

## Course Syllabus

### MARY SALVAGGIO

salvaggio.mary@gmail.com

Office: Google Hangouts/ Skype

Office Hours: By arrangement

#### Course Description and Goals

This is a first course in symbolic logic and presupposes no previous background in philosophy or mathematics. It is suitable for any undergraduate interested in the basics of formal logic. This course introduces students to two very useful logical systems: standard propositional logic and standard predicate logic. We will study the grammar, proof theory, and semantics for these languages. Students will learn

- (1) how to translate arguments from English into these languages,
- (2) how to construct rigorous proofs of theorems, and
- (3) how to find models and countermodels for formulas in these systems.

This course satisfies Core Curriculum Goal 'x': Apply effective and efficient mathematical or other formal processes to reason and to solve problems.

#### Expectations and Grading

Even though this course is online, the expectations and grading are similar to a traditional classroom course. There are reading and homework assignments, quizzes, exams, lectures, and class discussions. The major difference is that you can do everything on your own time. Without a set class time, it is important to manage your time wisely to keep on track. At the end of every unit is a Weekly Checklist with all assignments and due dates listed in one place. All assignments must be completed by 11:59 p.m. on the due date.

This course will be broken up into week-long units. Each unit includes:

1. Reading assignment,
2. Reading comprehension quiz (due Wednesdays),
3. Powerpoint presentation,
4. Discussion questions, and
5. Homework assignment (due Fridays).

There will also be a final exam.

#### GRADING

- Homework 50%
- Final Exam 20%
- Midterm Exam 10%
- Quizzes 10%
- Participation 10%

#### Textbook and Software

### Required Text:

Language, Proof, and Logic 2<sup>nd</sup> Edition by Barker-Plummer, Barwise and Etchemendy

You can purchase either a physical copy of the book that comes with the software on CD, or a pdf copy of the book that comes with a download of the software. (<http://ggweb.stanford.edu/store>) This course uses an online grading system (Grade Grinder) the comes only with new copies of the textbook.

YOU MUST PURCHASE A NEW COPY OF THE BOOK TO SUBMIT YOUR HOMEWORK.

#### Homework

There will be a homework assignment for each unit due by midnight on Saturdays (Friday night).

Many homework problems must be completed using one of the software programs included with the textbook. Please familiarize yourself with these programs before attempting the first homework assignment. Read Essential instructions about homework exercises on pages 5-11 of the textbook and complete the "you try it".

You will need to know my name (Mary Salvaggio) and email address (salvaggio.mary@gmail.com) to submit your homework to me through Grade Grinder. I will only grade your first submission, so make sure you have answered all questions and checked your work before submitting it to me. You can submit your work to Grade Grinder without sending it to me by selecting "student report only" to check your answers. I recommend you do this in order to get the highest grade possible.

The grading program can detect copied homework and so can I. You can discuss homework problems with your classmates, but any work you submit must be your own. Copying homework will be considered a violation of the academic integrity policy in this course.

#### Quizzes

There will be a reading comprehension quiz for every unit. The purpose of the quiz is to check that you've read and understood that week's reading assignment. You will have five minutes to complete the quiz and can only attempt it once, so make sure you're ready before starting.

Quizzes will be graded on a scale from 0 to 2. An incomplete quiz will get a 0. A correct quiz

response gets a 2. An incorrect but completed quiz will get a 1.

---

**Participation** Since there are no class meetings, the class discussion forum is the place to ask and answer questions, and to participate in discussion with your classmates. Your participation grade will be primarily based on your level of engagement in the discussion sections.

How much participation is enough? The more the better!

At a minimum, try to make one significant contribution to the discussion each week. This may be something as small as asking a question about something you're having trouble with. If you feel like you have a good grasp of the material, consider answering other students' questions. Logic can be extremely difficult, but working together really helps.

---

**Exams** There will be two exams in this course; a midterm and a final.  
The midterm exam will be a larger than normal homework assignment due on Feb 28 covering propositional logic.  
The final exam will be cumulative, open-book and due on May 9th. More details will follow as we get closer to the end of the semester.

---

**Academic Integrity** While students are encouraged to discuss the course material with others, all submitted work must be solely that of the student her/himself. All students should make sure that they are familiar with the university's academic integrity policy which can be found at <http://academicintegrity.rutgers.edu/>.

I take academic integrity extremely seriously. All suspected violations of this policy will be reported to the appropriate authority.

---

**Disability Accommodation** If you require special accommodations, please contact me as soon as possible. If you have any questions about the university's accommodation policies, contact the Rutgers Office of Disability Services. <http://disabilityservices.rutgers.edu/>

---

**Course Schedule**

- Jan 21-24 Unit 1: Introduction
- Jan 27-31 Unit 2: Basics of Atomic Sentences, Validity and Soundness
- Feb 3-7 Unit 3: Truth Functions
- Feb 10-14 Unit 4: Logical Consequence and Fitch Proofs
- Feb 17-21 Unit 5: Conditionals and Biconditionals
- Feb 24-28 Unit 6: Propositional Logic Wrap-up/Review
- Feb 28 Midterm Exam Due
- Mar 3-7 Unit 7: Introduction to Quantification
- Mar 10-14 Unit 8: FOL
- Mar 15-24 Spring Break
- Mar 24-28 Unit 9: Multiple Quantifiers

Mar 31 – Apr 4 Unit 10: Quantifier Proofs  
Apr 6-11 Unit 11: Numerical Quantification  
Apr 14-18 Unit 12: Set Theory  
Apr 21-25 Unit 13: Mathematical Induction  
Apr 28- May 2 Unit 14: Final Wrap-up/Review  
May 5 Final Exam Posted  
May 9 Final Exam Due

---

eCollege All assignments, lectures, and discussions are located at the eCollege website for this course. Sign in with your netid at <http://onlinelearning.rutgers.edu/ecollege> by clicking "student login". Once you sign in, you should see this course (730:201) listed under Spring 2014 courses. If you can't access this website, contact me ASAP at [salvaggio.mary@gmail.com](mailto:salvaggio.mary@gmail.com).