

# Philosophy 201: Introduction to Logic

Online, Fall 2020

Instructor: Yoonhee Kang

Contact: [yk512@scarletmail.rutgers.edu](mailto:yk512@scarletmail.rutgers.edu) or message via Canvas Inbox

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

## I. COURSE DESCRIPTION:

This course is an introduction to traditional categorical logic and modern symbolic logic. Logic is the study of correct reasoning and symbolic logic studies reasoning using formal languages. We will learn how to clarify the structure of an argument, translate the argument written in natural language (e.g. English) into symbols, and evaluate the symbolic arguments. Three deductive systems will be discussed: Categorical logic, Propositional logic, and Predicate logic.

We will begin with categorical logic. The validity of a categorical argument depends on the relationships among classes, sets, or categories. We will practice how to analyze categorical claims with quantifiers (some, no, all).

Then, we will discuss propositional logic. Propositional logic offers analytic tools for logical operators such as “and,” “or,” and “not.” We will practice validity tests using truth tables and various types of proofs by applying inference rules.

Lastly, we will turn to predicate logic. Predicate logic subsumes propositional logic but affords us additional tools to represent the ideas of “some” and “all” and evaluate inferences.

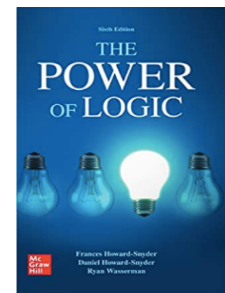
Philosophy 201 satisfies a Cognitive Skills and Processes: Quantitative and Formal Reasoning requirement of the Permanent Core Curriculum.

Core Curriculum Learning Goal: Philosophy 201 meets Goal (a): “Apply effective and efficient mathematical or other formal processes to reason and to solve problems.”

## II. REQUIRED TEXT

**The Power of Logic, 6<sup>th</sup> Edition** (by Frances Howard-Snyder, Daniel Howard-Snyder, Ryan Wasserman)

ISBN-13: 978-1259848070 ISBN-10: 1259848078



- Make sure you order the 6<sup>th</sup> edition.
- The university bookstore has the 6<sup>th</sup> edition in stock; you can easily find it from other major online sellers. Here's the publisher's (McGraw-Hill) page: <https://www.mheducation.com/highered/product/power-logic-howard-snyder-howard-snyder/M9781259231209.html>

- Textbook rental or E-book options with affordable prices are available.
- Important!

This course does NOT require your access to *Connect* (McGraw-Hill's online course service). So you can purchase the lowest-priced version.

### III. TECHNICAL SUPPORT

If you have trouble accessing the course material due to technical issues, please visit <https://rutgersonline.desk.com> or contact 848-445-4357 during weekday business hours, or email at [help@oit.rutgers.edu](mailto: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 -----	20 %
3) Three Quizzes -----	30 %
4) Final Exam (accumulative) -----	35 %

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 designed to encourage and help the student’s self-review. Each Daily Assignment quiz consists of five to fifteen questions,

mostly chosen from the textbook exercises and sample questions discussed in the lecture notes. All questions from daily assignments will serve as study questions for the actual exams.

- 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.
  - (Tip!) Get advantage from Web Tutor! Note that most of the textbook exercises solutions are provided by “The Power of Logic Web tutor” (Make sure it’s for the 6th edition: <http://www.poweroflogic.com/6e/> ).
- 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 three so called “purge” days during the semester: October 2<sup>nd</sup>, October 30<sup>th</sup> December 11<sup>th</sup>.
  - Any submissions made *after* the relevant purge day will not be credited (all assignments will be open throughout the semester for the student’s review purpose)

## **2. Home Assignment and Participation (20% of the final grade, 100pt base)**

- There will be seven low stake homework assignments and/or class activities such as writing a short post in the discussion forum.
- Grading policy:
  - Each home assignment will be graded in either one of these ways, and will be announced: regular grading or pass/fail or credit/non-credit
  - Home Assignment and Participation grade is determined simply by the sum of each submitted assignment’s grade.
- 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 (see the three “purge” days above).
- Mandatory Office Hours participation: every student is required to have at least one time of one-on-one office hours between October 20<sup>th</sup> and October 30<sup>th</sup>.

### 3. Three Quizzes (30% 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 (90 minutes or more, TBA). The student will be allowed to refer to their notes, and have only one attempt.
- More detailed information will be provided for the quiz format and due time etc., via the course announcement.

