

Syllabus

Deductive Logic

PHIL 3200: class # 5025

Designation: QB/QI

Credit: 3 Units

Instructor: Dr. Chapman Waters

Office: CTIHB 247

Office Hours: Monday/Wednesday 3:00 - 5:00pm or by (Zoom or in person) appointment

Email (preferred method of communication): chapman.waters@utah.edu

Class Location: GC 1770

Class Time: MWF: 11:50am - 12:40pm

Prerequisites: None

Course Description and Objectives

This is a course in deductive logic. Our two main tasks will be to figure out how to represent natural language arguments in symbolic notation, and to develop techniques for determining whether those arguments are “good” or “bad.” (Our first task will be to find a better way of talking about arguments than calling them “good” or “bad.”) We’ll start with arguments involving ‘and,’ ‘or,’ ‘not,’ ‘if...then,’ and ‘if and only if,’ developing two different, but equivalent, methods for dealing with such arguments. Later in the semester, we’ll move on to arguments involving quantifiers – words such as ‘all’ and ‘some’ – including those with multiple quantifiers, relations, and identity. While we’ll have occasion to look at some of the interesting properties of the systems that we study, our primary concern will be learning to work within those systems.

Objectives include being able to translate English sentences and arguments into symbolic notation, being able to evaluate those formal sentences and arguments using the techniques developed during the semester, and being able to recognize the logically important features of the systems developed. This is primarily a skills course: emphasis will be on the first two of those.

Required Text

W. Gustason and D. Ulrich, *Elementary Symbolic Logic* (Waveland Press, 2nd edition 1989, ISBN 0-88133-412-X).

NOTE: You should have the option to purchase an electronic version of the textbook, or a hard copy, through the University Bookstore or Amazon. You *must* purchase some version of the text. Because exams/quizzes are open book, I **strongly** recommend buying a physical copy.

Grading

Final grades will be determined by (1) your turning in homework assignments on Fridays when there are no quizzes or exams, (2) your performance on three 15 minute in-class quizzes,

and (3) your performance on three 50 minute in-class exams. A course schedule is given at the end of this syllabus.

- **Homework Assignments (32%):** While homework problems will be assigned for almost every class meeting, only those listed on the Canvas course schedule will be turned in for credit. Homework assignments are given weekly (when there are no quizzes or exams) and must be turned in (through Canvas) before the start of class on their due date. There are eight such assignments, worth 25 points each, for a total of 200 points. You will receive credit if you turn these in and lose credit if you do not, as follows. If you fail to turn in *exactly one* homework assignment, you will *not* lose any points (i.e., at the end of the semester, you will be given points for all eight homework assignments) In other words, you get one “*My Dog Ate It*” excuse for the semester. Penalties *only* begin to be assessed if you fail to turn in *two* assignments – you will lose 50 points for that. If you fail to turn in three assignments, you will lose 75 points; if you fail to turn in four assignments, you will lose 100 points, and so on. Homework assignments will not be evaluated for correctness, that is to say, you will not lose points for turning in incorrect answers. However, if the instructor finds that an assignment does not reflect a serious attempt to answer the questions asked, it will not count as submitted. The purpose of these exercises is for you to practice the techniques on which you will be tested, and you *will* need to practice them to do well in the time allotted for the quizzes and exams. Solutions to all exercises gone over in class will be posted on CANVAS after the relevant lecture.
- **Quizzes and Exams (68%):** Quizzes and exams will require you to work problems or answer questions of the sort found in your readings, discussed in class, and given as homework. Although all exams and quizzes are open book, you may *not* consult your notes, or any other additional information source, when taking them. Quizzes and exams, after the first ones, will only concern material covered since the previous exam or quiz. However, as a word of caution, it is important for students to recognize that the material is itself cumulative in the sense that mastery of the later topics we cover presupposes mastery of the earlier covered topics. Prepare accordingly. Each of the three quizzes will be worth 40 points, for a total of 120 points. Each of the three exams will be worth 100 points, for a total of 300 points.

Thus, the total number of points for the homework assignments (200 points), quizzes (120 points), and exams (300 points) is 620. Final grades will be assigned using the following scale:

A	A-	B+	B	B-	C+	C	C-	D	F
620-574	573-549	548-537	536-512	511-493	492-472	471-450	449-434	433-372	<372

Course Policies and Procedures

Canvas – The Canvas course webpage is your contact point for this course, and so, it’s important that you familiarize yourself with it (for a tutorial page, visit the link pasted below). If you ever need to know what’s going on in class, or when things are due, you just need to consult the Canvas course page. The “homepage” will provide a detailed course schedule that will be updated as we go. I will also use the Canvas homepage to distribute all course materials

(course schedule, readings, handouts, study guides, due dates for coursework, lecture videos, etc.). Moreover, all coursework will be turned in through Canvas.

