PY2001 FORMAL & PHILOSOPHICAL LOGIC

Deparment of Philosophy
University of St Andrews

Semester 1, 2014-2015

Module Coordinator: Dr Aaron J. Cotnoir
Email: ac117@st-andrews.ac.uk
Office: Edgecliffe G07
Office Hours: Friday, 10.00–11.00 (or by appointment)

Lectures: every Tuesday and Friday, 14.00–15.00, Arts Seminar Room 4

Examples Classes: weekly, starting week two (sign up via MMS)

Group 1: Thursday, 9.00–10.00 Edgecliffe 104

Group 2: Thursday, 9.00–10.00 Edgecliffe G01

Group 3: Thursday, 15.00–16.00 Edgecliffe G01

Group 4: Thursday, 12.00–13.00 Edgecliffe 104

Group 5: Thursday 13.00–14.00 Edgecliffe 104

Logic Surgery: weekly, starting week two

Day, Time, Location, TBA

Course Description

The course aim is to develop a deeper understanding of philosophical logic by looking at: the differences between a variety of formal systems, as well as the philosophical issues which motivate them. We will study classical, intutionistic, and modal logics from both semantic and proof-theoretic perspectives.

Learning Outcomes

The student will gain broad competencies in working with the most common systems of formal logic. They will critically analyse and evaluate the adequacy of these systems. Moreover, students will learn to apply this knowledge to evaluate philosophical arguments, especially in debates within metaphysics, the philosophy of language, and the philosophy of science.

Module Texts

REQUIRED:

- Graham Priest, *An Introduction to Non-Classical Logic* (2nd edition), Cambridge University Press, 2008. [ISBN: 978-0-521-67026-5]
- Module Handouts ('HO'), available on MMS.

RECOMMENDED:

- JC Beall, *Logic: The Basics*, Routledge, 2010.
- Colin Howson, *Logic With Trees*, Psychology Press, 1997.

Assignments

There are two types of assignments, but *all* are required to pass.

- UNASSESSED: weekly exercise sets due on *Mondays* in the Edgecliffe front office (G09).
- ASSESSED: two long exercise sets (25% each) due on *Friday of weeks 6 and 11* in the Edgecliffe front office (G09), and a final exam (50%).

Module Requirements

- Students are expected to complete all weekly reading assignments before class.
- Students are required to attend all lectures and examples classes.
  - *N.B. three or more unexcused absences from examples classes will result in failure with a grade of '0X', which does not permit reassessment.*
- Students must submit all assignments on time.
  - *N.B. failure to submit an exercise set forfeits your right to be marked in attendance at the examples class for that week.*
- Reassessment is permitted for those who fail with an overall grade of > 4.0.

Optional Logic Surgeries

- Each week examples class leaders will lead an extra 'logic surgery' session.
- Students are *not* required to attend any surgeries, nor will there be any work or preparation required for them.
- The surgeries are intended to aid those who are struggling to understand the content and keep up with the pace of the module.

For details please read the *Philosophy Handbook for Undergraduates*
carefully regarding absences, late assignments, academic alerts, plagiarism etc.
Ignorance of the information in the handbook will not be accepted
as an excuse for failing to meet module requirements.
See: `http://www.st-andrews.ac.uk/philosophy/current/ugrad/`

Provisional Schedule

WEEK 1 **Classical Semantics and Tableaux**

Reading: Priest §§1.1–1.5, HO #1

Tu. Sept. 16	Lecture
Sign up!	Examples Classes
Fri. Sept. 19	Lecture

WEEK 2 **Classical Natural Deduction**

Reading: HO #2

Tu. Sept. 23	Lecture
Th. Sept. 25	Examples Class
Fri. Sept. 26	Lecture

WEEK 3 **Modal Semantics and Tableaux**

Reading: Priest §§2.1–2.8, HO #3

Tu. Sept. 30	Lecture
Th. Oct. 2	Examples Class
Fri. Oct. 3	Lecture

WEEK 4 **Modal Variations**

Reading: Priest §§3.1–3.5, HO #4

Tu. Oct. 07	No Lecture
Th. Oct.. 09	Examples Class
Fri. Oct. 10	Lecture

WEEK 5 **Classical Predicate Logic**

Reading: Priest §§12.1-12.4, HO #5

Tu. Oct. 14	Lecture
Th. Oct. 16	Examples Class
Fri. Oct. 17	Lecture

WEEK 6 **Predicate Natural Deduction**

Reading: HO# 6

Tu. Oct. 21	Lecture
Th. Oct. 23	Examples Class
Fri. Oct. 24	Lecture

«Long Exercise Set Due Friday»

WEEK 7 **Modal Predicate Logic**

Reading: Priest §§14.1–14.3,15.1–15.3, HO#7

Tu. Oct. 28	Lecture
Th. Oct. 30	Examples Class
Fri. Oct. 31	Lecture

WEEK 8 **Intuitionistic Semantics and Tableaux**

Reading: Priest §§6.1–6.6, HO#8

Tu. Nov. 04	Lecture
Th. Nov. 06	Examples Class
Fri. Nov. 07	Lecture

WEEK 9 **Intuitionistic Natural Ded.**

Reading: HO #9

Tu. Nov. 11	Lecture
Th. Nov. 13	Examples Class
Fri. Nov. 14	Lecture

WEEK 10 **Many-Valued Semantics and Tableaux**

Reading: Priest §§7.1–7.4, HO #10

Tu. Nov. 18	Lecture
Th. Nov. 20	Examples Class
Fri. Nov. 21	Lecture

WEEK 11 **Fuzzy Semantics and Tableaux**

Reading: Priest §§11.1-11.4, 11.7a, HO #11

Tu. Nov. 25	Lecture
Th. Nov. 27	Examples Class
Fri. Nov. 28	Lecture

«Long Exercise Set Due Friday»

WEEK 12 **Revision Week**