

PHIL 234/350, Symbolic Logic (11222, 11223), Fall 17

Mon and Wed, 3:30–4:45 (3 credits), in 1046 CASL

Daniel Yeakel

E-mail: dyeakel@umich.edu

Phone: (313) 593- 5408

Office: CB 3080, 3rd floor, CASL Building

Office Hours: Mon 4:55—5:55, Wed 2:25—3:25, Fri 9:55—10:55, and by appointment

Course Description (from the Catalog):

This course will examine the central themes in modern symbolic logic including consistency, truth-functionality, sentential first-order predicate logic, and the logic of identity and possibility. These themes and their relation to the wider philosophical context will be discussed.

Required Materials:

We will use the 12th edition of *Logic and Philosophy: A Modern Introduction*, by Hausman, Kahane, and Tidman (ISBN—10: 9781133050001). The text is available at the campus bookstore (and elsewhere). Most readings and assignments will come from this text. Other readings will be available on Canvas; reliable access to that software is necessary.

Score: 50% Assignments, 20% Midterm Exam, 25% Final Exam, 5% Attendance or Paper

Grading Scale:

[92-100]: A, [90-92): A-, [88-90): B+, [82-88): B, [80-82): B-, [78-80): C+, and so on.  I might change this scale but only in your favor. So, for example, a 79 will earn you *at least* a C+.

Learning Outcomes:

Be familiar with basic logical relationships such as logical truth, implication, equivalence and consistency. Distinguish between logical implication and conversational implicature. Translate natural language sentences to symbolic propositional and predicate logic counterparts. Check for logical relationships in sets of symbolized first order sentences with semantic tools such as truth tables and simple models. Prove by natural deduction the validity of arguments in first order propositional and predicate logic. Understand several philosophical problems in terms of symbolic logic. Be familiar with the limitations of and modifications of first order logic such as modal logic, second order logic, multi-valued logic.

Supplemental Instruction:

Supplemental Instruction (SI) sessions are offered as a free service for students in this class. Because SI targets both introductory and other courses perceived as having difficult material, sessions are for all learners from straight A to struggling students.  SI helps you to integrate diverse concepts, retain information effectively, reduce the time you need to study because you will be more efficient in what and how to study; also, it generally tends to improve the performance of anyone who attends five or more sessions.

A Supplemental Instruction (SI) component is provided for all students who want to improve their understanding of the material taught in this course.  SI sessions are led by a student who has already mastered the course material and has been trained to facilitate group sessions where students can meet to compare class notes, review and discuss important concepts, develop strategies for studying, and prepare for exams.  Attendance at SI sessions is free and voluntary.

Students may attend as many times as they choose.  SI sessions begin during the second week of class and continue throughout the semester.  Session locations and schedules will be announced in class.  For information about SI, visit:    <http://www.umkc.edu/asm/umkcsi/index.cfm>

[The above blurb on SI comes almost verbatim from the SI director, Professor Roundtree.]

The SI leader for this class is: Raquel Delagarza (email: rdelagar@umich.edu)

Scoring:

**%50 of your course grade will be determined by your homework average** (homework points you earn/ possible homework points). You will have between four and six homework assignments. For each problem set you will receive a grade out of ten points. Submitting a completed assignment will be worth seven points; incomplete assignments will earn fewer points. Three points per assignment will be assigned for accuracy. The number of accurately answered problems will be added to the completion points for the total score (out of ten). The problems graded and the number of completion points awarded for partially completed assignments are left to the discretion of the grader, but will be consistently applied. With the exception of a possible amnesty period near the end of the term, homework will only be accepted for one week after the due date, with a penalty for late submission. The requirements for each assignment will appear on Canvas. For convenience (and for purposes of explanation), the first assignment is given below.

Students enrolled in the upper-division section will have two additional assignments. These assignments will demand a depth of understanding greater than that required by the standard assignments. The first of these upper-division assignments will be due at the time of the mid-term. The second will be due at the time of our last meeting for lecture. These assignments will not factor directly into your grade. However, they will be graded in the same manner as the standard assignments and a score of nine or higher on the assignment is a requirement for receiving a grade for the corresponding exam. You will have a chance to revise and resubmit your assignment if you fail to meet this requirement on your initial attempt.

You are welcome to work together on homework and encouraged to work together to study for exams. Do not copy homework (or make it available for copy). There will be no (net) benefit for doing so. Fraud of that sort will be exposed by the examinations.

**%20 of your course grade will be determined by your midterm examination.** This exam will contain multiple choice questions, short essays and procedural problems (truth tables, symbolizations, proofs). Questions will be derived from lectures, readings, and our discussions. Make-up exams will be given only in extraordinary circumstances. Cheating on the exam (by using inappropriate aid or by providing it) will result in failure of the course.

