PHIL 3200: Deductive Logic

Spring Semester 2026, MWF 2-2:50

Instructor: Dr. Gretchen Ellefson
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Office Hours: M 11-12; Tu 2:30-4; W 11-1:30 and by appointment

Tutor: Aidan Gates
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Tutoring hours: M 12-2; Tu 11-1; Th 12-1; F 3-5

Course Description

This course focuses on first-order symbolic logic and its application to natural languages, truth functions, and quantification. We will also explore some principles of metalogic, the theorizing about logic and logical systems.

PHIL 1250 (Critical Thinking) is a prerequisite for this class. We will more or less pick up where you left off from PHIL 1250. There will be time to review material from 1250 in the first few weeks of the class, but it may be a good idea for you to do some review on your own as well.

Course Objectives

In this course, students will be expected to:

- Identify and use rules of propositional logic
- Complete derivations in first-order predicate logic
- Successfully perform metalogical proofs of logical principles
- Critically examine logical rules and principles in order to articulate why we use the rules we use and how they could be different

Attendance

Attendance is required and graded in this class. Attendance and active participation in class are crucial for classes to function in a way that is most conducive to learning (and enjoyment!). When a student does not regularly attend class, this does not only affect that student; it affects everyone who misses out on their contributions to class, the questions they might ask, etc. I also benefit from regular attendance from all students, as it is easier for me to determine what additional teaching is necessary when students attend regularly; if you've missed many classes, it's hard for me to know if lack of comprehension reflects gaps in my teaching, or gaps as a result of your non-attendance.

You have two no-questions-asked unexcused absences per semester. After that, ever unexcused absence will result in 25% reduction in your attendance grade. After six total unexcused absences, your attendance grade will be zero. If you are more than 10 minutes late for a class,

you will count as absent for that day. If you do miss class, whether due to an excused or unexcused absence, it is your responsibility to get any notes from classmates.

Excused absences are, of course, appropriate. If there is any possibility you will need to be excused from classes as a result of disability or mental health issues, be sure to have everything set with the DRC in advance. For other excuses, be in touch with me directly.

Assignments

Attendance (10%): See "Attendance" above.

Participation (10%): You are expected to attend class, and you are expected to participate. This class will require significant in-class work on exercises. Regularly being present and participating on these exercises will constitute adequate participation.

Homework (20%): Your homework assignments and due dates will be available on Canvas. You may turn your homework in either physically in class or before class via Canvas. Homework is graded on completion (or, more accurately, strong evidence of significant effort; if you do not quite complete assignments, that is ok provided that it is clear that you worked hard on them). Since homework is graded on completion, you are not graded on your actual comprehension and performance on the material until the two tests in class. This means that it is up to you to ensure that you are sufficiently familiar and comfortable with the material. If you need additional practice, feel free to do additional problems. If you need additional instruction or feedback, be sure to ask questions in class and come to office hours and/or tutoring hours.

Two tests (25% each): You will have two tests, one during week seven, and one during finals week.

Paper (10%): The final week of class, you will have a short paper discussing principles of metalogic.

Grade Scale

A	93-100	C	73-77
A-	90-93	C-	70-73
B+	87-90	D+	67-70
B	83-87	D	63-67
B-	80-83	D-	60-63
C+	77-80	F	<60

Late Work

If you expect your work may be late, it is always best to touch base with me sooner rather than later. Unless you make arrangements with me prior to the due date, late work will receive a penalty for each day that it is late. You will lose 5 percent off your assignment's grade each day it is late: 5 percent if it is up to 24 hours late, 10 percent up to 48 hours late, and so on. No late work will be accepted more than 5 days late unless you make specific arrangements with me.

Plagiarism and Cheating

Scholastic dishonesty will not be tolerated. You are expected to have read and understood the current issue of the Student Handbook (published by Student Affairs) regarding student responsibilities and rights, and for the intellectual property policy, information about procedures, and what constitutes acceptable behavior.

The sharing of copyrighted material through peer-to-peer (P2P) file sharing, except as provided under U.S. copyright law, is prohibited by law. Detailed information can be found at https://help.suu.edu/article/1097/p2p-and-copyright-infringement.

