

LOGIC, REASONING AND PERSUASION

PHIL 730: 101, Section 90

Online, Fall 2020

Instructor: Yoonhee Kang

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Office Hours: Thursdays 4:00 PM – 5:00 PM (eastern time) or by appointment, Canvas conference call or chat or Canvas - Zoom

I. LEARNING OBJECTIVES

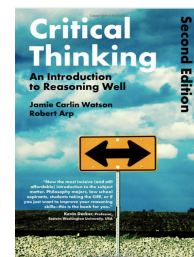
Logic is the study of how to reason correctly. This course is designed to introduce a variety of logical concepts and tools of critical thinking. Based on the principles of reasoning from formal and informal logic, you will learn how to examine critically philosophical and other theoretical issues concerning the nature of reality, human experience, knowledge, value and/or cultural production.

1. Argument analysis: Acquiring skills of identifying parts of arguments (premises, conclusions, inferences); identifying mode (induction, deduction, analogy, etc.); reconstructing/diagramming arguments to reveal the logical structure
2. Argument evaluation: Becoming capable of a systematic evaluation of an argument; assessing the acceptability of premises/reasons; accurately evaluating the relevance of premises/reasons; making judgments about the sufficiency of grounds for a conclusion/contention/thesis.
3. Terminology/theory: Understanding and correctly using the definitions & conceptual foundations of logical analysis: validity, soundness, rhetoric, syllogisms, fallacies, other formal argument patterns.
4. Metacognition: Developing the skills of critical and logical thinkers such as the ability to shift perspective, awareness of bias/cognitive limitations, commitment to understanding & transparency, and valuing logic over rhetoric
5. Application: Acquiring substantial transference of technical ability to contexts outside the classroom

II. REQUIRED TEXT

Robert Arp, Jamie Carlin Watson, ***Critical Thinking: An Introduction to Reasoning Well***, **2nd Edition**, ISBN-13: 978-1472595683

- E-book is available from the publisher's website: <https://www.bloomsbury.com/cw/critical-thinking-2e/>
- I recommend the publisher's e-book (Note: Kindle or Google book do NOT keep the page numbers of the physical textbook – I do not recommend them)
- Additional reading materials (PDFs) will be provided via Canvas.



III. TECHNICAL SUPPORT

If you have trouble accessing the course material due to technical issues, please visit <https://rutgersonline.desk.com> (Links to an external site.) or contact 848-445-4357 during weekday business hours, or email at help@oit.rutgers.edu.

IV. COURSE REQUIREMENTS AND GRADING

Your final grade will be determined in the following way:

1) Daily Assignments	-----	15 %
2) Home Assignments & Participation	-----	15 %
3) Four Quizzes	-----	40 %
4) Final Exam	-----	30 %

Grading Scale:

A	100 – 90
B+	89.99 – 85
B	84.99-80
C+	79.99 – 75
C	74.99 – 70
D	69.99 – 60
F	59.99 – 0

We will have **two sessions** each week. Though this is an online course it will precede *as if* we meet on **Wednesdays and Fridays**.

The course routine is to finish two sessions in one week. For each session, the student is required to

- i) finish the **assigned readings**, and then
- ii) submit the assigned work for the session – either a short review quiz called “**Daily Assignment**” or “Home Assignment” or “Quiz,” etc..

The dues for each session are 9 PM (eastern time), Wednesdays, and Fridays, respectively unless notified.

Learning logic is like learning a new language so it is inherently accumulative. For that reason, keeping up with the course schedule is one of the important and easiest ways to succeed in this course. For each session, the lecture notes - slide files with audio/video material – will be provided to assist the student’s learning. The routine for each session (reading & submitting the assignments for the session before the due) will ensure the student to be fully prepared for the quizzes and the final exam without hassle. More detailed policies of each required work can be found below.

1. Daily Assignments (15% of the final grade, 100pt base)

- All Daily Assignments will be posted at **Quizzes** on the left menu bar from the Canvas course page.
- Daily Assignments are short review quizzes (7-11 questions, mostly) chosen from the questions/examples from the assigned readings, textbook exercises (“Getting familiar with....”), and lecture notes. All questions from

daily assignments serve as sample/study questions for the actual quizzes and the final exam.

