

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, 3313, 3314.
- Lecture:
 - Mondays and Wednesdays, Period 7 (1:55PM – 2:45).
 - Location: Little Hall 0101.
- Discussion:
 - Class 15660 (section 3100): Fridays, Period 4 (10:40 AM – 11:30 AM), Turlington Hall 2336.
 - Class 18583 (section 3101): Fridays, Period 6 (12:50 PM – 1:40 PM), Dauer Hall 0342.
 - Class 18584 (section 3102): Fridays, Period 7 (1:55 PM – 2:45 PM), Weimer Hall 2050.
- Instructor:
 - Rodrigo Borges
 - Office: Griffin–Floyd Hall, room 314.
 - Office Hours: Tuesdays 3:00PM – 6:00 (or by appointment).
 - Contact Information: rodrigo.borges@ufl.edu.
- Teaching assistant:
 - John Madock
 - Office: Griffin–Floyd Hall, room 316.
 - Office Hours: Wednesdays 9:00AM – 12:00 (or by appointment).
 - Contact Information: johnmadock@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.

3 Textbook

The textbook for the course is Bergmann, Moor, and Nelson's *The Logic Book* (6th edition, McGraw-Hill). Please note that this course will be participating in the UF All Access program for Spring 2023. 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 17th. Be sure to register the access code before this deadline.

Contact your Bookstore on campus with any questions. allaccess@bsd.ufl.edu

4 Attendance and Classroom Policies

Students are expected to attend class and to have done all assigned reading in advance. Failure to do so will adversely affect students' ability to perform well in this course.

Attendance is required and it will be taken, starting on Wednesday 1/18, using the iClicker app (see below for iClicker information).

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

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

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. However, the recording will not be shared unless you have a valid excuse. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voice recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the 'chat' feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials by students or any other party is prohibited.

In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

1. If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.uflhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.
2. You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.
 - Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
 - Hand sanitizing stations will be located in every classroom.
3. If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test and Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test and Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test and Protect website for more information.
 - Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.
 - If you are withheld from campus by the Department of Health through Screen, Test and Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
4. Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.
5. This course will NOT be synchronously taught on Zoom.

5 Course Requirements

Five 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	% of Course Grade
Homework	20%
Group Projects	20%
Attendance	10%
Midterm Exam	20%
Final Exam	30%
Extra Credit	10%

5.1 Homework

Homework will be posted on Canvas every Wednesday by three o'clock. Answers are due 10:30 AM on Friday. The reason for this deadline is simple: the solution to the questions in the homework will be given in your discussion section Friday. I will drop the three lowest grades. Homework starts Wednesday 1/17, after the add-drop period.

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

5.2 Group Projects

Starting on Friday 1/19, there will be at least one group project during each discussion session. Only students with excused absences will be allowed to make up missed group projects.

5.3 Attendance

Starting on Wednesday 1/17, attendance will be taken on lecture days (Mondays and Wednesdays) using 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 Student Mobile application (or its web version).

You must create an iClicker account and download the app as soon as possible, but certainly before we start taking attendance on Wednesday 1/17. I will allow two (2) unexcused absences without penalty. Every other absence must either be excused by your instructor in accordance with UF attendance policy or your grade will incur a penalty of 2- percentage points of the attendance grade. However, once a student accumulates seven (7) or more unexcused absences in total they will receive a zero in their attendance grade (i.e., 10% of their total grade).

5.4 Midterm and Final Exams

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

5.5 Extra Credit

Each week, during office hours, students have the opportunity of doing extra work for extra credit (to a maximum of 10% of the course grade).

6 Grade Scale

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

7 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.

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

9 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>.

10 Office Hours

I strongly encourage you to set up a meeting to discuss anything related to the course. Rodrigo will hold office hours Tuesdays 3:00pm - 6:00pm (or by appointment). To set up an appointment please email me at: rodrigo.borges@ufl.edu.