Students are responsible for doing their own work and for giving credit to those on whom they rely in their work. Any student who is found to have cheated on an assignment, test, or paper will receive zero points for that assignment. Any student found to have plagiarized will automatically receive an F in the course. Please be sure you are familiar with SUU's policy on academic integrity, found here: https://www.suu.edu/pub/policies/pdf/PP633Academic.pdf and let me know if you have any questions or concerns.

All this said, I am generally fine with students working together on assignments, both in class and outside of class. This will not necessarily be true for quizzes and tests; unless otherwise specified, assume that all work on quizzes and tests must be your own.

Required Texts

Bergmann, Merrie, James Moor, and Jack Nelson. *The Logic Book*, Fifth ed., McGraw Hill, 2009

Sixth edition is also fine

General Course Calendar

(Subject to change as we inevitably get behind at some point…)

Week 1 (Jan. 7-9): Review sentential logic (Chapters 1-2)
Week 2 (Jan 12-16): Review sentential logic (Chapters 3), Set theory primer!
Week 3 (Jan. 19-23): Sentential logic derivations: a new system (Chapter 5)
Week 4 (Jan. 26-30): Sentential logic derivations: a new system (Chapter 5)
Week 5 (Feb. 2-6): Predicate logic symbolization and syntax (7.1-7.5)
Week 6 (Feb. 9-13): Predicate logic symbolization and syntax (7.6-7.9)
Week 7 (Feb. 16-20): Predicate logic semantics (8.1-8.3)
Week 8 (Feb 23-27): Review for test 1; Test 1
Week 9 (March 2-6): Predicate logic semantics (8.4-8.7)
Spring break (March 9-13)
Week 10 (March 16-20): Predicate logic derivations (10.1-10.2)
Week 11 (March 23-27): Predicate logic derivations (10.3-10.4)
Week 12 March 30-April 3): Continue predicate logic derivations (Chapter 10)
Week 13 (April 6-10): Metalogic (Chapter 6)
Week 14 (April 13-17): Metalogic (Chapter 6/11); Paper due
Test 2 Thursday, April 23 11-12:50

University Required Syllabus Statements:

ACADEMIC CREDIT: According to the federal definition of a Carnegie credit hour: A credit hour of work is the equivalent of approximately 60 minutes of class time or independent study work. A minimum of 45 hours of work by each student is required for each unit of credit. Credit is earned only when course requirements are met. One (1) credit hour is equivalent to 15 contact hours of lecture, discussion, testing, evaluation, or seminar, as well as 30 hours of student homework. An equivalent amount of work is expected for laboratory work, internships, practica, studio, and other academic work leading to the awarding of credit hours. Credit granted for individual courses, labs, or studio classes ranges from 0.5 to 15 credit hours per semester.

ACADEMIC FREEDOM: SUU is operated for the common good of the greater community it serves. The common good depends upon the free search for truth and its free exposition. Academic Freedom is the right of faculty to study, discuss, investigate, teach, and publish. Academic Freedom is essential to these purposes and applies to both teaching and research.

Academic Freedom in the realm of teaching is fundamental for the protection of the rights of the faculty member and of you, the student, with respect to the free pursuit of learning and discovery. Faculty members possess the right to full freedom in the classroom in discussing their subjects. They may present any controversial material relevant to their courses and their intended learning outcomes, but they shall take care not to introduce into their teaching controversial materials which have no relation to the subject being taught or the intended learning outcomes for the course.

As such, students enrolled in any course at SUU may encounter topics, perspectives, and ideas that are unfamiliar or controversial, with the educational intent of providing a meaningful learning environment that fosters your growth and development. These parameters related to Academic Freedom are included in SUU Policy 6.6.

ACADEMIC MISCONDUCT: Scholastic honesty is expected of all students. Dishonesty will not be tolerated and will be prosecuted to the fullest extent (see SUU Policy 6.33). You are expected to have read and understood the current SUU student conduct code (SUU Policy 11.2) regarding student responsibilities and rights, the intellectual property policy (SUU Policy 5.52), information about procedures, and what constitutes acceptable behavior.

Please Note: The use of websites or services that sell essays is a violation of these policies; likewise, the use of websites or services that provide answers to assignments, quizzes, or tests is also a violation of these policies. Regarding the use of Generative Artificial Intelligence (AI), you should check with your individual course instructor.