- Grading policy:
 - Each daily assignment is a 5 pt Quiz.
 - Daily Assignment grade is determined simply by the sum of each Daily Assignment quiz grade plus 20 pt of base grade* (Note this base grade is subject to change depending on how many daily assignments we will actually have.)
 - The student can take the daily assignment quiz up to three times, and as long as all of them were submitted on time, the highest score will be considered.
- The due (9 PM Wednesdays and Fridays) will be strictly enforced.
 - Reading assignments and Daily Assignment questions will be posted at least three days ahead of the due date.
 - Early submission is allowed; if you prefer, it is perfectly fine to finish your weekly session (two sessions) in one day before the dues.
 - All Daily Assignments will remain open until the last day of the semester for the student's review purpose.
- Late submission policy:
 - Late submission of Daily assignments late will be accepted for partial credits if the submissions were made within approximately 30 days after the due.
 - There will be four so called "**purge**" days during the semester: September 30th, October 28th, November 18th, December 11th.
 - Any submission made after the relevant purge day will not be credited.

2. Home Assignment and Participation (15% of the final grade, 100pt base)

- There will be five to seven low stake homework assignments and/or class activities such as writing a short post in the discussion forum.
- Late submission policy:
 - Late submission of Homework Assignments or other participation activities will be accepted for partial credits as long as they meet the relevant definite deadlines ("purge" days).
- Mandatory Office Hours participation: every student is required to have at least one time of one-on-one office hour between October 20th and October 30th.

3. Four Quizzes (40% of the final grade, each 10%, 100pt base)

- There will be four quizzes and available from **Quizzes** on the left menu bar of the Canvas course page.
 - Quizzes (each 10% of the final grade) will be open for at least 24 hours. There will be a time limit (100min or TBA). The student will be allowed to refer to their notes, and have only one attempt unless notified.
 - More detailed information will be provided for the quiz format and due time etc., via the course announcement.

4. Final Exam (30% of the final grade, 100pt base)

- The final exam will be accumulative.
- The exam format will be almost the same as the quizzes - a timed exam (150min or TBA), with one attempt only.
- The final exam is scheduled on Wednesday, December 16th, the student will be asked to schedule their exam time slot of the day upon their convenience.
 - Important) alternative exam slots: There are specially designated remote asynchronous exam slots by the university. The student can choose any one exam slot, but only one, from the following: Sunday, December 20 from 4 - 7pm and 8 -11pm, and Tuesday, December 22 from 4 - 7pm and 8 - 11pm (All times EST).
- More information will be announced.

V. ACADEMIC INTEGRITY

Any activities that violate academic integrity will not be tolerated. Violators are subject to the terms and conditions specific to this course as well as the fullest extent of disciplinary action that Rutgers University allows and/or recommends. For the current academic integrity policy (updated June 2020), visit:

<http://nbacademicintegrity.rutgers.edu/home/academic-integrity-policy/>

VI. ACCOMMODATION FOR STUDENTS WITH DISABILITIES

Please feel free to reach out to for any issues. For more information, visit Rutgers office of disability service at <https://ods.rutgers.edu>

VII. COURSE TOPICS AND SCHEDULE

VII-1. TOPICS

UNIT 1 The Basics of Good Reasoning - Ch1, 2, 6 (198-203) & Supplementary Readings

1. The Basic Concepts
 - Arguments/Non-Arguments
 - Identifying Arguments: diagramming method
2. Argument Analysis
 - Deductive and Inductive Arguments
 - Validity, Soundness, Cogency, Strength
 - Proving Invalidity using Counterexamples

UNIT 2 Deductive Reasoning

- UNIT 2-1 Categorical logic - Ch 3

1. Translation, Four Standard Categorical Claims, Venn diagrams

2. The valid inference between categorical claims: The square of opposition, Three operations
3. Validity test of categorical arguments: syllogisms

- UNIT 2-2 Propositional logic - Ch 4, 5, 6

1. Translation, The system of Propositional Logic
2. Truth Table and Validity Test
3. Rules of deductive Inference
4. Formal Fallacies

