Rutgers University
Introduction to Logic
PHIL 730: 201
Section 4
Fall 2013[1]

Times: Mondays and Wednesdays from 3:55pm to 5:15pm
Physical Location: Building—Hickman Hall; Room—205
Course Webpage:
Professor: Christopher G. Weaver
E-mail: christophergweaver [at] gmail [dot] com
Office Hours: Mondays from 2:00pm to 3:00pm on the first floor of Mabel Smith Douglass Library
(near the circulation desk).

I. Course Description

> This course provides an introductory level explication of classical propositional logic, and classical first-order logic with identity. Some set theory will also be explicated.

II. Learning Objectives or Course Goals

1. Students will learn what arguments are.
2. Students will learn about the nature of deductive inference.
3. Students will learn classical propositional logic.
4. Students will learn classical first-order or quantification logic with identity.
5. Students will learn the truth-table proof theoretic.
6. Students will learn the truth-tree or tableaux proof theoretic method for both classical propositional and classical first-order logic.
7. Students will learn how to provide proofs *via* the method of natural deduction in both the systems of classical propositional logic, and classical first-order logic.

III. General Approach

> On designated quiz days (see the schedule below), at the start of class, I will administer a quiz over the assigned reading material, as well as the material presented during previous lectures. I will then collect the quizzes and go over the correct answers taking any questions you might have. In addition, I will make a few points about the assigned reading, and subsequently start lecturing through new material. On days we do not take a quiz, we will move immediately into the content of a new lecture. The lectures will all be supplemented with lecture note handouts which will be emailed to you before class.[2]

---

[1] The Instructor reserves the right to adjust or change the syllabus when he deems that an adjustment or change is necessary.

[2] Make sure you check your emails for the lecture notes by 8:00am on the days we have class.

IV. Textbook

The required textbook for this course is:

1. William Gustason and Dolph E. Ulrich, *Elementary Symbolic Logic*. 2nd Edition. (Long Grove, IL: Waveland Press, Inc. 1989) 353pp. ISBN 13: 978-0-88133-412-8

V. Assignments and Grading

Preparation and Class Attendance   **10%**

You are expected to read all of the assigned material. You are also expected to ask questions during the lectures and participate in in-class activities. **Missing more than four classes will negatively affect your grade (if you are tardy three times, that will count as one absence, and leaving class early will count as one tardy)**.[3] It is your responsibility to keep up with any work you miss. Class participation grades will also be negatively affected if disrespect is shown to others.

Quizzes   **30%**

These will be given at the beginning of class on designated quiz days (see the schedule below) and will cover material peculiar to the assigned reading and lecture material of the preceding classes. **Your two lowest quiz scores will be dropped and will not count against you**. If you miss a quiz because you were tardy or absent from class, you will receive a zero for that quiz, but remember, your two lowest quiz scores will not count against you.

Mid-Term   **30%**

Your mid-term exam will be cumulative.

Final Exam   **30%**

Your final exam will be cumulative.

VI. Schedule for the Fall 2013 Semester

Part 1: Classical Propositional Logic

1 (Wednesday, September 4th): The Nature of Arguments
Homework: Read Gustason and Ulrich (sect. 1.1). (Due September 9th)

2 (Monday, September 9th): Exercises on pages 8-9; 'And', 'Or', and 'Not'
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 1.2). (Due September 16th)

---

[3] A tardy involves being more than five minutes late to class. You will also be marked tardy if you leave class early for something other than an emergency. If you leave class early by more than ten minutes you will be marked absent.

3 (Wednesday, September 11th): Exercises on page 15; '&', 'v', and '~' (material from pp. 16-21)
Homework: Read Gustason and Ulrich (sect. 1.3, pp. 16-21). (Due September 16th)

4 (Monday, September 16th): Exercises on pages 21-22; '&', 'v', and '~' (material from pp. 22-27)
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 1.3, pp. 22-27). (Due September 23rd)

5 (Wednesday, September 18th): Exercises on pages 27-28; Material Conditionals and Biconditionals
Homework: Read Gustason and Ulrich (sect. 1.4). (Due September 23rd)

6 (Monday, September 23rd): Exercises on pages 34-35; Truth-Tables for '&', 'v', and '~'.
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 2.1). (Due September 30th)

