**PHIL 109 - 3**

**Modern Logic**

Queens College/CUNY

Department of Philosophy

Spring 2014

**Tuesdays and Fridays 12:15pm - 1:30pm**

**Kiely Hall 312**

Instructor: **Claudia Pace**

office: Powdermaker Hall 350T

office hours: Tuesdays 11:00 – 12:00 or by appointment (do not hesitate to visit me!)

email: cpace@gc.cuny.edu

**COURSE DESCRIPTION**

This is an introductory class in formal logic. This class introduces students to formal techniques for evaluating arguments. These are the principles that underlie all sound reasoning. We will cover a natural deduction system of sentential logic, truth-tables, and derivation in first-order predicate logic. Exams are designed to test skill with the formal systems, particularly translation from English to formulas, proof techniques, and methods for showing invalidity. These skills are not merely ends in themselves but also tools to help you understand what it really means to reason logically.

This course is aligned with the Core Values of the Education Unit of promoting ***Equity***, ***Excellence***, and ***Ethics*** in urban schools and communities. More specifically, the Education Unit is committed to preparing teachers and other school professionals who: a) build inclusive communities that nurture and challenge all learners; b) demonstrate professionalism, scholarship, efficacy, evidence-based practice and reflection; and c) value diversity, democracy, and social justice.

**COURSE LEARNING GOALS & OBJECTIVES**

After successfully taking this course, you should:

1. Understand the definition of *argument,* and the difference between a *sound* argument

and a *valid* argument.

2. Know the meanings of important logical terminology (*valid*, *invalid*, *sound*, *unsound*, *consistent*, *inconsistent*, *contingent*, *theorem*, *tautology, etc.*).

3. Know how to use *semantic methods* (truth tables, countermodels) to test for validity

and related properties.

4. Be able to translate English sentences into the formal languages of both sentential

logic and predicate logic.

5. Be able to construct *derivations* in formal systems for sentential logic and predicate

logic.

**COURSE MATERIALS**

We will be using a free online textbook. Still, to make things easier for everybody, I will be putting it on the course Blackboard.

**Textbook (free online):**

Hardegree, Gary M. (2006). *Symbolic Logic: A First Course*. McGraw-Hill/Learning Solutions.

**ASSIGNMENTS, DUE DATES AND GRADING PLAN**

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| --- | --- | --- |
| **COMPONENT** | **WEIGHT %** | **DATES** |
| Attendance | 10 | Every class |
| Homework (8 assignments)    The assignments available in-class only and are due in-class only. | 40 (total) | 1: Friday, February 4  2: Friday, February 14  3: Tuesday, February 25  4: Tuesday, March 11  5: Tuesday, March 25  6: Friday, April 11  7: Friday May 2  8: Tuesday, May 13 |
| Test #1 | 10 | Friday, February 28 |
| Test #2 | 15 | Friday, March 28 |
| Final Exam | 25 | Friday, May 23  11:59 pm |

ATTENDANCE

Attendance will be taken at the beginning of every class. If you are not present for attendance (this includes if you are late), you are considered ABSENT for the day.

Attendance Grades will be awarded at the end of semester as follows:

|  |  |
| --- | --- |
| ***Total number of absences*** | ***Grade*** |
| 0-2 absences | 10 |
| 3-4 | 9 |
| 5-6 | 8 |
| 7 or more | **FAIL ENTIRE CLASS** |

HOMEWORK

**Queens College’s grading scheme is as follows**: **A+**/97-100; **A**/93-96; **A-**/90-92; **B+**/87-89; **B**/83-86; **B-**/80-82; **C+**/77-79; **C**/73-76; **C**-/70-72; **D+**/67-69; **D**/60-66; **F**/0-59.

**LATE POLICY**

As might be expected, assignments are due at the time and date specified in the statement of the problem. Where you are unable to complete an assignment as a result of documented reason, such as illness, family duties, or some other event that incapacitates you, then you should let me know. All assignments are due *at the beginning of class* on the stated date. If you submit your assignment *after* the beginning of class, you will be deducted 1 point. If you submit before the beginning of the next class, you will be deducted 2 points. We will go over the answers in class after they are due (eg: If due on Tuesday, we go over them on Friday, after they have been graded). NO ASSIGNMENTS WILL BE ACCEPTED IF THEY ARE SUBLITTED AFTER WE HAVE STARTED TO TAKE THEM UP..

**CUNY POLICY ON ACADEMIC INTEGRITY**

The Policy on Academic Integrity, as adopted by the Board is available to all candidates. Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion. This policy and others related to candidates’ issues are available to you at: <http://qcpages.qc.cuny.edu/provost/Policies/index.html>.