UNIT 3 Inductive Reasoning - Ch7, 10

1. Probability
2. The problem of induction
3. Informal Fallacies

Topics of Application & Discussion* - Supplementary Readings

1. Gambler's fallacy
2. Defense of God's existence
3. Dilemmas & Puzzles
4. Fake News
5. Artificial Intelligence and logic, AI's decisions

VII-2. IMPORTANT DATES

- | | |
|-------|--|
| 9/2 | Session 1 Daily Assignment due |
| 9/25 | 1 st Home Assignment due |
| 9/30 | Quiz 1 & 1 st Purge Day (the last day to submit any assignments that were assigned before this date for partial credits) |
| 10/28 | Quiz 2 & 2 nd Purge Day (the last day to submit any assignments that were assigned after the 1 st purge day and before this date for partial credits) |
| 11/18 | Quiz 3 & 3 rd Purge Day (the last day to submit any assignments that were assigned after the 2 nd purge day and before this date for partial credits) |
| 12/9 | Quiz 4 |
| 12/11 | No class; 4 th Purge Day (the last day to submit any assignments that were assigned after the 2 nd purge day and before this date for partial credits) |
| 12/16 | Final Exam* (see other optional dates/time slots, in p.4 IV.4) |

VII-3. COURSE SCHEDULE

- The reading & assignments schedule is subject to change.
- Any updates or changes on the schedule, readings, assignments dues will be announced via Canvas “Announcements.”

Session	Unit	Topics	Readings	Assignments Due
Session1	Course Intro	Course Introduction	- Syllabus - Lecture Notes Introduction	Daily Assignment Due 9/2 Mock quiz; Textbook order; Reading the syllabus; Navigating course webpage
Session2	Unit 1 Preliminaries & Ch.1	-Logical Correctness vs -Inductive Deductive reasoning	- Supplementary Reading “The scope of logic” - Lecture Note	Daily Assignment Due 9/4 Questions/Examples from Lecture Note 1
Session3		-Claims (statements) -Different types of claims -Operators -Major Operators	- Textbook pp. 3 – 19 - Lecture Note	Daily Assignment Due 9/9 Some questions chosen - from the questions in <i>Getting familiar with...</i> (GFW) on pp.11-12, pp.17-18 - from Lecture Note
Session4		- Quantifiers - Evidence - Arguments - relation between premises	- pp. 20 – 37 - Lecture Note	Daily Assignment Due 9/11 Questions from GFW on p.19, pp.26-27, pp.32-33
Session5		- Extraneous material - Implicit claims - Ambiguity and vagueness	- pp. 44 – 59 -Lecture Note	Daily Assignment Due 9/16 Questions from GFW on pp. 49-50, p.54, p. 59
Session6	Ch. 2	- Argument form - Two types of argument (Valid/strong; Sound/cogent)	- SPPL RDG II pp.7-10 (Hardegree’s Section1.5-1.6) - Textbook Ch 2. pp. 55 – 74 - Lecture Note	Daily Assignment Due 9/18 Questions from GFW on pp.63-64, pp.70-71

Session7	Unit 1 Practice	-More on Validity & Counter-examples -Diagraming Arguments: Basic method	- SPPL RDG II pp.13-21 (Section1.8-1.9) - SPPL RDG III (Diagramming Arguments) - Lecture Note	Daily Assignment Due 9/23 Questions from Lecture Note and supplementary Readings
Session8		- Diagraming Arguments II: Practice	- SPPL RDG III (con't) - Lecture Note	Home Assignment I Due 9/25
Session9	Quiz 1 (Due: 9 PM, 09/30, Wednesday)			
	Unit 1 Questions from Exercises on pp. 38-41, Exercises on pp. 75-77 & from Daily Assignments & examples from Lecture Notes			
	1st Purge Day (9 PM, 9/30, Wednesday)			
	: Deadline for late submission for any works assigned between sessions 1 and 9. No credit will be given for any submissions made after this date.			
Session10	Unit 2 - 1 Categorical Logic	- Categories; Relating categories to one another -Four Standard categorical claims	- pp. 81 – 92 - Lecture Note	Daily Assignment Due 10/2 Questions from GFW on pp.84-85, p.92
Session11		- The traditional square of opposition	- pp. 93 – 97 - Lecture Note	Daily Assignment Due 10/7 Questions from GFW on p.97 & practice questions from Lecture Note 8
Session12		- Conversion, obversion, and contraposition- Translation tips	- pp. 97 – 101 - Lecture Note	Daily Assignment Due 10/9 Questions on Lecture Note 9
Session13		- Validity test with Venn diagrams	- pp.101 - 107	Home Assignment II Due 10/14
Session14	Unit 2 - 2 Propositional Logic Ch. 4	-A new language, Translating English - Necessary, sufficient conditions	- pp.117-126 - Lecture Note - Supplementary Reading IV (necessary, sufficient conditions)	Daily Assignment Due 10/16 Questions from GFW on pp.125-126