**%25 of your course grade will be determined by your final examination.** This exam will be similar to the midterm examination. It will be a comprehensive exam, in large part because the material from the first half of the course is necessary for mastery of the second half material. Emphasis will be placed on the material covered since the midterm exam. The date and time of the final is available on the Office of Records and Registration website (select ‘final exam schedule’ from among the options on the left of the screen). Our final exam is scheduled for Wednesday, December 21 at 11:30 p.m.

**5% of your course grade will be determined by your attendance or by a paper.**

Option One—attendance: The attendance percentage will be calculated with the following formula: (number of sessions attended)/(total number of sessions). It is possible that attendance will not be recorded at every meeting. Your attendance grade will be determined by the sample of recorded meetings. Credit is given for attendance, not for compelling explanations of absence.

Option two—paper: You will be able to choose from several options for this paper. You have the option of identifying, symbolizing and proving either valid or invalid an argument from some reputable source (but not necessarily scholarly). The requirements are that the argument not be exceedingly simple (nakedly valid or invalid), that it not be symbolized already (by its author), and that it not be designed as a logic exercise. You also have the option of writing on some topic of philosophical logic. For topic ideas, browse the Philosophical Discussions sections of the text, Chapter Thirteen of the text, or talk to me about ideas. Topics for papers will also arise naturally in the course of the class. Whatever you choose to do for your final paper, you should discuss it with me.

All of your written work should: (1) follow instructions (which will be posted to Blackboard), (2) be mechanically sound (grammar, spelling, punctuation, citation), (3) be organized and clear, (4) display an understanding of the issues under consideration, and (5) be thoughtful and well-reasoned (that is, your claims should be both well-considered and well-supported by evidence).

Using sources without citation (including paraphrasing), or otherwise presenting another’s writing as your own, will result in failure of the assignment or of the course. In the Student Code of Conduct, UMD defines “plagiarism” this way: “Submitting as one’s own any work which, in part or whole, is not entirely one’s own work without properly attributing it to its correct source.” (<http://www.umd.umich.edu/policies_st-rights/>) For examples of disallowed practices and helpful advice, see UMD’s tutorial on academic integrity and plagiarism (<http://webapps.umd.umich.edu/aim/>). If you can find some online content to copy, I can find it too.

If you would like to improve your writing, the Writing Center in 3035 CASL offers help to that end. Their tutors offer valuable help both with basic skills and reviewing drafts of papers.

Schedule:

9/6: Chapter 1 (Arguments, Validity, Consistency, Equivocation)

9/11: Chapter 2 (Symbolization in Sentential Logic) through section 7

9/13: Finish Chapter 2,

9/18: More symbolization, Canvas reading: Grice

9/20: Chapter 3 (Truth Tables) through section 6

9/25: Finish Chapter 3—**A1 due**

9/27: Chapter 4 (Proofs) through section 6,

10/2: More Chapter 4

10/4: Finish Chapter 4, Begin Chapter 5

10/9: Finish Chapter 5 (Conditional Proof, Indirect Proof), Curry’s Paradox—**A2 due**

10/11: Chapter 14 (Syllogisms, Venn Diagrams), Limits of Sentential Logic

10/16-17 is study break

10/18: Open

10/23: Midterm—**350 Midterm Exam Assignment due**

10/25: Begin Chapter 7 (Symbolization in Sentential Logic)

10/30: More Chapter 7

11/1: Finish Chapter 7—**A3 due**

11/6: Chapter 8 (Proving Invalidity)

11/8: Begin 9 (Proofs)

11/13: Finish Chapter 9

11/15: Chapter 10 (Relational Predicates)—**A4 due**

11/20: More Chapter 10

11/22: More Proofs

11/27: Chapter 13 section 1 (Identity), Existence and Quantifiers

11/29: Chapter 13 section 2 (Descriptions)—**A5 due**

12/4: Chapter 13 section 6 and 7 (Liar Paradox) —**350 Final Exam Assignment due**

12/6: More Paradoxes?

12/11: Other Logics—**350 5% Writing Assignment due**

12/13 is study day

12/20 (Wednesday): Final Exam at 3:00 p.m.

Assignments

The exercise section number precedes the assigned problems from that section, which are in parentheses. For example, you are to do problems 1 through 15 of exercise set 1-1.

Assignment 1

1-1: (5-15), 1-2: (1,5), 1-3: (1-10), Give an example of an argument that equivocates on “odd.” Give both meanings., 2-1: (1-5), 2-2: (5-10), 2-3: (5-10), 2-4: (5-10), 2-5: (1-3), 2-7: (21-25), 2-8: (1-3, 13-15), 2-10: (3)

Disability Services:

If you have a documented disability you should register with **Disability Resource Services** in the University center. Special accommodations, if needed, can be made there. Students need to register with Disability Resource Services (DRS) every semester they are enrolled for classes. DRS is located in Counseling & Support Services, 2157 UC. To be assured of having services when they are needed, students should register no later than the end of the add/drop deadline of each term. If you have a disability that necessitates an accommodation or adjustment to the academic requirements stated in this syllabus, you must register with DRS and notify your professor.

