

# INTERMEDIATE LOGIC

PHIL 3317:001

Spring 2014

Instructor: K. Williford



Meeting Time: MW 4:00PM-5:20PM

Meeting Place: Preston Hall (PH) 202

Office Hours:

MW 2:00-3:30 & by appointment

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**Course Description:** In this course we cover some of the basic metatheorems of Propositional and First-Order Predicate Logic, the rudiments of Axiomatic Set Theory, First-Order Theories with Identity, Second-Order Logic, and Modal Propositional Logic. The emphasis will be on the philosophical uses and significance of Logic and the place of Logic in the history of Mathematics and Computer Science. We will also informally discuss Gödel's Incompleteness Theorems, Multivalued Logics, the paradoxes of Self-Reference and Naïve Set Theory, the nature of mathematical proof and axiomatization, and the relation of Logic to the problems of Artificial Intelligence, the Philosophy of Mind, and the Philosophy of Mathematics.

**Prerequisites:** PHIL 2311 (Logic) or two mathematics courses

## Required Text:

*Logical Options: An Introduction to Classical and Alternative Logics* by John L. Bell, David DeVidi, and Graham Solomon, Broadview Press, 2001.

The text should be available at the UTA Bookstore.

## Evaluation:

There will be multiple quizzes, some homework exercises, and two exams. Attendance and participation will also figure into the final grade.

*Attendance:* If you have three unexcused absences, you cannot get a higher grade than a B in this class. If you have four unexcused absences, a C is the highest possible grade. If you have five, a D. If you have six, you cannot pass. In order for an absence to be excused you must provide me with documentation demonstrating that your absence was for a legitimate reason.

*Quizzes and Homework:* Your quiz/homework average will constitute 30% of your final grade. Most quizzes and homework will be drawn from the exercises in the book. You should plan to do them all.

*Exams:* There will be a take-home midterm and an in-class final (Wednesday, May 7 2:00-4:30). Each exam will count for 30% of your final grade.

*Attendance and Participation:* A&P will count for the remaining 10% of your final grade.

## IMPORTANT POLICIES OF MINE

**Late Work:** All late work will be docked a full letter grade for every day that it is late.

**Laptops and Phones:** In my class I do not allow students to use laptops, smartphones, or other electronic devices without special permission. Any note taking must be done the old fashioned way.

**Homework for Other Courses:** Students are not allowed to read for or do homework for other courses while in my class.

**Incompletes:** I will not give a student a grade of Incomplete (I), unless he or she has a compelling, and documented, reason (e.g., a medical emergency).

## UNIVERSITY POLICIES

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aao/fao/>).

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:** Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers,

developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, [which is located at the rear of the room](#). When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

### Tentative Schedule

#### Week 1

M1/13 Introduction

W1/15 *Logical Options* (LO) 1.1-1.2.2

#### Week 2

M1/20 MLK Day, No Class

W1/22 LO 1.2.3-1.2.5

#### Week 3

M1/27 LO 1.3.1-1.3.2

W1/29 LO 1.3.3

#### Week 4

M2/3 LO 1.4

W2/5 LO 1.5.1

#### Week 5

M2/10 LO 1.5.2

W2/12 LO 1.5.3

#### Week 6

M2/17 LO 2.1-2.2.1

W2/19 LO 2.2.2-2.2.3

#### Week 7

M2/24 LO 2.3-2.3.2 (Take-home Midterm assign)

W2/26 LO 2.4-2.4.1

#### Week 8

M3/3 LO 2.4.2-2.4.3 (Take-home Midterm due)

W3/5 LO 2.4.4-2.4.5

**3/10-3/14 Spring Vacation**Week 9

M3/17 LO 2.5

W3/19 LO 2.6

Week 10

M3/24 LO 2.7-2.7.2

W3/26 LO 2.7.3

**F3/28 Last Day to Drop**Week 11

M3/31 LO 3.1-3.1.1

W4/2 LO 3.1.2

Week 12

M4/7 LO 3.3-3.3.2

W4/9 LO 3.3.3-3.3.4

Week 13

M4/14 LO 4.1-4.1.2

W4/16 LO 4.1.3

Week 14

M4/21 LO 4.2-4.2.2

W4/23 LO 4.2.3-4.3.1

Week 15

M4/28 LO 4.4-4.4.1

W4/30 LO 4.4.2-4.4.3

**Exam Week****W5/7 2:00-4:30 Final Exam****Important Dates**

1/20 MLK Day, No Class

3/3 Take-home Midterm Due

3/10-3/14 Spring Break

3/28 Last Day to Drop

5/7 (2:00-4:30) Final Exam