ADA STATEMENT: Students with medical, psychological, learning, or other disabilities desiring academic adjustments, accommodations, or auxiliary aids will need to contact the Disability Resource Center, located in Room 206F of the Sharwan Smith Center or by phone at (435) 865-8042. The Disability Resource Center determines eligibility for and authorizes the provision of services.

If your instructor requires attendance, you may need to seek an ADA accommodation to request an exception to this attendance policy. Please contact the Disability Resource Center to determine what, if any, ADA accommodations are reasonable and appropriate.

NON-DISCRIMINATION STATEMENT: SUU is committed to fostering an inclusive community of lifelong learners and believes our university's encompassing of different views, beliefs, and identities makes us stronger, more innovative, and better prepared for the global society.

SUU does not discriminate on the basis of race, religion, color, national origin, citizenship, sex (including sex discrimination and sexual harassment), sexual orientation, gender identity, age, ancestry, disability status, pregnancy, pregnancy-related conditions, genetic information, military status, veteran status, or other bases protected by applicable law in employment, treatment, admission, access to educational programs and activities, or other University benefits or services.

SUU strives to cultivate a campus environment that encourages freedom of expression from diverse viewpoints. We encourage all to dialogue within a spirit of respect, civility, and decency.

For additional information on non-discrimination, please see SUU Policy 5.27 and/or visit: https://www.suu.edu/nondiscrimination.

PREGNANCY: Students who are or become pregnant during this course may receive reasonable modifications to facilitate continued access and participation in the course. Pregnancy and related conditions are broadly defined to include pregnancy, childbirth, termination of pregnancy, lactation, related medical conditions, and recovery. To obtain reasonable modifications, please make a request to: title9@suu.edu. To learn more visit: https://www.suu.edu/titleix/pregnancy.html

MANDATORY REPORTING: University policy (SUU Policy 5.60) requires instructors to report disclosures received from students that indicate they have been subjected to sexual misconduct/harassment. The University defines sexual harassment consistent with Federal Regulations (34 C.F.R. Part 106, Subpart D) to include quid pro quo, hostile environment harassment, sexual assault, dating violence, domestic violence, and stalking. When students communicate this information to an instructor in-person, by email, or within writing assignments, the instructor will report that to the Title IX Coordinator to ensure students receive support from the Title IX Office. A reporting form is available at https://cm.maxient.com/reportingform.php?SouthernUtahUniv

EMERGENCY MANAGEMENT STATEMENT: In case of an emergency, the University's Emergency Notification System (ENS) will be activated. Students are encouraged to maintain updated contact information using the link on the homepage of the mySUU portal. In addition, students are encouraged to familiarize themselves with the Emergency Response Protocols posted in each classroom. Detailed information about the University's emergency management plan can be found at https://www.suu.edu/emergency.

HEOA COMPLIANCE STATEMENT: For a full set of Higher Education Opportunity Act (HEOA) compliance statements, please visit https://www.suu.edu/heoa. The sharing of copyrighted material through peer-to-peer (P2P) file sharing, except as provided under U.S.

copyright law, is prohibited by law; additional information can be found at https://my.suu.edu/help/article/1096/heoa-compliance-plan.

You are also expected to comply with policies regarding intellectual property (SUU Policy 5.52) and copyright (SUU Policy 5.54).

SUUSA STATEMENT: As a student at SUU, you have representation from the SUU Student Association (SUUSA) which advocates for student interests and helps work as a liaison between the students and the university administration. You can submit MySUU Voice feedback by going to https://www.suu.edu/suusa/voice. Likewise, you can learn more about SUUSA's Executive Council at https://www.suu.edu/suusa/executive-council and about all of SUUSA's Student Senators at https://www.suu.edu/suusa/senate. If you have any specific concerns regarding any of your courses, please contact the SUUSA *VP of Academics* at: suusa_academicsvp@suu.edu.

Thriving Thunderbirds: Mental health is essential for your academic success. If you are struggling with mental health issues, SUU provides resources, support, and services to help you. Please visit https://www.suu.edu/mentalhealth for access to these valuable resources.

If you need assistance navigating any of the resources, please contact Counseling and Psychological Services, the Dean of Students' Office, or the Health and Wellness Center.

DISCLAIMER STATEMENT: Information contained in this syllabus, other than the grading, late assignments, makeup work, and attendance policies, may be subject to change with advance notice, as deemed appropriate by the instructor.