PHIL 170: Introduction to Logic

Instructor:	Eric Pacuit (pacuit.org)
Semester:	Fall 2015
Email:	epacuit@umd.edu
Course Website:	myelms.umd.edu/courses/1154637
Office:	Skinner 1103A
Office Hours:	Wednesdays, 2:00pm - 3:30pm
Class Times:	MW 11:00am - 11:50am
Class Location:	LeFrak 2205

Teaching Staff

Charles Barclay	*Office*: Skinner 1120B, *Office Hours*: MW 12:00 - 12:50 *Email*: charlesbarclay23@hotmail.com
Michael McCourt	*Office*: Skinner 1118C, *Office Hours*: M 2:30 - 4:30pm *Email*: mmccour2@umd.edu
Xuan Wang	*Office*: Skinner 1110C, *Office Hours*: MW 12-1pm *Email*: xuanwang@umd.edu

Course Description

This course will introduce students to two logical systems: Propositional Logic and First Order Logic. For each we discuss the syntax (what it means to construct a well formed sentence in the logic), the semantics (how one decides whether or not a sentence in the logic is true), a proof theory (how, if you know some true things, you can figure out what else is true), and how to translate between the logics and natural English.

Textbook

We will be using an online textbook/tutorial called **Logic & Proofs**, part of the *Open Learning Initiative* at Carnegie Mellon University. The course was developed by Wilfred Sieg and Dawn McLaughlin. The cost is $80. To access the course:

1. Logon to the ELMS course website: `https://myelms.umd.edu/courses/1154637`
2. The homepage contains a list of modules. Open the "Online Textbook" module and click on the "Logic & Proofs" link.

3. Follow the instructions to register and pay for the course. The course key is `umd-phil170`.

4. Notes about the site

   - Make sure you register for the course through the elms site.
   - You need to have the latest version of Java installed to run the LogicLab. If you aren't sure if you have the latest version of Java (or don't know what Java is), you can test your system here: `https://oli.cmu.edu/configure/l_and_p-6.1_exam_pkg_a-1.0.html` and follow the instructions to install Java.
   - The browsers that are supported include IE, Firefox and Safari (note that Google Chrome is not supported. It is best if you do not use Chrome to access the site).
   - You can rent laptops from the library (`http://www.lib.umd.edu/tlc/equipment`).
   - Contact me if you have any problems accessing the course website.

Additional Readings.

Consult the following texts and online courses for additional readings about logic.

- `http://www.logicinaction.org`: A free online textbook providing a general introduction to logic.
- *Language, Proof and Logic* by Dave Barker-Plummer, Jon Barwise and John Etchemendy. There is an associated online course with Coursera.
- *Logical labyrinths* and *A Beginner's Guide to Mathematical Logic* by Raymond Smullyan
- Hong Kong University online logic course:
  `http://philosophy.hku.hk/think/logic/whatislogic.php`
- *Symbolic Logic: A First Course* by Gary Hardegree (website)
- *Logic: An Introduction* by Greg Restall

Academic Support

You should make sure you are familiar with the rules regarding proper academic conduct as outlined at `http://www.shc.umd.edu/`.

Tutoring. The Academic Achievement Programs offers free tutoring for PHIL170 through the Academic Success and Tutorial Services office. o connect with a complimentary, peer tutor for this course, sign up directly at `https://umdtutoring.mywconline.com/`. For questions, contact Christine Duchouquette, Tutorial Coordinator for the Academic Achievement Programs (AAP) at `cduchou@umd.edu` or 301-405-4745.

Accommodations. Students who require special accommodations should inform the instructor at the beginning of the course, and must provide the appropriate documentation from the DSS office (see `http://www.counseling.umd.edu/DSS/`).

Class Cancelations

The University may be closed in the event of an emergency, in which case class will be cancelled. To find out if the University is closed you can check its main site (`http://www.umd.edu`), its emergency preparedness site (`http://www.umd.edu/emergencypreparedness/`), or call the "snow phone line" at 301-405-7669 (which covers more than just snow caused closings). If class is cancelled while the University remains open, then there will be an announcement posted on the course ELMS page.

Grading Policy

The course requirements are: attendance & quizzes (10%), problem sets (25%), 3 midterms (15% each), and a final exam (20%).

