

# Symbolic Logic

*NOTE: it is your responsibility to read this document carefully. This is an agreement between you and your instructor. If you email me about something that is obviously stated in the syllabus, you will either receive no answer or I will reply, simply, "Read the syllabus!" However, if you read the syllabus and you still do not have an answer, then email me with your question.*

## I Course Information

- Course number: PHI 3130.
- Sections 3312, 3319, 3320, 3321, 3322, 3323.
- Lecture:
  - Mondays and Wednesdays, Period 7 (1:55 – 2:45).
  - Location: Keene–Flint Hall 105 (and Zoom).
- Discussion:
  - Section 3312: Fridays, Period 5 (11:45 – 12:35), Matherly Hall 0010.
  - Section 3319: Fridays, Period 7 (1:55 – 2:45), Anderson Hall 0019.
  - Section 3320: Fridays, Period 8 (3:00 – 3:50), Matherly Hall 0108.
  - Section 3321: Fridays, Period 5 (3:00 – 3:50), Matherly Hall 0010.
  - Section 3322: Fridays, Period 7 (3:00 – 3:50), Anderson Hall 0019.
  - Section 3323: Fridays, Period 8 (3:00 – 3:50), Matherly Hall 0108.
- Instructor:
  - Rodrigo Borges
  - Office: Griffin–Floyd Hall, room 314.
  - Office Hours: Fridays 2:00pm – 5:00 (or by appointment).
  - Contact Information: rodrigo.borges@ufl.edu.
- Teaching Assistant:
  - James Simpson
  - Office: Griffin–Floyd Hall, room 3.
  - Office Hours: Tuesdays and Thursdays 9:30am – 11:00 (or by appointment).
  - Contact Information: simpson.james@ufl.edu.

## 2 Course Goals

This course will familiarize students with the syntax, semantics, and some of the metalogical results of first-order propositional and predicate logic. Students will also learn some extensions of those first-order logics, such as modal logic. Finally, we will explore connections and differences between formal logic and human reasoning.

### 2.1 Textbook

The textbook for the course is *The Logic Book* (6th edition). Please note that this course will be participating in the UF All Access program for Spring 2021. The ALL ACCESS program will allow you to gain access to the required materials for the course at a significantly discounted price.

- Please see *UF All Access PDF* posted in Canvas for directions on how to opt-in and access your course materials.

Go to <https://bsd.ufl.edu/allaccess> to log into your GatorLink account. You will see a list of classes in which you are enrolled that are participating in UF All Access, with the prices. Click the Opt-in check box next to the appropriate class. You may have more than one class that you are taking participating in the program. Students then need to click the button below to authorize the charges.

For Connect Users: The access code is now displayed. NOTE: Copy this code now. You will use this code to register for McGraw-Hill Connect, which is required for this course. You can open a new tab and log into Canvas for your course then follow the instructions below to register for Connect.

For digital eBooks: After opting-in, you'll receive an email at your @ufl.edu within 24 hours of opting in, which will provide you with access to your bookshelf

The charge for the materials will be posted directly to your student Bursar account and is eligible to be paid automatically by qualifying financial awards. If you drop the course during the add/drop period, no charges will appear.

The classes that you opted into will continue to be displayed at <https://www.bsd.ufl.edu/AllAccess/OptIn> through January 28th. Be sure to register the access code before this deadline.

Contact your Bookstore on campus with any questions. [allaccess@bsd.ufl.edu](mailto:allaccess@bsd.ufl.edu)

You will also need to purchase and register an iClicker. For more details, see the section below on quizzes.

## 3 Course Requirements

Six different instruments will be used in order to measure student progress through the course. The name of each instrument, and the relative weight each of them carries in determining your final grade is the following; a brief description of each instrument follows.