Canvas Tutorial: <https://community.canvaslms.com/docs/DOC-10701>

Class Meetings — According to the University's stipulations, this qualifies as a "Hybrid & IVC" class. Officially, this means that we will have some mix of traditional in-person classes and online learning modalities. We will have regularly scheduled times when we meet for each lecture. Some lectures will be of the traditional in-person sort; for others, we will meet synchronously, in real time, via Zoom. The link to attend class via Zoom is provided at the top of the Canvas homepage under "IMPORTANT COURSE LINKS." When appropriate, I may also provide students with some asynchronous videos (see below). For each class meeting, the Canvas course homepage will indicate which learning modality will be used that day. No lectures will be recorded. If you need to seek an ADA accommodation to request an exception to this policy due to a disability, please contact the Center for Disability and Access (CDA). CDA will work with us to determine what, if any, ADA accommodations are reasonable and appropriate.

Asynchronous Lecture Videos — In addition to our normal class meetings, some course topics may be covered in asynchronous videos and will be posted on the Canvas course website for students to consult on their own. Video discussions of solutions to problems found on homework assignments, exams, or quizzes, for instance, may be posted in asynchronous videos.

Homework Assignments — All homework assignments will be submitted electronically, through Canvas. There are at least three methods available for you to submit HW assignments:

(1) **Photo Uploads:** you may take a photo of your written work on your mobile device and directly upload the photo into the "submission" page for the relevant HW assignment. This will require you to have the "Canvas Student" app on your smartphone/mobile device. (Alternatively, you may also upload HWs via apps like "Adobe Scan," which is specifically designed for such things). You can also upload homeworks from your desktop/laptop computer — given that your computer can access the photos that you want to upload. If you take photos, however, they must be such that we can easily read whatever work you submit.

(2) **Upload Word/PDF Document:** When I create lecture notes, reading assignments, study guides, etc., I type those up in Microsoft Word (or Pages if I'm on a Mac) and then convert them into PDFs. To submit HW assignments (or quizzes/exams), you may also do this. However, it'll require you to figure out how to insert the symbols from our notation into those programs — which is possible either by copying and then pasting those symbols from other course materials into your document (e.g., lecture handouts, reading assignments, etc.) or by using the "insert symbol" function provided in Word/Pages. This can be cumbersome and time consuming, especially when you get around to typing up deductions using Conditional Proof — as you'll have to figure out how to insert arrows in the right way.

(3) **Alternative Uploads:** There are alternatives to the first two options. For instance, some mobile devices will let you write things down, using an electronic pen (like those you use to sign receipts), directly into PDF documents. If you know how to do that, and

you've got the means, feel free to do so: it's a great way to submit handwritten coursework. There's also other things you might do, I'm sure. If you've got another method that works, feel free to use it.

Note: Whichever of the above options you use, I strongly recommend that your uploads contain hand-written work. The reason is that exams and quizzes are going to be hand-written, by you, and you want to develop the right sort of "muscle memory" to do well in the time you are allotted.

Quizzes and Exams — All quizzes and exams will be taken in person unless specified otherwise.

Logic Lab — The U of U Philosophy Department recognizes that this is a difficult course. For that reason, the department has provided funding for a "Logic Lab" this semester. There will be weekly study sessions for students who would like additional instruction in course topics outside of lecture. Weekly study sessions will be held twice a week. Students may also sign up for individual tutoring if they would like additional support or have scheduling conflicts with the regular lab meetings. Again, this is at no cost to you. I highly encourage students to take advantage of this. Additional information about this semester's logic lab is forthcoming.

Self-Reporting — Students *must* self-report if they test positive for COVID-19 via <https://coronavirus.utah.edu/> Students are encouraged to take advantage of university COVID-19 testing services: <https://alert.utah.edu/covid-19-testing/>. Voluntary asymptomatic testing will continue to be available weekly for all members of the campus community.

Attendance Policy — Officially there is no attendance policy, but attendance during lectures (both online or in person) is strongly encouraged.

