

Philosophy 6: Logic

Instructor Information

Dr. Elizabeth Rard
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Office: Virtual
Office Hours:
 T 9:30 – 10:30
 W 12:00 – 1:00
 Th 10:00-11:30
 F: 9:00 – 10:30
 Or by appointment!

Course Information

Logic
PHIL-6-50050
Fall 2021

Delivery: 100% Online
Asynchronous Lectures
Required Synchronous Meetings: Fridays 11:00-11:50 via Zoom

Description

This course introduces the concepts and methods of modern symbolic logic. Topics include symbolization, syntax, semantics, and natural deduction for sentential and predicate logic.

Required Text

Marcus Introduction to Formal Logic with Philosophical Applications *or*
Marcus Introduction to Formal Logic

In addition, supplemental materials will be posted to Canvas throughout the semester.

Grading

Midterm Exams:	25%	(2 @ 12.5%)
Final Exam:	15%	(1 @ 15%)
Problem Sets:	36%	(6 @ 6%)
Quizzes:	12%	(12 @ 1%)
Discussion Posts:	12%	(12 @ 1%)
Final Grade Breakdown:		

<u>Percent of total points</u>	<u>Grade</u>
90-100	A
80-89.99	B
70-79.99	C
60-69.99	D
50-59.99	F

Course Policies

Course Communication policy

Keeping in contact with your instructor is key to your success in any course. Here is some important information about how we'll keep in touch throughout the semester.

Where to find everything:

- **Canvas:** All course materials, instructions, assignments, etc. will be posted on Canvas. New course content will be released every Monday between 12:00-1:00. Course content will be organized in weekly modules.

How you can contact me:

- **Email:** You can contact me by sending an email to me at elizabeth.rard@reedleycollege.edu, or by messaging me through Canvas. When contacting me please include your **full name and class number** in the subject line of your message, and observe professional email etiquette. If emailing me directly please use only your official SCCCD email account. I am available Monday-Friday between the hours of 9am and 5pm and will respond to your email within 24 hours.
- **Office Hours:** During my office hours I am available via either of the above methods. In addition, I will be available through Zoom for live one-on-one video and audio drop in office hours. Please see the **Office Hours Page** of the **Introduction Module** for my up-to-date office hour schedule, and for more information about how to join office hours using Zoom.

How I will contact you:

- **Class Announcements:** I will post weekly class announcements on Canvas that will include reminders about upcoming assignments, any changes to our plan, or any other important information that I need to share with the class. Students are expected to check class announcements regularly on our course page.
- **Individual Messages:** If I need to get in contact with you specifically I will send a message through the Canvas inbox. Students are expected to check their SCCCD email regularly to monitor for any important communications.

Attendance and Drop Policy

Students are expected to participate consistently and regularly in all parts of this course throughout the semester.

- **Week One Drop:** During the first week of class students must post an introduction message or video in the **Introduction Discussion**. Any student who does not post by **2 pm on Friday of the first week of class** will be dropped as a no show.
- **Attendance:** Each week students are expected to post to a weekly discussion board, and complete a quiz on the weekly material. Attendance will be recorded based on completion of these two assignments. Failure to complete either will count as an absence (up to **two absences per week**). If a student has **more than four absences** prior to the end of Week 9 they may be **dropped from the class**. Please contact your instructor immediately in case of any emergency situation that results in more than four absences. **During exam weeks** completion of the exam will count as your attendance for the week. In addition, students are expected to attend the weekly meetings.

Late Work Policy

Staying on top of course work is crucial to a smooth and successful semester. The late penalties outlined below are designed to help you stay on track and not fall behind. That being said I realize that sometimes life gets in the way. Always communicate with your instructor (me!) in a timely fashion if events occur that will prevent your timely completion of class assignments.

- **Quizzes and discussion posts:** These assignments are given weekly and are time sensitive. Both will become available at **noon on Monday** of the week they are given, and will close at **2 pm on Monday of the following week**. Once these assignments have closed they cannot be made up. Note: These assignments also count as your attendance for the week. The two lowest scores for each will be dropped.
- **Exams:** Make-up exams will only be given with documented proof of a valid excuse (such as hospitalization). If you know in advance that you will need to miss an exam contact your instructor immediately to discuss your options. Midterm exams will be posted at **noon on Monday** and will close at **2 pm on Monday of the following week**. The Final Exam will post on Wednesday of the last week of class, and will be due at **2 pm on the Wednesday of Finals Week**.
- **All other assignments:** All other assignments (problem sets) can be submitted past the due date. If an assignment is not **submitted by the deadline** it will receive a 10% penalty. If an assignment is more than **24 hours late** the penalty will increase to 20%. No additional penalties will be added. **No late work will be accepted after Friday at 2:00 pm of Week 17** (the last week of regular class).