7 (Wednesday, September 25th): Exercises on page 45; Truth-Tables for '⊃' and '≡'.
Homework: Read Gustason and Ulrich (sect. 2.2). (Due September 30th)

8 (Monday, September 30th): Exercises on page 50; Testing for Validity: The Truth-Table Method (pages 51-57)
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 2.3, pp. 51-57). (Due October 7th)

9 (Wednesday, October 2nd): Exercises on pages 57-58; Testing for Validity: The Truth-Table Method (pages 58-62)
Homework: Read Gustason and Ulrich (sect. 2.3, pp. 58-62). (Due October 7th)

10 (Monday, October 7th): Exercises on pages 62-63; The Method of Assigning Truth-Values
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 2.4). (Due October 14th)

11 (Wednesday, October 9th): Exercises on pages 68-69; Rules of Inference and Replacement for '&', 'v', and '~' (pages 79-85)
Homework: Read Gustason and Ulrich (sect. 3.1, pp. 79-85). (Due October 14th)

12 (Monday, October 14th): Exercises on pages 85-86; Rules of Inference and Replacement for '&', 'v', and '~' (pages 86-93)
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 3.1, pp. 86-93). (Due October 21st)

13 (Wednesday, October 16th): Exercises on pages 93-95; Rules of Inference and Replacement for '&', 'v', and '~' (pages 95-97)
Homework: Read Gustason and Ulrich (sect. 3.1, pp. 95-97). (Due October 21st)

14 (Monday, October 21st): Exercises on page 98; Rules of Inference and Replacement for '⊃' and '≡'

(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 3.2). (Due October 28th)

15 (Wednesday, October 23rd): Exercises on pages 106-109; Conditional Proof (pp. 110-113)
Homework: Read Gustason and Ulrich (sect. 3.3, pp. 110-113). (Due October 28th)

16 (Monday, October 28th): Exercises on page 113; Conditional Proof (pp. 113-117)
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 3.3, pp. 113-117). (Due November 4th)

17 (Wednesday, October 30th): Exercises on pages 117-118; Indirect Proof; Exercises on pages 122-124
Homework: Read Gustason and Ulrich (sect. 3.4) (Due November 4th)

18 (Monday, November 4th): MID-TERM
Homework: None

Part 2: Classical First-Order Logic

19 (Wednesday, November 6th): Quantifiers and Related Apparatus; Exercise on page 151
Homework: Read Gustason and Ulrich (sect. 5.1, pp. 139-151) (Due November 11th)

20 (Monday, November 11th): Quantifiers and Related Apparatus; Exercises on pages 154-156
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 5.1, pp. 152-154) (Due November 18th)

21 (Wednesday, November 13th): Multiple Quantification and Relations; Exercises on page 162
Homework: None

22 (Monday, November 18th): Multiple Quantification and Relations; Exercises on pages 168-169
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 5.2) (Due November 25th)

23 (Wednesday, November 20th): Identity and Definite Descriptions; Exercise on page 185
Homework: None

24 (Monday, November 25th): Identity and Definite Descriptions; Exercises on page 192
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 5.3) (Due December 2nd)

25 (Wednesday, November 27th): Natural Deduction and First-Order Logic; Exercise on pages 219-220
Homework: Read Gustason and Ulrich (sect. 7.1) (Due December 2nd)

26 (Monday, December 2nd): Natural Deduction and First-Order Logic; Exercises on pages 229-230
(Quiz Today)
Homework: Read Gustason and Ulrich (sect. 7.2) (Due December 9th)

27 (Wednesday, December 4th): Natural Deduction and First-Order Logic; Exercise on page 232
Homework: Read Gustason and Ulrich (sect. 7.3) (Due December 9th)

28 (Monday, December 9th): Review
(Quiz Today)

29 (Wednesday, December 11th): Review

The <u>final exam</u> will be on the scheduled final exam date as scheduled by Rutgers University.

VII. Current Academic Integrity Policy
> To view the current academic integrity policy, visit the link here.

VIII. Self-Reporting Absence Application:

> "Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website https://sims.rutgers.edu/ssra/ to indicate the date and reason for your absence. An email is automatically sent to me [the instructor]."