Statement on Academic Integrity:

The University of Michigan -Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University's standards of academic conduct as set forth by the Code of Academic Conduct, as well as policies established by the schools and colleges. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses. Violations will not be tolerated and may result in penalties up to and including expulsion from the University.  (This and the previous statement on disability services are taken verbatim from a suggestion by the chairpersons of the LPA Department.)

Learning Outcomes for this course:

By the end of the course students should be able to (1) understand basic logical and rhetorical tools, (2) apply these tools to particular issues in various fields of interest, (3) understand logical relationships between claims, (4) identify, construct, and evaluate arguments, (5) identify and distinguish ambiguity and vagueness, (6) evaluate the credibility of testimony, (7) identify the uses and abuses of persuasive techniques, (8) determine the strengths and weaknesses of both inductive and deductive arguments, (9) formulate and defend arguments for a thesis.

Philosophy Program Goals: (these are verbatim from: <http://umdearborn.edu/casl/fileadmin/casl/departments/litphilarts/public/files/Philosophy/Program_Goals/Philosophy_Program_Goals.pdf> ) *Develop the ability to think critically and clearly, and to demonstrate this ability through the analysis and writing of well-reasoned argumentative essays. Become familiar with some of the major figures, ideas, and arguments in the Western philosophical tradition. Engage in formulating your own ideas and developing the skills necessary to articulate these ideas. Develop the ability to listen to opposing views and to assess the logic inherent in these views. See that philosophical theories underlie political systems, scientific theories, controversies in law, and indeed in theories about every aspect of reality. Develop a sense of intellectual integrity and a commitment to truth, as distinct from what is merely fashionable, popular, or politically convenient.*

*Learning Outcomes for All Philosophy Courses: Define and apply the basic concepts of philosophical discourse. Display a working knowledge of basic philosophical methods and analytical techniques. Demonstrate the ability to critically read and analyze primary and secondary texts. Identify and assess various competing perspectives and arguments on given philosophical issues. Demonstrate effect written and oral communication of the relevant philosophical ideas and arguments. Ability to construct sound arguments in defense of your own positions with regard to philosophical issues.*

University Attendance Policy:

A student is expected to attend every class and laboratory for which he or she has registered. Each instructor may make known to the student his or her policy with respect to absences in the course. It is the student’s responsibility to be aware of this policy. The instructor makes the final decision to excuse or not to excuse an absence. An instructor is entitled to give a failing grade (E) for excessive absences or an Unofficial Drop (UE) for a student who stops attending class at some point during the semester. (This section and the next are verbatim from the provost’s office.)

Safety:

All students are strongly encouraged to register in the campus Emergency Alert System, for communications during an emergency. The following link includes information on registering as well as safety and emergency procedures information: <http://umemergencyalert.umd.umich.edu/> Finally, all students are also encouraged to program 911 and UM-Dearborn’s Public Safety phone number (313) 593-5333 into personal cell phones. In case of emergency, first dial 911 and then if the situation allows call UM-Dearborn Public Safety.

If you hear a fire alarm, class will be immediately suspended, and you must evacuate the building by using the nearest exit. Please proceed outdoors to the assembly area and away from the building. Do not use elevators. It is highly recommended that you do not head to your vehicle or leave campus since it is necessary to account for all persons and to ensure that first responders can access the campus. If the class is notified of a shelter-in-place requirement for a tornado warning or severe weather warning, your instructor will suspend class and shelter the class in the lowest level of this building away from windows and doors. If notified of an active threat (shooter) you will Run (get out), Hide (find a safe place to stay) or Fight (with anything available). Your response will be dictated by the specific circumstances of the encounter.

Title IX of the Civil Rights act recognizes that students should be able to study in a safe atmosphere free of sexual violence, harassment, bias and discrimination. Should you wish to report an incident of sexual assault, harassment, discrimination or bias, visit <https://umdearborn.edu/offices/enrollment-management-student-life/incident-and-complaint-reporting>

Miscellaneous Prohibitions:

* Don’t let your phone ring during class, and do not speak to your phone without first leaving the classroom.
* **You should not type messages or play games on your phone during class.** However, if you do fiddle with your phone, do so boldly. Don’t try to hide it under your desk or behind a sneaky stack of books.
* Please do not spit tobacco in class. Your health is no concern to me if it’s not to you, and I don’t care if you suck, smoke or eat tobacco. However, spitting in a bottle is vile, and when inside, you should swallow your saliva like everyone else.
* Please don’t **e-smoke** in the class or by the door. The vapor contains benzene, formaldehyde, lead, toluene, and many other terrible-sounding things. Maybe that’s a healthy combo, but don’t bet on it with our lungs.
* Most important, **DO NOT KISS IN CLASS**. Many people are indifferent to PDA. Some actively detest it. NOBODY (else) actively enjoys seeing it, and when you do it, people see it.