Attendance & quizzes: ***Attendance is mandatory.*** Attendance will be recorded at the Sections. Students are allowed at most two unexcused absences. Students will receive a maximum 20 points for attendance.

There are a number of online quizzes scheduled throughout the semester. In addition, there will be some in-class quizzes. The in-class quizzes will be announced on the course website (you are responsible for monitoring the website for all relevant announcements). Your final quiz grade will be an average of all the in-class on online quizzes. The due dates for the quizes are available on syllabus on the Course Website. Late quizzes will not be accepted.

Problem Sets: Problem sets involve interactive tutorials available on the course website. The due dates for the problem sets are available on syllabus on the Course Website. Late problem sets will not be accepted.

Midterm Exams: There will be three midterm exams. Each midterm consists of a quiz (multiple choice/true-false/fill in the blank questions) and labs. The due dates for the midterms are:

- Midterm Exam #1: Quiz (10/2/2015, 11:59pm), Truth-Table Lab (10/4/2015, 11:59pm), Truth-Trees Lab (10/4/2015/11:59pm)
- Midterm Exam #2: Quiz (10/30/2015, 11:59pm), Truth-Table Lab (11/2/2015, 11:59pm), Truth-Trees Lab (11/4/2015/11:59pm), Derivations Lab (11/4/2015/11:59pm)
- Midterm Exam #3: Quiz (11/20/2015, 11:59pm), Truth-Trees Lab (11/22/2015, 11:59pm), Derivations Lab (11/22/2015/11:59pm)

Midterms will not be accepted after the deadline (the answers will be revealed after the deadline).

Final Exam: The final will be an in-class exam given during finals week. It will be a cumulative exam covering all the topics discussed throughout the semester.

Tentative Syllabus

Below is a tentative schedule for the semester (consult the course site for more details and due dates for the quizzes/labs and midterms).

Part I: Introduction

Aug. 31 (Mo)	**Course Overview**
Sep. 2 (We)	**Chapter 1: Statements, Premises, and Conclusions**
Sep. 7 (Mo)	**No Class: Labor Day**
Sep. 9 (We)	**Chapter 2: Arguments, Validity, and Structure**

Part II: Sentential Logic

Sep. 14 (Mo)	**Chapter 3: Syntax and Symbolization**
Sep. 16 (We)	**Chapter 3: Syntax and Symbolization**
Sep. 21 (Mo)	**Chapter 4: Semantics**
Sep. 23 (We)	**Chapter 4: Semantics**
Sep. 28 (Mo)	**Chapter 4: Semantics**
Sep. 30 (We)	**Chapter 4: Semantics**
Oct. 5 (Mo)	**Chapter 5: Derivations**
Oct. 7 (We)	**Chapter 5: Derivations**
Oct. 12 (Mo)	**Chapter 5: Derivations**
Oct. 14 (We)	**Chapter 5: Derivations**
Oct. 19 (Mo)	**Chapter 6: Indirect Rules**
Oct. 21 (We)	**Chapter 6: Indirect Rules**
Oct. 26 (Mo)	**Chapter 7: Strategies and Derived Rules** *Guest Lecturer: I am away at a conference in Tawain*
Oct. 28 (We)	**Chapter 7: Strategies and Derived Rules** *Guest Lecturer: I am away at a conference in Tawain*

Part III: Predicate Logic

Nov. 2 (Mo)	**Chapter 9: Syntax and Semantics I**
Nov. 4 (We)	**Chapter 9: Syntax and Semantics I**
Nov. 9 (Mo)	**Chapter 10: Syntax and Semantics II**
Nov. 11 (We)	**Chapter 10: Syntax and Semantics II**
Nov. 16 (Mo)	**Chapter 10: Syntax and Semantics II**
Nov. 18 (We)	**Chapter 11: Derivations**
Nov. 23 (Mo)	**Chapter 11: Derivations**
Nov. 25 (We)	**Chapter 11: Derivations**
Nov. 30 (Mo)	**Chapter 12: Strategies and Derived Rules**
Dec. 2 (We)	**Chapter 12: Strategies and Derived Rules**
Dec. 7 (Mo)	**Additional Topics**
Dec. 9 (We)	**Course Review**

Dec. 14-19 **Exam week (Date: TBA)**