

Antelope Valley College

PHIL 101 Critical Thinking T/Th 5-8pm

Instructor: Nate Greely

Email: nathaniel.greely@avc.edu

Office Hours: By appointment

Course Description:

This course is an introduction to critical thinking. Critical thinking is the ability to make decisions based on truth-preserving forms of reasoning. That is, we want to know what is true and to use that knowledge to make decisions that improve our lives and the lives of those we care about. However, our brains often use shortcuts that create blind spots in our reasoning. In this course we will learn to identify these shortcuts, understand why they can hinder our ability to make good decisions, and practice more rigorous strategies for decision-making. These strategies will include deductive, inductive, statistical, and causal reasoning. We will then learn how to apply the knowledge produced by these more rigorous forms of reasoning to our own lives using decision theory.

Learning Outcomes:

Students will learn to identify fallacious reasoning caused by cognitive biases and heuristics. They will then learn to use deductive, inductive, statistical, and causal reasoning in decision-making. These skills can be applied in many areas, including casual conversation, political debate, understanding and assessing scientific information, and making informed economic decisions.

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*. To that end a large percentage of class time will consist of group activities and there will be regular homework assignments. Regular practice is essential. The course will be broken into six units, each of which will be punctuated by an active review and 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 final exam.

The breakdown of your final grade is as follows:

Attendance and Participation – 15%

Critical thinking is a skill, and so it requires practice. Much of this practice will occur in class with your peers. Attendance and participation, then, are a crucial component of the course and will constitute 15% of your final grade. If you must miss a class, let me know the reason and I will do my best to be flexible.

Homework Completion – 25%

In addition to in-class activities, we will also develop critical thinking abilities by practicing at home. This will take the form of short homework assignments. The assignments will be graded on completion rather than accuracy and answers will be discussed in class. Homework constitutes 25% of your final grade.

Unit Quizzes – 2.5% each (total 20%)

The course is broken into seven units. Each unit is punctuated by one or two short Canvas quizzes. Quizzes are each 2.5% of your final grade, totaling 20%.

Midterm Exam – 20%

A midterm exam will be posted on Canvas. The exam will be cumulative. The previous day's class session will be devoted to review for the midterm. The midterm constitutes 20% of your final grade.

Final Exam – 20%

The final exam will be on Canvas. The exam will be cumulative. Part of the prior class session will be devoted to review for the final. The final constitutes 20% of your final grade.

Textbooks:

[*Basic Sentential Logic, Informal Fallacies, and Cognitive Biases*](#)

[Download *Basic Sentential Logic, Informal Fallacies, and Cognitive Biases*](#) by Rick Grush (provided on Canvas)

Understanding Scientific Reasoning by Ronald Giere (provided on Canvas). [Ch. 5](#)

[Download Ch. 5](#); [Ch. 6 Download Ch. 6](#); [Ch. 7 Download Ch. 7](#); [Ch. 8 Download Ch. 8](#); [Ch. 9 Download Ch. 9](#); [Ch. 10](#)

[Download Ch. 10](#)

Course Schedule:

10/16 – Course Introduction; Truth and Inference; Informal Fallacies; Reading: Grush, Ch. 5, pp. 98-106; Cognitive Biases and Heuristics - Reading: Grush, Ch. 6, pp. 113-121

10/21 – Deductive Arguments, Logical Connectives – Reading: Grush, Ch. 1, pp. 1-22

10/23 – Logical Translation, Rules of Inference – Reading: Grush, Ch. 1, pp. 23-28, Ch. 3 pp. 65-71

10/28 – Formal Fallacies; Deductive Proofs – Reading: Grush, Ch. 3, pp. 75-77

10/30 – Inductive Reasoning - Reading: Greely, Notes posted online; Review for Midterm Exam

11/4 – Statistics and Probability part 1 – Reading: Giere Ch. 5.1 – 5.6

11/6 – Statistics and Probability part 2 – Reading: Giere Ch. 5.7 – 5.11

11/11 – Statistics and Probability part 3 – Reading: Giere Ch. 6

11/13 – Causal Reasoning part 1 - Reading: Giere Ch. 7

11/18 – Causal Reasoning part 2 & 3 – Reading: Giere Ch. 8.1 - 8.9

11/20 – Decision Theory Part 1 – Reading: Giere Ch. 9

11/25 – Decision Theory part 2 – Reading: Giere Ch. 10.1 - 10.9

11/27 - Thanksgiving, No Class

12/2 - Decision Theory part 3 – Reading: Giere Ch. 10.1 - 10.9

12/4 – Review for Final Exam

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 relationships, 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.