Philosophy 201: Introduction to Symbolic Logic

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1. Course Location and Meeting Times:

The course takes place on College Avenue Campus in the new Academic Building, Room 4450. Class times are Tuesdays and Thursdays during period 5, from 2:50pm - 4:10pm.

I will also be holding office hours from 1:00pm - 2:30pm on Tuesday and Thursday. Office hours will be located in the shared PTL room of the philosophy department, located at 106 Somerset St. on the 5th floor. Email Aaron or Daniel if you need to schedule an appointment outside of those times.

2. Course Description:

This course is an introduction to symbolic logic. Logic is the study of reason and arguments. Symbolic logic uses formal languages, similar to mathematic symbols, to analyze the features of a line of reasoning or argument. We will begin with forming valid arguments and presenting our arguments in clear, unambiguous sentences. We will then work on translating our arguments into sentential logic, which will enable us to represent terms like "and" and "not", and will also enable us to evaluate the truth of various inferences. Then, we will turn to predicate logic. Predicate logic incorporates sentential logic while providing us the additional tools needed to represent terms like "something" and "everything" and evaluate inferences involving these terms. During the course, we will learn to construct true tables and truth trees to break down complex inferences and determine their truth conditions.

Students who complete the course work will leave with greatly enhanced powers of reasoning and argumentation, providing the student the tools necessary to do well on the LSAT, in more advanced logic courses, and in advanced philosophy courses in all core areas. Students will also develop their capacity to rigorously break down an argument and analyze the truth conditions of its component parts. Analytic abilities are essential to a variety of fields and situations, as well as in everyday arguments and discussions. Any time we try to infer some piece of knowledge based on evidence, we use logic, and symbolic logic allows us to avoid ambiguity and error in our thought process.

3. <u>Course Materials</u>:

The only required material for this course is *Symbolic Logic: A First Course* by Gary Hardegree. The textbook and all supplemental materials will be available for free on Sakai.

4. <u>Core Curriculum Information</u>:

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."

5. <u>Class Schedule</u>:

Date	Topic	Reading	Exercises
9/6	First Meeting		
9/8	Basic Concepts	1.1-1.9	1A- 1B1-5
9/13	Basic Concepts	1.1-1.9	1B-1C
9/15	Truth Functional Connectives	2.1-2.13	2A- 2B (1-10)
9/20	Truth Functional Connectives	2.1-2.13	2B (11-25)- 2C
9/22	Validity	3.1-3.5	3A-3D

Date	Topic	Reading	Exercises
9/27	Translations in Sentential Logic	4.1-4.17	4A
9/29	Translations in Sentential Logic	4.18-4.23	4B
10/4	Translations in Sentential Logic	4.24	4C-D
10/6	Derivations in Sentential Logic	5.1-5.5	5A
10/11	Derivations in Sentential Logic	5.6-5.8	5B-5C
10/13	Derivations in Sentential Logic	5.9-5.12	5D-5F
10/18	Derivations in Sentential Logic	5.13-5.14	5G (91-96)
10/20	Translations in Monadic Predicate Logic (and Exam 1 Review)	6.1-6.5	6A
10/25	**EXAM 1**		
10/27	Translations in Monadic Predicate Logic	6.6-6.10	6B-6C
11/1	Translations in Monadic Predicate Logic	6.11-6.16	6D-6F (91-92, 98-99)
11/3	Translations in Monadic Predicate Logic	6.17-6.18	6F (93-97, 100)-6G
11/8	Translations in Monadic Predicate Logic	6.19-6.20	6H-6I
11/10	Translations in Polyadic Predicate Logic	7.1-7.3	7A-7B
11/15	Translations in Polyadic Predicate Logic	7.4-7.6	7C-7D
11/17	Derivations in Predicate Logic (and Exam 2 Review)	8.1-8.6	8A
11/22	**EXAM 2**		
11/29	Derivations in Predicate Logic	8.7-8.8	8B-8C
12/1	Derivations in Predicate Logic	8.9-8.10	8D
12/6	Derivations in Predicate Logic	8.11	8E
12/8	Derivations in Predicate Logic	8.12	8F (51-54, 56, 57)-8G (61-64)
12/13	Logical Fallacies, Formal and Informal	TBA	
12/15	Final review		
12/16	**FINAL EXAM 8am-11am in Room 4450**		