Coursework Deadlines — In the absence of justifiable prior arrangements or cases of serious, unexpected and documented medical emergencies or bereavement, coursework must be turned in as scheduled. For circumstances that are not emergencies, students must send the instructor a request for an accommodation; this request should be sent a sufficient amount of time *before* the officially scheduled due date for the student to learn whether the excuse is acceptable.

Academic Integrity — You are expected to do your own work on all assignments. The *minimum* penalty for cheating or plagiarism is a failing grade in the course. You will also be reported to the University's Academic Misconduct Committee. Students are responsible for knowing and understanding the University's policy on academic misconduct. For further information about this, consult the following website:

<https://regulations.utah.edu/academics/6-400.php>.

Course Schedule:

This syllabus is NOT a binding legal contract. I reserve the right to revise the course schedule (including dates of exams, quizzes, and homework assignments) as I see fit. If there are any changes regarding exams, quizzes, or homework assignments, I will revise the Course Schedule on Canvas and post an announcement. So, be sure and check it regularly.

Daily reading assignments are NOT to be found below. Reading assignments will be announced in class and posted on the Course Schedule (Canvas) as we go along.

Week 1

Monday 8/22
Wednesday 8/24
Friday 8/26 ← **Homework 1 Due**

Week 2

Monday 8/29
Wednesday 8/31
Friday 9/2 ← **Quiz 1**

Week 3

Monday 9/5 ← **Labor Day No Class**
Wednesday 9/7
Friday 9/9 ← **Homework 2 Due**

Week 4

Monday 9/12
Wednesday 9/14
Friday 9/16 ← **Homework 3 Due**

Week 5

Monday 9/19
Wednesday 9/21
Friday 9/23 ← **Exam I**

Week 6

Monday 9/26
Wednesday 9/28
Friday 9/30 ← **Homework 4 Due**

Week 7

Monday 10/3
Wednesday 10/5
Friday 10/7 ← **QUIZ 2**

Week 8 FALL BREAK NO CLASS

Monday 10/10
Wednesday 10/12

Friday 10/14

Week 9

Monday 10/17

Wednesday 10/19

Friday 10/21 ← **Homework 5 Due**

Week 10

Monday 10/24

Wednesday 10/26

Friday 10/28 ← **Homework 6 Due**

Week 11

Monday 10/31

Wednesday 11/2

Friday 11/4 ← **Exam II**

Week 12

Monday 11/7

Wednesday 11/9

Friday 11/11 ← **Homework 7 Due**

Week 13

Monday 11/14

Wednesday 11/16

Friday 11/18 ← **Quiz 3**

Week 14

Monday 11/21

Wednesday 11/23

Friday 11/25 ← **Thanksgiving Break NO CLASS**

Week 15

Monday 11/28 ← **Homework 8 Due**

Wednesday 11/30

Friday 12/2

Week 16

Monday 12/5

Wednesday 12/7 ← Last day of class!

Finals Week: Monday 12/12 – Friday 12/16

Final Exam: **Wednesday, December 14, 10:30am - 12:30pm**

Other Policies and Resources

Veterans Center

If you are a **student veteran**, I want you to know that the U of Utah has a Veterans Support Center on campus. They are located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

LGBT Resource Center

If you are a member of the **LGBTQ community**, I want you to know that my classroom is a safe zone*. Additionally, please know that the U of Utah has an LGBT Resource Center on campus. They are located in Room 409 in the Oplin Union Building. Hours: M-F 8-5pm. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: <http://lgbt.utah.edu/>. Please also let me know if there is any additional support you need in this class.

Learners of English as an Additional/Second Language

If you are an English language learner, please be aware of several resources on campus that will support you with your language development and writing. These resources include: the Department of Linguistics ESL Program (<http://linguistics.utah.edu/esl-program/>); the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.

ADA

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Nondiscrimination

The University of Utah does not discriminate on the basis of race, ethnicity, color, religion, national origin, sex, age, disability, sexual orientation, gender identity, gender expression, genetic information or protected veteran's status, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries concerning perceived discrimination or requests for disability accommodations may be referred to the University's Title IX/ADA/Section 504 Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801- 581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066.

Sexual Misconduct/Title XI

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

University Safety Statement.

The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

Philosophy Resources: (helpful for research and getting a better handle on complex issues)

Stanford Encyclopedia of Philosophy: <https://plato.stanford.edu/>

Internet Encyclopedia of Philosophy: <https://www.iep.utm.edu/>