Coursework

Reading Assignments

Students are expected to complete readings during the week that they are posted. Reading assignments will relate to the class lectures occurring during the week that they are posted.

Discussion Board Posts

Students are required to post to a weekly discussion board, and to reply to at least two fellow classmates per week. Specific directions will be provided each week. Students need to make their **initial post** by **2:00 pm on Friday** of the week they are due, and must post **responses** to other students by **2 pm on the following Monday**. Please follow academic etiquette when interacting on discussion boards. It's fine (and even encouraged) to question or disagree with someone's post, but always do so in a way that is respectful and has a goal of fostering communication and intellectual exploration. **Note: Some of the posts will contain somewhat challenging logic problems. Your scores will primarily be based on effort and completeness of answer. You will still receive most discussion points even if your solution is incorrect (so don't skip these because you're not sure you have the right answer!).**

Problem Sets

Students will complete 6 problem sets throughout the semester that allow students to apply the material covered in class.

Practice Problems/Friday Meetings

During most non-exam weeks, I will post a set of practice problems on Monday which are related to that week's material. On Friday we will hold a live Zoom meeting where I go over the practice problems. Students are expected to attempt the problems during the week and to attend the Friday meetings and ask questions. In addition to these practice problems your textbook contains numerous exercises and you are encouraged to use these for further practice.

Quizzes

During non-exam weeks students will be expect to complete short, multiple-choice quizzes. The quizzes will contain approximately 5 questions and you will have 20 minutes to complete the quiz.

Examinations

There will be **three** exams in this course (two midterms and a final). They will be cumulative but will emphasize the material covered since the last exam. Anything in the readings or discussed in class is fair game for the exams. The exams will be open book/open note and will be similar in format to the problem sets.

Where to find your grade

Grades will be available on Canvas. Assignment/exam scores will be posted to Canvas.. **IT IS THE RESPONSIBILITY OF THE STUDENT TO BRING ANY MISSING/WRONG SCORES TO THE ATTENTION OF THE INSTRUCTOR ASAP.** All problems must be reported to the instructor within 24 hours of the final exam. After that scores will not be changed. Any student with a question about their current grade in the course should feel encouraged to contact the instructor.

Special Needs Requests

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact your instructor as soon as possible.

Academic Dishonesty

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

Cheating

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or playing notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights.

Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on a particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

Student Learning Outcomes

Upon completion of this course, students will be able to:

1. Identify arguments and distinguish the premises of an argument from its conclusion.
2. Translate statements into the language of sentential logic and use truth tables to determine whether they are contingent, self-contradictory, or tautologous.
3. Use truth tables to determine whether sets of statements are consistent or inconsistent.
4. Translate ordinary language arguments into the language of sentential logic; determine whether such arguments are valid or invalid; and prove, by means of natural deduction, the validity of such arguments.

- Translate ordinary language arguments into the language of predicate logic; determine whether such arguments are valid or invalid; and prove, by means of natural deduction, the validity of such arguments.

Objectives

In the process of completing this course, students will:

- Identify arguments and distinguish the premises of an argument from its conclusion.
- Translate statements into the language of sentential logic and use truth tables to determine whether they are contingent, self-contradictory, or tautologous.
- Use truth tables to determine whether sets of statements are consistent or inconsistent.
- Translate ordinary language arguments into the language of sentential logic; determine whether such arguments are valid or invalid; and prove, by means of natural deduction, the validity of such arguments.
- Translate ordinary language arguments into the language of predicate logic; determine whether such arguments are valid or invalid; and prove, by means of natural deduction, the validity of such arguments.

The following course schedule is **tentative**. Any changes to the schedule will be announced in class ahead of time.