6. <u>Grading and Assignments:</u>

A. Homework (20%)

Logic, like mathematics, largely involves acquiring skills rather than merely memorizing facts. To acquire the skills needed in logic, it is important that you practice. And so, each day there will be homework assignments using the exercises in the textbook. Homework assignments will make up 20% of your overall grade. I will collect five homework assignments at random. Collection of assignments will be unannounced.

B. Short Quizzes (20%)

We will have a total of four in-class quizzes that will be worth 20% of your overall grade. Quizzes will also be unannounced.

C. Exams (60%)

There will be three in-class exams. Each exam will be worth 20% of your total grade. Doing your homework and preparing for quizzes is essential to doing well on the exams.

Late Work Policy: If you miss a homework assignment, quiz, or exam, you will not be able to make it up unless you have an appropriate excuse for your absence and the relevant documentation.

Final Grade Calculation:

(1) Homework Assignments—A total of five collected, worth 20% of your overall grade

(2) Quizzes—A total of four, worth 20% of your overall grade
(3) Exams—A total of three, worth 60% of your overall grade

Your letter grade will be determined by the following grading scale:

A	B+	B	C+	C	D	F
100%-90%	89%-87%	86%-80%	79%-77%	76%-70%	69%-60%	59%-0%

7. <u>Sakai Site</u>:

 The course will have a Sakai site. All reading materials and important information, including your grades, will be available on the site. You can check the Sakai site for this information, and an email will be sent to you when any information is added to the site. Emails sent through Sakai will be sent to your Rutgers email address. So, if you do not check the Sakai site regularly and primarily use another email aside from your Rutgers one e.g., Google, you should set up the email that you primarily use so that messages sent from Sakai to your Rutgers email account can be forwarded to your primary email address.

The Sakai site can be accessed at:

https://sakai.rutgers.edu/portal

You will need your Rutgers NetID and password to access the site. Once you have accessed the course page on Sakai, you will see several "buttons" on the left hand side of the screen.

Important: It is your responsibility to check your email and Sakai to keep up with important information about the course. I will both send emails and post announcements as necessary. Every so often, I may feel the need to send a message elaborating on difficult material presented in the lecture. If I do so, you are responsible for reading it. Also, if there are changes in the syllabus, material to be covered and so forth, I will send a message. So, again, keep up with your emails as it is your responsibility to read them and the material posted on Sakai.

8. <u>Attendance Policy</u>:

Students are expected to attend all classes. I will not lower your grade for missing classes, but absences, particularly more than one or two over the term, will likely have a harmful effect on your learning and hence on your final grade.

My policy for missed classes and missed exams is that students who miss classes are responsible for finding out **from other students** what they missed. I advise and encourage all students to exchange contact information with at least three other students in class for that purpose.

If you miss an assignment and want to make it up, you will need to provide a doctors note or other material excusing your absence.

9.<u>Disruptive Behavior:</u>

You are welcome to do as much or as little work as you like in my course, so long as you are mindful of the consequences; but I will not permit any student to disrupt the class environment by distracting me or any other students from our work.

In particular, please note that none of the following disruptive activities are permitted:
    a) Engaging in private conversations during lecture components of the class;
    b) Using electronics in class; or
    c) Engaging in discussions unrelated to the course during group work time.

If you cannot adhere to this code of conduct on a particular day, please don't attend class on that day. If you repeatedly disrupt class, I will ask you to leave.

10. <u>Policy on Cheating:</u>

Anyone caught cheating in any way on any quiz or exam, or aiding anyone else in cheating, will receive an automatic F for the course and be referred to the appropriate authorities for further measures to be taken. These further measures may include suspension or expulsion.