Meetings: Tuesdays and Thursdays, 2-3:15pm, CAS 325

Contact Professor Floyd: Department of Philosophy, 745 Commonwealth Avenue, Room 503, 617 353-3745, jfloyd@bu.edu
Office hours: Tues. 3:15-5:30pm, Thurs. 1-1:45pm and by appointment.

Teaching Fellow for PH 360: Anandita Mukherji, anandita@bu.edu. Office hours: TBA

Course Description:
An introductory survey of the concepts and principles of symbolic logic: valid and invalid arguments, logical relations of statements and their basis in structural features of statements, analysis of the logical structure of complex statements of ordinary discourse, and the use of a symbolic language to display logical structure and to facilitate methods for assessing the logical structure of arguments. We will cover the analysis of reasoning with truth-functions (“and”, “or”, “not”, “if ... then”) and with quantifiers (“all”, “some”), attending to formal languages and axiomatic systems for logical deduction.

Throughout, we aim to clearly and systematically display both the theory underlying the norms of valid reasoning and their applications to particular problems of argumentation. The course is an introduction to first-order quantificational logic, a key tool underlying work in foundations of mathematics, philosophy of language and mind, philosophy of science and parts of syntax and semantics. It is largely mathematical and formal in character, but lectures will situate these structures within the context of questions raised in contemporary philosophy of language and mind.

Prerequisites:
An introductory (100-level) philosophy course, sophomore standing and/or permission of the instructor. Some background in elementary logic, discrete mathematics, algebra, computer science and/or the history of ancient or modern philosophy will be helpful.
Website/URL: https://learn.bu.edu. This site contains important course announcements, a copy of this syllabus, the problem sets, and selected solutions to problems, as well as our current grade records on all students (available for checking as soon as they are posted). Students are responsible for learning how to properly access this site and for learning how to download all necessary materials from the site; if you have difficulties, please get help from the help desk at 110 Cummington Street. Students are responsible for noting any errors of transcription in the on-line grade book in a timely fashion by calling them to the attention of their Professor Floyd. Attendance records will be posted on the on-line grade book twice, once after the midterm and once just before the final exam: the number of absences will be recorded.


Examinations:
In class exams: Thursday Feb. 22, 2018, Thursday April 5, 2018
Final exam: TBA

Accommodations for students: Students with a disability which may necessitate an academic accommodation or the use of auxiliary aids and services in a class must initiate the request with the Office of Disability Services. This office will evaluate requests on a case-by-case basis, with required documentation. Please contact them as soon as possible: timely notice is needed to arrange for appropriate accommodations. Go to http://www.bu.edu/disability/services/.

Requirements/Grading Policies:

• Ordinarily each student is expected to do B- level work. All work, including the final grade, is graded on a curve with median grade of a B-, but assessed flexibly, within the multiplier system as follows, to take account of an individual’s own progress and relative strengths. Final grades will be based upon attendance at lectures, homework assignments, and exams, an average of the grades earned in each category. Grades received for each portion of the course are subject to a multiplier, as listed below. Before calculating the final grade, the instructor will drop from the total of nine multiplier components the lowest two components, whatever they are.

Attendance Grade: Counts once
1st Exam Grade Counts once
2nd Exam Grade Counts once
Homework Grade: Counts three times
Final Exam Grade: Counts three times

• Attendance: More than two absences will affect a student’s attendance grade and must be discussed with Professor Floyd. The more classes that
are missed, the more negatively a student’s attendance grade will be affected, in accordance with the student’s relative performance in attendance versus his or her peers. Attendance is defined as signing the attendance sheet that is passed around at the beginning of class; unless you have a legitimate medical excuse, you will be marked absent if you do not sign in. It is the responsibility of each student to make sure that s/he signs the attendance sheet.

- **Homework Assignments**: Students will be given seven homework assignments and are expected to keep up with the reading according to the syllabus. *No late homework assignments will be accepted, and all homework assignments must be typed, unless the instructor gives explicit permission otherwise.* Students are expected to keep copies of problem sets handed in, in case of loss. **All assignments are to be submitted in hardcopy, directly to the Instructor.** Solutions to selected problems will be posted on the course website.

- **Academic Conduct**: Students are reminded of B.U.’s policy concerning cheating on examinations and plagiarism in one’s written work, and are expected to know and understand the BU and CAS Academic Conduct Codes:
  - Undergraduate: https://www.bu.edu/cas/current-students/undergraduate/academic-conduct-code-2/
  - Graduate: https://www.bu.edu/cas/files/2017/02/GRS-Academic-Conduct-Code-Final.pdf

  All cases of suspected academic misconduct will be referred to the Dean’s Office; Professor Floyd will assign a failing grade on any work deemed plagiarized by the Dean. Students are encouraged to discuss logic among themselves, and to share in discussing approaches to problems on problem sets together, but all submitted problem sets and exams are expected to be single-authored. Academic integrity is a value students are expected to practice, not only inside the classroom, but also outside it.

Please **always bring your copy of *Deductive Logic* to class!!! We will be working problems from it.**

**Schedule:**

**Introductory Segment:**

*Reading: Deductive Logic I §§1-8*

1/18 Introduction and overview of the course; the notions of utterance, sentence, eternal sentence, statement and paraphrase

1/23, 25 Truth-functional operations: conjunction, disjunction, negation, conditional, and biconditional. Analysis of ordinary language and para-
phrase into logical notation.
Segment I: Reading: Deductive Logic I §§9-13

– Problem Set I due in class Thursday, 2/1/18

Segment II: Reading: Deductive Logic I §§14-17
2/6, 8 Reasoning about reasoning: the use of mathematical reasoning to prove results about the logical categories. Basic general laws about schemata, validity, implication, and equivalence


– Problem Set II due in class Thursday, 2/15/18

No Class 2/20, Monday Schedule at BU

2/22/18 FIRST IN-CLASS EXAMINATION (Segments I-II)

Segment III: Reading: Deductive Logic II §§18-22
2/27, 3/1 Representing the logical form of statements by monadic quantificational schemata. Interpretation of schemata: universes of discourse and interpretations of predicate letters.


– Problem Set III due in class Tuesday 3/13/18

Segment IV: Reading: Deductive Logic II §§23-27

– Problem Set IV due in class Thursday 3/22/18
Segment V: Reading: Deductive Logic II §§28-31
3/22,27,29 Polyadic predicates (relations); analysis of ordinary language and paraphrase into logical notation.

4/3 Review

4/5/18 SECOND IN-CLASS EXAM (Segments I-V)

Segment VI: Reading: Deductive Logic II §§32-34
4/10,12 Representing the logical form of statements by polyadic quantificational schemata. The interpretation of polyadic schemata.

– Problem Set V due Thursday 4/19/18

Segment VI: Reading: Deductive Logic §§35-38
4/24 Sketch of proofs that the deductive system is sound, that is, gives only correct results, and that the deductive system is complete, that is, gives all the correct results.

Segment VIII: Reading: Deductive Logic §§39-40

– Problem Set VI due in class Thursday 4/26/18

5/1/18 Review for final exam

– Problem Set VII due Thursday 5/3/18 in philosophy department

FINAL EXAMINATION: TBA