John Madock (TA) will hold office hours Wednesdays 9:00-12:00 (or by appointment). To set up an appointment please email John at: johnmadock@ufl.edu.

11 Technical Issues

Please, direct any questions about technical issues you might have to UF Helpdesk. The website is <https://helpdesk.ufl.edu/>. You may also call them at 352 392 4357.

12 Campus Resources

- Health and Wellness:
 1. U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website (www.umatter.ufl.edu) to refer or report a concern and a team member will reach out to the student in distress.
 2. Counseling and Wellness Center: Visit the Counseling and Wellness Center website (www.counseling.ufl.edu) or call 352-392-1575 for information on crisis services as well as non-crisis services.
 3. Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website (www.shcc.ufl.edu).
 4. University Police Department: Visit UF Police Department website (www.police.ufl.edu) or call 352-392-1111 (or 9-1-1 for emergencies).
 5. UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website (www.ufhealth.org/emergency-room-trauma-center).

13 Academic Resources

1. E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
2. Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
3. Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
4. Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
5. Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
6. Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage ([here](#)) for more information.
7. On-Line Students Complaints: View the Distance Learning Student Complaint Process (www.distance.ufl.edu/getting-help/student-complaint-process).

14 Class Schedule (Subject to Change)

1. Introduction to Deductive Logic

- 1/8 - Introduction, syllabus, and validity (reading: ch 1)
1/10 - validity and special cases of validity (reading: ch 1)
1/12 - Discussion
1/15 - holiday

2. The Syntax and Symbolization of Sentential Logic

- 1/17 - The syntax of SL (reading:ch 2.1)
1/19 - Discussion
1/22 - Simple Symbolization (reading: ch 2.2)
1/24 - Complex Symbolization (reading: ch 2.3, 2.4)
1/26 - Discussion

3. The Semantics of Sentential Logic: Truth-Tables

- 1/29 - Truth-value assignment and truth-tables (reading: ch 3.1, 3.2, 3.3, 3.4)
1/31 - Truth-functional properties (reading: ch 3.5, 3.6)
2/2 - Discussion

4. Derivations in Sentential Logic

- 2/5 - The basic SD system (reading: ch 5.1)
2/7 - Validity, entailment, etc. (reading: ch 5.2)
2/9 - Discussion
2/12 - Derivation strategies (reading: ch 5.3)
2/14 - The advanced system SD+ (reading: ch 5.4)
2/16 - Discussion

5. The Metatheory of Sentential Logic

2/19 - Mathematical induction (reading: ch 6.1)
2/21 - Truth-functional completeness (reading: ch 6.2)
2/23 - Discussion

6. Review of Sentential Logic e Midterm Prep

2/26 - validity, the syntax and semantics of SL
2/28 - derivation and metatheory
3/1 - Discussion

3/3 - Midterm is due 11:59pm

7. The Syntax and Symbolization of Predicate Logic

3/4 - English and PL syntax (reading: ch 7.1, 7.2)
3/6 - English and PL syntax (reading: ch 7.1, 7.2)
3/8 - Discussion
3/11 - spring break
3/13 - spring break
3/15 - spring break
3/18 - Symbolization (reading: ch 7.3, 7.4)
3/20 - Symbolization (reading: ch 7.3, 7.4)
3/22 - Discussion

8. The Semantics of Predicate Logic: Interpretations

3/25 - Interpretations (reading: ch 8.1)
3/27 - Quantificational properties (reading: ch 8.2, 8.3, 8.4)
3/29 - Discussion

9. Derivations in Predicate Logic

4/1 - The basic PD system (reading: ch 10.1)
4/3 - The basic PD system (reading: ch 10.1)
4/5 - Discussion
4/8 - ch 10.2
4/10 - The advanced PD system (reading: ch 10.3)
4/12 - Discussion
4/15 - TBD
4/17 - TBD
4/19 - Discussion

10. Final Review

4/22 - review
4/24 - review

5/1 - Final Examination (10:00 - 12:00PM)