23 – Arguments and Their Parts; Reading: Grush Ch. 1.1; Deductive Arguments, Validity, and Soundness; Reading: Grush Ch. 1.1; Homework 2 Due

10/27 – Unit 1 Exam Due

10/28 – Inductive Arguments, Strength, and Cogency; Reading: Grush Ch. 1.1; Greely Notes on Induction; Homework 3 Due

10/29 - Unit 2 Exam Posted

Unit 3 - Symbolization

10/30 – Atomic and Compound Statements; Reading: Grush Ch. 1.2.1; Logical Connectives; Reading: Grush Ch. 1.2.2-1.2.7; Homework 4 Due

11/3 – Unit 2 Exam Due

11/4 - Symbolization; Reading: Grush Ch. 1.2.8-1.2.9; Homework 5 Due

11/5 - Unit 3 Exam Posted; Midterm Posted

Unit 4 – Truth Tables

11/6 – Truth Tables; Reading: Grush Ch. 2.1-2.2; Using Truth Tables, Validity; Reading: Grush Ch. 2.3-2.6; Homework 6 Due

11/10 – Unit 3 Exam Due; Midterm Due

11/11 – Using Truth Tables – Various Statement Types; Reading: Grush Ch. 2.7-2.9; Homework 7 Due

11/12 - Unit 4 Exam Posted

Unit 5 – Direct Derivations

11/13 – Rules of Inference – R, DN, MP, and MT; Reading: Grush Ch. 3.1-3.2; Homework 7 Due

11/17 – Unit 4 Exam Due

11/18 – Rules of Inference – DS, DI, CONJ, SIMP, BC; Reading: Grush Ch. 3.3-3.4; Homework 8 Due

11/20 – Direct Derivations – Reading: Greely Lecture Notes; Homework 9 Due

11/21 – Unit 5 Exam Posted

11/24 – Unit 5 Exam Due

Unit 6 – Conditional and Indirect Derivations

11/25 – Conditional Derivations; Reading: Grush Ch. 3.5; Indirect Derivations; Reading: Grush Ch. 4.6; Homework 10 Due

11/27 – Theorems; Reading: Greely Lecture Notes; Homework 11 Due

11/28 – Unit 6 Exam Posted

12/1 – Unit 6 Exam Due

Unit 7 – Decision Theory

12/2 – Decision Theory Part 1 – Reading: Giere Ch. 9

12/4 - Decision Theory part 2 & 3 – Reading: Giere Ch. 10.1 - 10.9; Final Exam Posted

12/7 – Final Exam Due

Grading

Numeric	Grade		Numeric	Grade	
Over 93%		A	73% to 76%		C
90% to 92%		A-	70% to 72%		C-
87% to 89%		B+	67% to 69%		D+
83% to 86%		B	63% to 66%		D
80% to 82%		B-	60% to 62%		D-
77% to 79%		C+	<60%		F

Diversity and Inclusion

Antelope Valley College is a comprehensive community college in the California Community College System dedicated to providing services to a broad range of students with a variety of educational goals. Antelope Valley College is dedicated to providing educational programs and services as expressed in the California Master Plan for Higher Education. The College is committed to equal educational opportunity and reinforces that commitment through a program of active affirmation of diversity.Antelope Valley College is dedicated to meeting the dynamic needs of a changing community. The College addresses the educational needs of a diverse and evolving population. The College recognizes that it is uniquely capable of responding to the requirements of regional business, industry, and public service, as well as the social and cultural needs of the Antelope Valley. Antelope Valley College affirms the rights of the individual and respects human dignity. The programs and activities of the College foster the individual's ability to think clearly, critically, and independently to meet the demands of an increasingly complex society. The student is the primary concern of the College. The curriculum, activities, and services of the College help students understand their physical, cultural, ethnic, and social environment. The preservation of academic freedom provides a college environment in which students and faculty can examine ideas freely. This philosophy is reflected in the curriculum, the student-faculty relation-ships, the services and resources, and the policies of the College.

Academic Integrity

Violation of the Academic Honesty Policy: Dishonesty, including but not limited to, cheating, or plagiarism. Plagiarism-from the Latin word for “kidnap” ---involves using another’s work without giving proper credit, whether done accidentally or on purpose. This includes not only words and ideas, but also graphs, artwork, music, maps, statistics, diagrams, scientific data, software, films, videos and the like. Plagiarism is plagiarism whether the material is from published or unpublished sources. It does not matter whether ideas are stolen, bought, downloaded from the Internet, or written for the student by

someone else-it is still plagiarism. Even if only bits and pieces of other sources are used, or outside sources reworded, they must still be cited. To avoid problems, students should cite any source(s) and check with the instructor before submitting an assignment or project. Students are always responsible for any plagiarism in their work. An instructor who determines that a student has cheated or plagiarized has the right to give an "F" grade, or the numerical equivalent, for the assignment or examination only. You cannot drop the student from class or fail them from the class for a single violation of the Academic Honesty Policy.

For detailed information on Antelope Valley College's Academic Honesty Policy and plagiarism:

https://docs.google.com/document/d/1QneJvu80MUO2Md9oc4pLI7_PIZVIHi12vzw_p-QSXIU/edit#heading=h.tpv2ymb61nhg

Disability Statement

The OSD program provides support services, specialized instruction, and educational accommodations to students with disabilities so that they can participate as fully and benefit as equitably from the college experience as their non-disabled peers. An Academic Accommodation Plan (AAP) is developed for each student which links student's goals, curriculum program, and academic adjustments, auxiliary aids, services and/or instruction to his/her disability related educational limitation. If you need academic accommodations please contact the OSD office at OSD@avc.edu.

Religious Accommodation:

If you require any accommodation on religious grounds, please alert me in writing as soon as possible.