Deductive Logic

Philosophy 3200 – Utah Syllabus – Summer 2025

INSTRUCTOR INFORMATION:

Josh Brekel (He/Him/His) josh.brekel@utah.edu Office Hours: By appointment.

REQUIRED COURSE MATERIALS:

- forall *x*: Calgary, Fall 2023 edition. https://forallx.openlogicproject.org/forallxyyc.pdf
- *A Philosophical Introduction to Formal Logic*, by Jonathan Livengood. https://jonathanlivengood.net/Livengood_2017_Philosophical_Introduction_to_Formal_Logic.pdf
- Homework and exams will be completed via Carnap.io . You will need to create an account on that website in order to complete homework and exams. I will walk you through how to do that during the first week of the course.

COURSE DESCRIPTION:

This course aims to introduce students to the elementary techniques of symbolic logic. We will explore those techniques by considering arguments in natural and formal languages, truth functions, as well as first-order quantification. By the end of the course, students will be well-versed in atomic sentences, logical connectives/constants, truth-functional logic, truth tables, proofs in truth-functional logic, interpretations of formal languages, first-order logic, and proofs in first-order logic.

COURSE PREREQUISITES:

There are no prerequisites for this course. Students of all philosophical abilities are welcome.

EXPECTATIONS:

Academic credits are expected to meet the federal credit hour definition of **2-3 hours** (minimum) of work outside of class **for every hour** of time spent in class. For an online, asynchronous, 3-credit course such as this, you should expect to be spending a minimum of **7-10 hours per week** working on this course. To get the most out of that time, meet these class expectations:

- Carefully read the listed readings each week,
- Watch the instructor-prepared class videos,
- Carefully take notes while watching class videos and reading, and
- Complete assignments by the listed due dates.

COURSE ASSIGNMENTS:

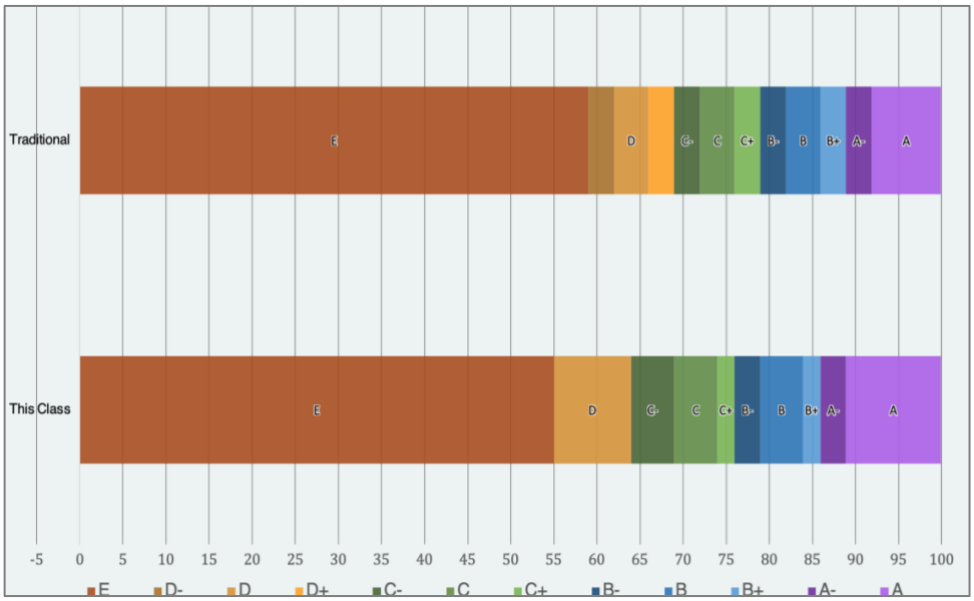
The course assignments are described in the table below.

