California Lutheran University

PHIL 220 Logic MWF 8-9:05am

Online

Instructor: Nate Greely

Email: ngreely@callutheran.edu

Office Hours: MW 11:30-12:30 Zoom

Lecture:

All of the course content, including lectures, will be available asynchronously. We will also have a live Zoom session every MWF at 8am where we can discuss the course material.

Course Description:

This course is an introduction to logic. I understand logic rather broadly as any truth-preserving form 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%

Logic is a skill, and so it requires practice. As this is an online course, participation will take the form on an online discussion board where you can collaborate on the homework problems.

Homework is only graded on completion, so feel free to ask questions in the discussion about problems you are having trouble with, and help others when you are able. Each student must post at least once to each week's discussion board.

Homework Completion – 25%

In addition to in-class activities, we will also develop our rational 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 posted after the due date and discussed in the live Zoom sessions. Homework constitutes 25% of your final grade.

Unit Quizzes – 3.33% each (total 20%)

The course is broken into six units. Each unit is punctuated by a short online quiz. Quizzes are each 3.33% of your final grade, totaling 20%.

Midterm Exam – 20%

A midterm exam covering all the material from the first half of the course will be due online at ?. The questions on the exam will be similar in format to the homework and quizzes. The midterm constitutes 20% of your final grade.

Final Exam – 20%

A final exam, cumulative for the entire course, will be due online ?. The final will be similar in format to the midterm and constitutes 20% of your final grade.

Textbooks:

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

Understanding Scientific Reasoning by Ronald Giere (provided on Canvas)

Course Schedule:

1/22 – Course Introduction

1/24 - Truth and Inference; No Reading

1/27 – Informal Fallacies; Reading: Grush, Ch. 5, pp. 98-106

1/29 – Cognitive Biases and Heuristics - Reading: Grush, Ch. 6, pp. 113-121

1/31 – Review

2/2 - Quiz 1 Due 11:59pm

2/3 – Types of Arguments - Reading: Grush Ch. 1.1

2/5 - Validity and Invalidity

2/7 - Review

2/9 - Quiz 2 Due 11:59pm

2/10 - Statement Operators – Reading: Grush, Ch. 1, pp. 1-22

2/12 - Statement Operators cont.

2/14 – Translating Statements – Reading: Grush, Ch. 1, pp. 23-28

2/17 -President's Day Holiday - No Class

2/19 - Translating Statements cont.

2/21 - Review

2/23 - Quiz 3 Due 11:59pm

2/24 - Rules of Inference - Reading: Grush, Ch. 3 pp. 65-71

2/26 – Rule of Inference cont.

2/28 – Recognizing Rules practice

3/3 – Deductive Proofs – Reading: Grush, Ch. 3, pp. 75-77

3/5 – Deductive Proofs Cont.

3/7 - Review

3/9 - Quiz 4 Due 11:59pm

3/10 - Spring Break

3/12 - Spring Break

3/14 - Spring Break

3/17 - Induction - No reading

3/19 – Review; Quiz 5 due 11:59pm

3/21 – Review for Midterm Exam

3/23 - Midterm Exam Due 11:59pm

3/24 – Statistics and Probability part 1 – Reading: Giere Ch. 5.1 – 5.6

3/26 – Statistics and Probability part 1 cont.

3/28 – Statistics and Probability part 2 – Reading: Giere Ch. 5.7 – 5.11

3/31 – Statistics and Probability part 2 cont.

4/2 – Review

4/4 – Statistics and Probability part 3 – Reading: Giere Ch. 6

4/7 – Statistics and Probability part 3 cont.

4/9 – Statistics and Probability part 3 cont.

4/11 - Review

4/13 - Quiz 6 Due 11:59pm

4/14 – Causal Reasoning part 1 - Reading: Giere Ch. 7

4/16 – Causal Reasoning part 1 cont.

4/18 - Good Friday No Class

4/21 – Causal Reasoning part 2 – Reading: Giere Ch. 8

4/23 – Causal Reasoning part 2 cont.

4/25 – Review

4/27 - Quiz 7 Due 11:59pm

4/28 – Decision Theory Part 1 – Reading: Giere Ch. 9

4/30 – Decision Theory Part 1 cont.

5/2 – Decision Theory Part 2 - Reading: Giere Ch. 10

5/5 – Decision Theory part 2 cont.

5/7 – Review

5/8 - Quiz 8 Due 11:59pm

5/9 - Review for Final Exam

5/12 – 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

CARNEGIE/STUDENT WORKLOAD -

Activity	Instructor-Led Weekly	Instructor-Led Course	Independent Weekly	Independent Course	Remarks
Class Meetings	4	60			
Course Readings			4	60	
Midterm Prep				5	
Research Proposal				10	
Essay Draft				10	
Final Essay				20	
Quiz Prep				10	
Final Exam Prep				5	
Total Hours		60		120	

TECHNOLOGY REQUIREMENTS FOR BLACKBOARD

Even though this is an on-ground, on-campus, face-to-face, in-person class, some components of your class could be placed on Blackboard (e.g., syllabus).

Hardware & Software

	Windows	Mac OS X
Operating System	Windows 10	OS X 10.12 or later version
Java	Most recent version	Most recent version

Browser

Your browser must always be up to date. We recommend Firefox and Chrome for all Blackboard functions. If you are experiencing problems on another browser, please switch to Firefox or Chrome. To check your browser and system compatibility with Blackboard, please use the Blackboard Browser Checker below to view your functionality. *Please note that checkmarks on all functions does not guarantee a seamless experience.*

Click here: [Blackboard Browser Checker](#)

Internet

Bandwidth: recommended requirement is 5 Mbps per device or higher; anything less will cause potential issues.

Note: Bandwidth is affected by distance from the wireless router or access point, use of Netflix video streaming and number of users on the wireless network.

Streaming services: Sites or applications that use the internet like YouTube, Netflix, P2P, Spotify, or Pandora must be closed before starting a Zoom session.

Connection: You must be connected to the internet via an ethernet cable or Wi-Fi. Hotspots do not have the bandwidth to handle Zoom sessions.

Wi-Fi: Be as close to the router access point as possible to get the best connection. Be aware that locations with free Wi-Fi, i.e. Starbucks or Barnes & Noble, cannot provide enough bandwidth for Zoom sessions and should not be used.

Use the following link to check your speed. Click here: http://speedof.me

Diversity and Inclusion:

Individuals of all ages, backgrounds, beliefs, ethnicities, genders (and identities & expressions thereof), national origins, religious affiliations, sexual orientations, ability - and other visible and non-visible differences are welcome in this course. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. We will be discussing controversial topics in this class and students may confront views that they find wrong or even reprehensible. Where possible I would like to confront those views with reasoned arguments. If you find that a particular reading or assignment is so emotionally charged that it interferes with your ability to complete it, send me an email and we'll see if there is a solution that we can all be happy with.

Academic Accommodation:

If you require any form of accommodation on the grounds of disability, please visit this link: https://www.callutheran.edu/students/disability-services/register.html well in advance so that you can submit the necessary documents.

Contact information is dss@callutheran.edu, Phone: (805) 493-3464, Disability Support Services, 60 W. Olsen Rd. #5300, Thousand Oaks, CA, 91360

Religious Accommodation:

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

Academic Integrity:

All instances of academic offences including plagiarism, cheating on exams, and multiple submission of work, will be handled in accordance with official policy, which can be found here: https://catalog.callutheran.edu/undergraduate/academicpolicies/. Please read the policy and ensure that you understand it.