Assignment	Total Number	% of Course Grade
Homework	15	15%
Tests	10	20%
Polls	29	10%
Participation in Discussion Boards	15	10%
Midterm Exam	1	20%
Final Exam	1	25%

### 3.1 Lecture and Discussion Section Attendance

Attendance is required and will be taken. Students who miss more than two (2) classes without proper justification will harm their grade. However, attendance in week 1, during the add-drop period, will not influence student's grade.

All students get two (2) free, no-questions-asked, absences. Three (3) unjustified absences will cause your course grade to be lowered half letter grade (i.e., from B to B-, C+ to C, and so on). Four (4) unjustified absences will cause your course grade to be lowered a whole letter grade (i.e., from B to C, B- to C-, C+ to D+, and so on). Five (5) or more unjustified absences will cause you to fail the course. University policies determine what counts as a justified absence, or whether you may make-up an assignment. University policies that can be found at:

- <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

### 3.2 Homework

Homework will be posted on Canvas right after each Wednesday lecture. Answers are due 11:30 AM on Friday.

Unless they have a valid excuse, students will not be allowed to make up missed homework.

### 3.3 Tests

There will be ten (12) tests during the course. I will drop the two lowest grades.

### 3.4 Polls

There will be polls in class throughout the semester. Polls will use the iClicker system. For information on this system, please see

- <https://classrooms.at.ufl.edu/classroom-technology/iclicker-response-system/>

For this class, you will use the iClicker Reef application, either on a smartphone or a computer.

You must register your clicker as soon as possible, but certainly before the first graded poll on Wednesday 1/25/21. See the iClicker registration page for more details.

There will be no poll in the first week of the semester, to give everyone time to acquire the application.

There will be ungraded polls in the second week of the semester, to allow you to check your clicker is working properly. At all times during the semester, it is your responsibility to make sure that you have your clicker with you, and that it is working properly. Makeup polls will not be given for clicker problems.

Starting on Wednesday 1/27/21, there will be at least two graded poll questions in every lecture. Typically, the first question will be soon after class begins, and the second will be at the end of class. For each question, you will receive two points for a correct answer, one for an incorrect answer, and zero for not answering.

You will receive a poll grade for each lecture from 9/9/20. Your three (3) lowest scores will be dropped. The remaining scores will each count equally towards your poll grade. Dropping those three lowest scores will allow for occasional absences. Make-up polls will only be given if you have an appropriate excuse that shows you had to miss two or more classes during the semester.

Unless otherwise determined by your instructor, polls are individual assignments. You may not consult other students while taking an individual poll. You may not use someone else's clicker for them, or have someone else use your clicker. These are violations of academic honesty (see section 5 below).

### 3.5 Participation in Discussion Boards

You are required to come up with an appropriate question about the material (readings and/or lectures) in at least eight (8) different discussion boards. Questions must be submitted by midnight Wednesday. You will not be able to see the discussion board and others' submitted questions until you have submitted your own.

Once you have access to the discussion board, you should read what other questions students have posted. Think about which questions you would most like to see answered, and then use the 'like' function to indicate those you most want addressed. You should complete this by Thursday evening, since your vote will inform the discussion in class on Friday.

The quality of your question in that discussion board is not a factor in determining your grade. What *is* a factor in determining your grade is following: whether or not you submit appropriate questions for at least six of the discussion boards. Here's what makes a question an appropriate one.

There are two requirements.

1. *Specificity*: your question must be reasonably specific. That is, it must refer to some particular point in the material introduced that week. You will not get away with open-ended questions like 'What is A's view about X?'
2. *Precision*: your question must fit into one of the categories below. When you post your question, you must indicate which category it belongs to. (You can simply put the name of the category at the start of your question.)
  - *Clarification*: questions of clarification ask for help in understanding a specific point or passage in the lectures or readings. For example, you might ask, 'Why does Descartes bring up the discussion of an "evil demon" set on deceiving him if he doesn't actually think such a demon exists? How could that demon be relevant to his argument if he doesn't think it's real?'
  - *Significance*: questions of significance ask how a particular view or argument in a reading or lecture might have broader significance – that is, how it might have relevance for other things that aren't explicitly addressed in the readings or lectures. For example, you might ask, 'If Descartes is right that we don't know anything about the external world, does that mean that we should never trust what science tells us? Does it mean that we should live as if every day is our last day? What difference would it make if he's right?'
  - *Criticism*: questions in this category proposes a criticism of some argument or claim made in a reading or lecture. For example, you might ask, 'Descartes thinks we can't know at the moment that we're not just dreaming everything, but this seems to me false. If I flap my arms right now and don't find myself flying around like in a dream, doesn't that show that I'm not just dreaming?'