Assignment Category	Description	Number Assigned	Number Dropped	Weight	Grade Allocation
Discussions	Each week, students will be required to write *at least* 2 discussion posts. The first post should explore a substantive question (or a set of substantive questions) about the required reading material for that week. The second post should either be an attempt to definitively answer another student's question or a contribution that furthers the exploration of another student's question.	10	3	3%	21%
Homework	Sets of homework problems assigned via Carnap.io and Canvas.	8	2	8%	48%
Exams	Open-note exams administered through Carnap.io and Canvas.	3	0	10%	30%
Free Rounding Credit	Everyone automatically receives a "free" percentage point by being in the class. You don't have to do anything to earn this percentage point. Recognize that I will ***not*** round grades at the end of the semester (under any circumstances) because of this free percentage point. If a student asks me to round their grade at the end of the semester, then the student loses this free rounding credit.	1	0	1%	1%
				Total	**100%**

Grading Scheme:

This course uses letter grades corresponding to the grading scheme specified in the table to the bottom left. For the sake of clarity, I also created a graphic that contrasts this course's grading scale with the grading scale you are (probably) most familiar with. The grading scale that you are familiar with is titled "Traditional" and this course's grading scale is titled "This Class" in the chart below.

Letter Grade	Percentage Range
A	89—100.0 %
A-	86—88.99 %
B+	84—85.99 %
B	79—83.99 %
B-	76—78.99 %
C+	74—77.99 %
C	69—73.99 %
C-	64—68.99 %
D	55—63.99 %
E	0 —54.99 %



For the final overall course grade, the instructor will calculate each student's average ***letter grade*** weighted by the assignments listed in Course Assignments section. Then, the instructor will report the nearest allowed ***letter grade*** to the Registrar's Office. Note that the University only records ***letter grades*** for use on Transcripts and GPA calculations.

Missing and Late Assignments:

Students will generally not be allowed to submit late assignments.

Academic Integrity:

Academic integrity is taken seriously in this course. It is expected that students will maintain a high standard of academic integrity—cheating will not be tolerated. Unless written permission is given by the instructor, the use of ChatGPT or other "Artificial Intelligence" models is strictly prohibited. At an absolute minimum, instances of academic misconduct will result in a substantial grade penalty on the assignment. Often, academic misconduct is grounds for a failing grade in the course and a report to the university. Talk to the instructor if you have questions about academic integrity.

Mandatory Institutional Policies:

https://cte.utah.edu/instructor-education/syllabus/institutional-policies.php

TENTATIVE SCHEDULE:

This is an extremely tentative plan for the semester. As the semester proceeds, it may become necessary to check Canvas for updates to the reading schedule.

Dates	Week	Topic	Required Reading	Assignments
5/12-5/16	1	Key Notions of Logic, Introducing Truth-Functional Logic (TFL)	forall *x*, pp. 1-61; Livengood, Chapter 0	Discussion 1
5/19-5/23	2	Introducing TFL (cont.), Truth Tables	forall *x*, pp. 62-110; Livengood, Chapter 1	HW1, Discussion 2
5/26-5/30	3	Proofs 1	forall *x*, pp. 111-41	HW2, Discussion 3
6/2-6/6	4	Proofs 1 (cont.)	forall *x*, pp. 144-169	HW3, Discussion 4
6/9-6/13	5	Proofs 2	Livengood, Chapter 2	HW4, Discussion 5
6/16-6/20	6	Proofs 2 (cont.), Exam	forall *x*, pp. 172-88	Exam 1
6/23-6/27	7	Introducing First-Order Logic (FOL)	forall *x*, pp. 192-236	HW5, Discussion 6
6/30-7/4	8	Introducing FOL (cont.), Interpretations of FOL	forall *x*, pp. 237-68	HW6, Discussion 7
7/7-7/11	9	Interpretations of FOL (cont.), Exam	forall *x*, pp. 269-97	Exam 2, Discussion 8
7/14-7/18	10	Proofs 3	forall *x*, pp. 299-326	HW7, Discussion 9
7/21-7/25	11	Proofs 3 (cont.)	forall *x*, pp. 328-337	HW8, Discussion 10
7/28-7/30	12	Exam		Exam 3