### 4. Final Exam (35% 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 16<sup>th</sup>, 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, visit: <http://academicintegrity.rutgers.edu/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. IMPORTANT DATES

- 9/2 Session 1 1<sup>ST</sup> Daily Assignment due
- 9/16 1<sup>st</sup> Home Assignment due
- 10/2 Quiz 1 & 1<sup>st</sup> Purge Day (the last day to submit any assignments that were assigned before this date for partial credits)
- 10/30 Quiz 2 & 2<sup>nd</sup> Purge Day (the last day to submit any assignments that were assigned after the 1<sup>st</sup> purge day and before this date for partial credits)
- 11/25 Quiz 3
- 12/11 3<sup>rd</sup> Purge Day (the last day to submit any assignments that were assigned after the 2<sup>nd</sup> purge day and before this date for partial credits)
- 12/16 Final Exam\* (see optional dates/time slots in above IV.4)

## VII. 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	<b>Daily Assignment Due 9/2</b> Textbook order; Reading the syllabus; Navigating course webpage
Session2	<b>Preliminaries</b> : Basic Concepts	- Validity and Soundness - Arguments and non-arguments	Ch.1) 1.1 Ch.2) 2.1	<b>Daily Assignment Due 9/4</b>
Session3		- Forms and validity	Ch.1) 1.2	<b>Daily Assignment Due 9/9</b>
Session4		- Counter-examples and Invalidity	Ch.1) 1.3	<b>Daily Assignment Due 9/11</b>
Session5		<b>* Practice</b> - Strength and Cogency -Definitions	Ch.1) 1.4 Ch.3) 3.2	<b>HOME ASSIGNMENT I Due 9/16</b>
Session6		<b>Unit 1</b> Categorical Logic	- Categorical Statements - Venn diagrams and Categorical statements	Ch.5) 5.1 Ch. 6) 6.2
Session7	- The traditional & modern Square of Opposition		Ch.5) 5.1 Ch. 6) 6.2	<b>Daily Assignment Due 9/23</b>
Session8	- Further immediate inferences		Ch.5) 5.2 Ch.6) 6.4	<b>HOME ASSIGNMENT II Due 9/25</b>
Session9	- Venn diagrams and Categorical syllogisms		Ch.6) 6.3	<b>Daily Assignment Due 9/30</b>
Session10	<b>Quiz 1 (Due: 9 PM, 10/2, Friday)</b>			
	<b>1<sup>st</sup> Purge Day</b> (9 PM, 10/2 Friday) : 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.			

Session11		- Translation I Symbolizing English Arguments I	Ch.7) 7.1	<b>Daily Assignment Due 10/7</b>
Session12	<b>Unit 2 -1</b> Propositional Logic (Statement Logic) : Truth tables	* <b>Practice</b> translation II	Ch.7) 7.1	<b>Daily Assignment Due 10/9</b>
		- Truth Tables I	Ch.7) 7.2	
Session13		- Truth Tables II	Ch.7) 7.2	<b>HOME ASSIGNMENT III 10/14</b>
Session14		- Using Truth Tables to Evaluate Arguments	Ch.7) 7.3	<b>Daily Assignment Due 10/16</b>
Session15		- Abbreviated Truth Tables - Logically Significant Categories and Relationships	Ch.7) 7.4 Ch.7) 7.5	<b>HOME ASSIGNMENT IV Due 10/21</b>
Session16	<b>Unit 2-2</b> Propositional Logic : Proofs	- Implicational Rules of Inference I	Ch.8) 8.1	<b>Daily Assignment Due 10/23</b>
Session17		Implicational Rules of Inference II Equivalence Rules I	Ch.8) 8.1 Ch.8) 8.3	<b>Daily Assignment Due 10/28</b>
Session18	<b>Quiz 2 (Due: 9 PM, 10/30, Friday)</b>			
	<b>2<sup>nd</sup> Purge Day</b> (9 PM, 10/30, Friday) : Deadline for late submission for any works assigned between sessions 11 and 17. No credit will be given for any submissions made after this date.			
Session19		- Equivalence Rules II	Ch.8) 8.3 Ch.8) 8.4	<b>Daily Assignment Due 11/4</b>
Session20		- Conditional Proof - Reductio ad Absurdum	Ch.8) 8.4 Ch.8) 8.5	<b>HOME ASSIGNMENT V Due 11/6</b>

Session21	<b>Unit 3</b> Predicate Logic	- Translation: The Language of Predicate Logic	Ch.9) 9.1	<b>Daily Assignment Due 11/11</b>
Session22		Translation II: The Language of Predicate Logic	Ch.9) 9.1 (con't)	<b>Daily Assignment Due 11/13</b>
Session23		Constructing Proofs	Ch.9) 9.3	<b>Daily Assignment Due 11/18</b>
Session24		Quantifier Negation, Reductio Ad Absurdum and Conditional Proof	Ch.9) 9.4	<b>Daily Assignment Due 11/20</b>
Session25	<b>Quiz 3 (Due: 9 PM, 11/25, Wednesday)</b>			
<b><i>Thanksgiving Holiday (11/27 – 11/29)</i></b>				
Session26	<b>Unit 3</b>	The Logic of Relations: Symbolizations	Ch.9) 9.5	<b>HOME ASSIGNMENT VI Due 12/2</b>
Session27	Predicate Logic	The Logic of Relations: Proofs	Ch.9) 9.6	<b>Daily Assignment Due 12/4</b>
Session28 <b>Last Class</b>	<b>Unit 3 Practice &amp; Overflow (12/9, Wednesday)</b> <b>Final exam review</b>			
<b>3<sup>rd</sup> Purge Day</b> (9 PM, 12/11 Friday) : Deadline for late submission for any works assigned between sessions 19 and 28. No credit will be given for any submissions made after this date.				
<b>Final Exam (Due: 9 PM, 12/16, Wednesday)</b> (see the optional dates/time slots p.4 IV.4)				