If you submit an appropriate question for at least five of the regular discussion boards, your participation grade is a perfect '10.' You lose one point for each question shy of eight you fail to submit. If you submit less than five questions, you get zero (0) points.

### 3.6 Midterm and Final Exams

There will be a take-home midterm and a final exam. See the schedule below for due dates.

The following grade scale will be used to assign final letter grades for the course. See UF grading policies for assigning grade points at:

- <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

	Grade Scale	Grade Value
A	100 - 93	4.00
A-	92 - 90	3.67
B+	89 - 86	3.33
B	85 - 82	3.00
B-	81 - 79	2.67
C+	78 - 75	2.33
C	75 - 72	2.00
C-	71 - 69	1.67
D+	68 - 66	1.33
D	65 - 62	1.00
D-	61 - 60	0.67
E	59 - 0	0.00

## 4 Academic Honesty

UF students are bound by The Honor Pledge, which states, ‘We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: ‘On my honor, I have neither given nor received unauthorized aid in doing this assignment.’ The Honor Code

- <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class. Plagiarism on any assignment will automatically result in a grade of ‘E’ for the course. Plagiarism is defined in the University of Florida’s Student Honor Code as follows: ‘A student shall not represent as the student’s own work all or any portion of the work of another. Plagiarism includes (but is not limited to): a. Quoting oral or written materials, whether published or unpublished, without proper attribution. b. Submitting a document or assignment which in whole or in part is identical or substantially identical to a document or assignment not authored by the student.’ Students found guilty of academic misconduct will be prosecuted in accordance with the procedures specified in the UF honesty policy.

## 5 Students with disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drp>). The Dean of Students Office will provide documen-

tation to the student who must then provide this documentation to the instructor when requesting accommodation.

## 6 Online Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester. Students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

## 7 Office Hours

I strongly encourage you to set up a meeting to discuss anything related to the course. Rodrigo will hold office hours Fridays 2:00pm – 5:00 (or by appointment). To set up an appointment please email me at: [rodrigo.borges@ufl.edu](mailto:rodrigo.borges@ufl.edu).

James Simpson (TA) will hold office hours Tuesdays and Thursdays 9:30 — 11:00 (or by appointment). To set up an appointment please email James at: [simpson.james@ufl.edu](mailto:simpson.james@ufl.edu).

## 8 Class Schedule (Subject to Change)

- We will cover sections 1–4 in the first half of the course (7 weeks).
- The remainder of the course will cover sections 5–7.

1. INTRODUCTION TO DEDUCTIVE LOGIC
2. SENTENCE LOGIC: SYNTAX AND SEMANTICS
3. SENTENCE LOGIC: DERIVATIONS
4. SENTENCE LOGIC: METATHEORY
5. PREDICATE LOGIC: SYNTAX AND SEMANTICS
6. PREDICATE LOGIC: DERIVATIONS
7. PREDICATE LOGIC: METATHEORY

Due dates:

- Polls: each and every lecture.
- Discussion boards: 13 boards, each due midnight Wednesday from 1/13 to 4/7.
- Tests: 12 tests, each due midnight Sunday from 1/17 to 4/4.
- Homework: posted every Wednesday; due every Friday morning.
- Midterm examination: take-home exam due 3/1.
- Final examination: take-home exam due 4/24.