

LOGIC

INSTRUCTOR: SAMUEL A. TAYLOR

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OFFICE HOURS: 9-10 M,W; 11-12 Tu,Th; OR BY APPOINTMENT

COURSE: PHIL 1018

SEMESTER: FALL 2014

MEETING TIME: 8-8:50 M,Tu,W,F

LOCATION: MONH 203

COURSE DESCRIPTION: This course is designed to introduce you to symbolic logic, including both sentential (propositional) and predicate logic. By taking this course you'll gain facility with using the symbolic system known as first-order logic. These tools for formally representing and evaluating arguments are helpful not only in philosophy, but in any area of inquiry. Logicians are not only interested in using the symbolic systems that have been developed but also in asking questions about the logical systems themselves. Throughout the course we will briefly consider some of these questions in "meta-logic." *This course satisfies the Logic and Quantitative Reasoning Liberal Education requirement.*

GOALS & OBJECTIVES: Having completed this course, students should be able to:

- Understand logical concepts such as: argument, proof, logical consequence, validity, etc.
- Test the deductive validity of arguments using truth tables and truth trees.
- Construct formal proofs using direct proof, conditional proof, and indirect proof.
- Translate arguments found in ordinary discourse into the formal notation of sentential (propositional) and predicate logic.
- Improve one's ability to evaluate arguments using both propositional and predicate logic.
- Understand basic concepts in meta-logic such as soundness and completeness.

TEXTS: The only required text is: Daniel Bonevac's *Deduction: Introductory Symbolic Logic*, 2nd Edition (2003, Blackwell Publishers.) ISBN: 978-0631227137.

GRADING SCALE:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
100-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	59-0

GRADING: I'll use plus/minus grading. Your final grade will be calculated on the basis of 4 exams and 10 of 12 in-class quizzes.

EXAMS: 80% of your grade will come from 4 exams (20% each) comprised of true/false, multiple choice, translations from English to symbolic notation, and extended exercises (e.g. constructing truth-tables, truth trees, and proofs.) The (tentative) dates of the first three exams are listed on the schedule and will only cover the material covered since the previous exam. The final exam will be given during our assigned exam time of finals week. This final exam is *not* cumulative will only cover the material since the previous exam.

QUIZZES: 20% of your grade comes from 10 of 12 quizzes covering the material covered in class during that week. These quizzes will last no more than 10 minutes. There will be a quiz every Friday with two caveats: (i) there will not be a quiz during the same week of an exam, and (ii) a quiz will be given on Wednesday during the week of Thanksgiving. *Your two lowest quiz scores (of 12) will be dropped.*

LATE POLICY: Unexcused missed exams and quizzes will receive a 3% grade penalty for *EACH* 24-hour period that passes prior to the completion of a make-up exam or quiz.

HOMEWORK: Practice problems will be assigned throughout the semester but this homework will not be collected or graded. Nevertheless, facility with symbolic logic takes practice. You will not do well if you do not do practice problems. I will also often ask students to work through the homework problems on the board. If you are having any difficulty with any of the problems, then either (i) mention the practice problem when we are doing exercises in class or (ii) come to my office hours to work through some of the problems together. Finally, questions on quizzes and exams will often be modified from the homework—I might even lift questions directly from the homework (*hint*). Therefore, completing the

homework will *indirectly* affect your grade. *NOTE:* you can check your answers to *some* of the problems at http://bonevac.info/deduction/Answers_to_Selected_Problems.html.

ATTENDANCE: I will not take attendance. However, like the practice problems, attendance can *indirectly* affect your grade in a number of ways. I will assume that you are attending regularly and you will be responsible for all of the material discussed in class. Also, participation in class can raise your grade *up to* 1/3rd of a letter grade, and it is very difficult to participate if you don't attend regularly.

ACADEMIC HONESTY: Cheating will not be tolerated. Cheating will result in a zero for the assignment and will be reported to the university.

SCHEDULE

*Note that this schedule is *tentative* and subject to change depending on how the class progresses. Daily reading assignments, along with practice problems, will be assigned in class and posted to the Moodle course site.

Week 1: <i>Introduction; Basic Concepts</i>	Reading: Ch. 1
Week 2: <i>The Language of SL; Translations; Truth Tables</i>	Reading: 2.1-2.7
Week 3: <i>Truth Tables (Cont.)</i>	Reading: 2.8-2.9 EXAM 1 (Friday 9/19)
Week 4: <i>Truth Trees</i>	Reading: Ch. 3
Week 5: <i>Natural Deduction</i>	Reading: 4.1-4.2
Week 6: <i>Natural Deduction</i>	Reading: 4.3-4.5
Week 7: <i>Natural Deduction; Quantifiers</i>	EXAM 2 (Wednesday 10/22) Reading: 5.1
Week 8: <i>The Language of Q; Translation</i>	Reading: 5.2-5.5
Week 9: <i>Quantified Truth Trees</i>	Reading: 6.1-6.3
Week 10: <i>Quantified Truth Trees</i>	Reading: 6.4
Week 11: <i>Quantified Natural Deduction</i>	EXAM 3 (Monday 11/17) Reading: 7.1-7.2
Week 12: <i>Quantified Natural Deduction</i>	Reading: 7.3
Week 13: <i>Identity & Truth Trees</i>	Reading 8.1-8.2 (Thanksgiving break: No Class Friday 11/28/2014)
Week 14: <i>Identity & Natural Deduction</i>	Reading 8.3
Week 15: <i>TOPIC TBD</i>	Reading: TBD

FINAL EXAM: 8:00AM, TUESDAY, DECEMBER 16TH

Academic Policies

Student Conduct Code: Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Students are expected to adhere to Board of Regents Policy: *Student Conduct Code*. http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf

Teaching & Learning: Instructor and Student Responsibilities: UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have mutual responsibility to insure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. To reference the full policy please see: <http://www.d.umn.edu/vcaa/TeachingLearning.html>

Academic Integrity: Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. UMD's Student Academic Integrity Policy can be found at: <http://www.d.umn.edu/conduct/academic>

Final Exams: All 1xxx-5xxx courses offered for undergraduate credit should include a final graded component or end of term evaluation that assesses the level of student achievement of one or more course objectives. All final graded components are to be administered or due at the time and place according to the final exam schedule and not during the last week of class. To reference the full policy please see: <http://www.d.umn.edu/vcaa/FinalExams.html>

Excused Absences: Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are legitimate and verifiable circumstances that lead to excused student absence from the classroom. These are subpoenas, jury duty, military duty, religious observances, illness, bereavement for immediate family, and NCAA varsity intercollegiate athletics. For complete information, please see: <http://www.d.umn.edu/vcaa/ExcusedAbsence.html>

Appropriate Student Use of Class Notes and Course Materials: Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. For additional information, please see: <http://www.d.umn.edu/vcaa/ClassNotesAppropriateUseof.html>

Students With Disabilities: It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements such as time limited exams, inaccessible web content, or the use of non-captioned videos, please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Call 218-726-6130 or visit the DR web site at www.d.umn.edu/access for more information.