Week	Plan
Week 1 8/9 – 8/13	<p><u>Content</u></p> <p>Introduction to the course Chapter 1: Introducing Logic 1.1, 1.2, 1.5 Logical Operators Zoom Discussion: Friday 11:00-12:00</p> <p><u>Assignments</u></p> <p>Welcome Discussion Post: Due at 2 pm on 8/13. Failure to post will result in being dropped as a no-show. Quiz Week 1</p>
Week 2 8/16 – 8/20	<p><u>Content</u></p> <p>Well-formed formulas, Main Operators 2.1, 2.2 Translations introduction 1.4, 2.1 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Discussion Post Week 2 Quiz Week 2</p>
Week 3 8/23 – 8/27	<p><u>Content</u></p> <p>Translations Continued Learning to use LaTeX on Canvas Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Problem Set 1 due on 8/27 at 2:00 pm</p>

	<p>Discussion Post Week 3 Quiz Week 3</p> <p><u>Important Dates:</u></p> <p>8/27 Last day to drop without a W in person 8/29 Last day to Drop without a W 8/29 Last day to add with add code on WebAdvisor</p>
<p>Week 4 8/30 – 9/3</p>	<p><u>Content</u></p> <p>Truth Tables Truth Tables, Truth functions 2.3, 2.4 Truth Tables: Classifying Propositions 2.5 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Discussion Post Week 4 Quiz Week 4</p>
<p>Week 5 9/6 – 9/10</p>	<p><u>Content</u></p> <p>Truth Tables: Valid and Invalid Arguments 2.6 Indirect Truth Tables 2.7 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Problem Set 2 Due on 9/10 at 2:00 pm Discussion Post Week 5 Quiz Week 5</p> <p><u>Important Dates:</u></p> <p>9/6 Labor Day (Campus Holiday)</p>
<p>Week 6 9/13 – 2/17</p>	<p><u>Content</u></p> <p>Chapter 3: Inference in Propositional Logic Rules of inference 3.1 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>MIDTERM: Released at noon on 9/13 Due at 2 pm on 9/20</p>
<p>Week 7 9/20 -9/24</p>	<p><u>Content</u></p> <p>Rules of inference 3.2 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Discussion Post Week 7 Quiz Week 7</p>

<p>Week 8 9/27 – 10/1</p>	<p><u>Content</u> Rules of Equivalence 3.3 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u> Discussion Post Week 8 Quiz Week 8</p>
<p>Week 9 10/4 – 10/8</p>	<p><u>Content</u> Rules of Equivalence 3.4 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u> Problem Set 3 Due on 10/8 at 2:00 pm Discussion Post Week 9 Quiz Week 9</p> <p><u>Important Dates:</u> 10/8 Last day to drop a full-term class</p>
<p>Week 10 10/11 – 10/15</p>	<p><u>Content</u> Conditional Proof 3.7 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u> Discussion Post Week 10 Quiz Week 10</p>
<p>Week 11 10/18 – 10/22</p>	<p><u>Content</u> Indirect Proof 3.9 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u> Problem Set 4 Due on 10/22 at 2:00 pm Discussion Post Week 11 Quiz Week 11</p>
<p>Week 12 10/25 – 10/29</p>	<p><u>Content</u> Logical Truths 3.8 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u> MIDTERM: Released at noon on 10/ 25 Due at 2 pm on 11/1</p>

<p>Week 13 11/1 – 11/5</p>	<p><u>Content</u></p> <p>Chapter 4: Monadic Predicate Logic 4.1 Syntax 4.3 Translation in Predicate Logic 4.2 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Discussion Post Week 13 Quiz Week 13</p>
<p>Week 14 11/8 – 11/12</p>	<p><u>Content</u></p> <p>Derivations in Predicate Logic 4.4 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Discussion Post Week 14 Quiz Week 14</p> <p><u>Important Dates:</u></p> <p>11/11 Veterans Day (Campus Holiday)</p>
<p>Week 15 11/15 – 11/19</p>	<p><u>Content</u></p> <p>Derivations in Predicate Logic Continued Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Problem Set 5 Due on 11/19 at 2:00 pm Discussion Post Week 15 Quiz Week 15</p>
<p>Week 16 11/22 – 11/26</p>	<p><u>Content</u></p> <p>Quantifier Exchange 4.5 Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Quiz Week 16</p> <p><u>Important Dates:</u></p> <p>11/25 – 11/26 Thanksgiving Holiday (Campus Holiday)</p>
<p>Week 17 11/29 – 12/3</p>	<p><u>Content</u></p> <p>CP/IP in Predicate Logic Conclusion</p>

	<p>Zoom Discussion: Friday 11:00-11:50</p> <p><u>Assignments</u></p> <p>Problem Set 6 Due on 12/1 at 2:00 pm Discussion Post Week 17 All late work due by 2:00 pm on 12/3 Final Exam posted by noon on 12/1</p>
<p>Week 18 12/6 – 12/10</p>	<p><u>Assignments</u></p> <p>Final Exam is Due by 2:00 pm on 12/8</p>