Session15		- Tips for translating more difficult phrases - Translating arguments	- pp.127-133 - Lecture Note	Daily Assignment Due 10/21 Questions from GFW on pp.130-131
Session16	Unit 2 - 2 Ch. 5	- Constructing truth tables	- pp.140-145 - Lecture Note	Home Assignment III Due 10/23 Questions from GFW on pp.144-145
Session17	Quiz 2 (Due: 9 PM, 10/28, Wednesday)			
	Unit 2-1 Categorical logic & Unit 2-2 Propositional logic; Translations : Questions from Exercises on p.111 (only A and B) and from Daily Assignments & Examples from Lecture Notes)			
	2nd Purge Day (9 PM, 10/28, Wednesday)			
	: Deadline for late submission for any works assigned between sessions 10 and 17. No credit will be given for any submissions made after this date.			
Session18		- Truth tables for operators	- pp.145-151 - Lecture Note	Daily Assignment Due 10/30 Questions from GFW on pp. 150-151
Session19	Unit 2 - 2 Ch. 5	- Using truth tables to test for validity: The long method	- pp.151-155 - Lecture Note	Daily Assignment Due 11/4 Questions from GFW on pp. 155-156
Session20		- Using truth tables to test for validity: The short method	- pp.156-163	Home Assignment IV Due 11/6 Questions from GFW on pp. 155-156
Session21	Unit 2-2	- Deductive inference - Four basic rules of valid inference	- pp.168-175 - Lecture Note	Daily Assignment Due 11/11 Questions from GFW on pp. 174-175
Session22	Ch. 6	- Four more rules of valid inference & Practice	- pp.176 – 185 - Lecture Note	Home Assignment V Due 11/13 Questions from GFW on pp. 184 - 185
Session23	Quiz 3 (Due: 9 PM, 11/18, Wednesday)			
	Unit 2-2 Propositional logic : Questions from Exercises on pp. 133-137, Exercises on pp.163-165 (only A , B , and C) and from Daily Assignments & Examples from Lecture Notes			
11/18	3rd Purge Day (9 PM, 11/18, Wednesday)			
	: Deadline for late submission for any works assigned between sessions 18 and 23. No credit will be given for any submissions made after this date.			

Session24	Unit 2 -2 Ch. 6	- Eleven valid rules of replacement	- pp. 186 – 189 - pp. 198 – 203 - Lecture Note	Daily Assignment Due 11/20 Questions from GFW on p. 189 & pp. 202 – 203
Session25	Unit 3 Ch. 7	- Inductive arguments - Inductive strength -Types of probability	- pp. 213 – 224 - Lecture Note	Home Assignment VI Due 11/25
No Session		Thanksgiving Holiday (11/27 – 11/29); No Class		
Session26	Unit 3 Ch.10	- informal fallacies -Argumentum ad ignorantiam	- pp. 316 – 339 - Lecture Note	Daily Assignment Due 12/2 Questions from GFW on pp. 338-339
Session27	Unit 3 Ch. 10	- From Circular argument to Composition and division	- pp. 339 - 349 - Lecture Note	Daily Assignment Due 12/4 Questions from Exercises A on pp. 349 - 351
Session28 Last Class	Review Session & Quiz 4 (Due: 9 PM, 12/9, Wednesday) TBA			
	Reading Day; No Class 4th Purge Day (9 PM, 12/11, Friday) : Deadline for late submission for any works assigned between sessions 24 and 28-. No credit will be given for any submissions made after this date.			
	Final Exam (Due: 9 PM, 12/16, Wednesday) - see other optional dates/time slots, in p.4 IV.4			