**USE OF CANDIDATE WORK**

All teacher education programs in New York State undergo periodic reviews by accreditation agencies and the state education department. For these purposes, samples of candidates’ work are made available to those professionals conducting the review. Candidate anonymity is assured under these circumstances. If you do not wish to have your work made available for these purposes, please let the professor know before the start of the second class. Your cooperation is greatly appreciated.

**REASONABLE ACCOMMODATIONS FOR CANDIDATES WITH DISABILITIES**

Candidates with disabilities needing academic accommodation should: 1) Register with and provide documentation to the Special Services Office, Kiely 171; 2) Bring a letter to me indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens College candidates, contact: Special Service Office; 171 Kiely Hall; 718-997-5870 (8:00 a.m. to 5:00 p.m.).

**COURSE EVALUATIONS AND ASSESSMENTS**

Course Evaluations are available to candidates online at:

<http://www.qc.cuny.edu/courseevaluation>.

Education Unit Assessment Forms are available to candidates online at:

<https://intaps.qc.cuny.edu/pls/qcteams/qcteams.login_pkg.login_form>.

**TENTATIVE SCHEDULE OF EVENTS**

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| --- | --- | --- | --- |
| **DATE** | **PLAN** | **READINGS** | **DUE DATES** |
| Tuesday, January 29 | Introductory remarks |  |  |
| Friday, January 1 | Lecture: Chapter 1  Basic Concepts of Logic | Chapter 1 |  |
| Tuesday, February 2 | Lecture: Chapter 1  Basic Concepts of Logic | Chapter (cont’d) |  |
| Friday, February 4 | Lecture: Chapter 2  Truth-Functional Connectives | Chapter 2: s1-7 | Homework 1 |
| Tuesday, February 11 | Lecture: Chapter 2  Truth-Functional Connectives | Chapter 2: s8-end |  |
| Friday, February 14 | Lecture: Chapter 3:  Validity in Sentential Logic | Chapter 3 | Homework 2 |
| Tuesday, February 18 | Lecture: Chapter 3:  Validity in Sentential Logic | Chapter 3  (cont’d) |  |
| Friday, February 21 | Lecture: Chapter 3:  Validity in Sentential Logic | Chapter 3  (cont’d) |  |
| Tuesday, February 25 | Unit 1 Review  (TEST #1 distributed) |  | Homework 3 |
| Friday, February 28 | Lecture: Chapter 4:  Translations in Sentential Logic | Chapter 4: s1-17 | Test 1 |
| Tuesday, March 4 | Lecture: Chapter 4:  Translations in Sentential Logic | Chapter 4: s1-17 |  |
| Friday, March 7 | Lecture: Chapter 4:  Translations in Sentential Logic | Chapter 4: 18-end |  |
| Tuesday, March 11 | Lecture: Chapter 5  Derivations in Sentential Logic | Chapter 5: s1-4 | Homework 4 |
| Friday, March 14 | Lecture: Chapter 5  Derivations in Sentential  Logic | Chapter 5: s6-13 |  |
| Tuesday, March 18 | Lecture: Chapter 5  Derivations in Sentential Logic | Chapter 5: s14-end |  |
| Friday, March 21 | Lecture: Chapter 5  Derivations in Sentential Logic | Chapter 5  (cont’d) |  |
| Tuesday, March 25 | Unit 2 Review  (TEST #2 distributed) |  | Homework 5 |
| Friday, March 28 | Lecture: Chapter 6  Translations in Monadic Predicate Logic | Chapter 6: s1-12 | Test 2 |
| Tuesday, April 1 | Lecture: Chapter 6  Translations in Monadic Predicate Logic | Chapter 6  13-end |  |
| Friday, April 4 | Lecture: Chapter 6  Translations in Monadic Predicate Logic | Chapter 6  (cont’d) |  |
| Tuesday, April 7 | Lecture: Chapter 6  Translations in Monadic Predicate Logic | Chapter 6  (cont’d) |  |
| Friday, April 11 | Lecture: Chapter 7  Translations in Polyadic Predicate Logic | Chapter 7  (cont’d) | Homework 6 |
| **SPRING RECESS** |  |  |  |
| Friday, April 25 | Lecture: Chapter 7  Translations in Polyadic Predicate Logic | Chapter 7  (cont’d) |  |
| Tuesday, April 29 | Lecture: Chapter 7  Translations in Polyadic Predicate Logic | Chapter 7  (cont’d) |  |
| Friday, May 2 | Lecture: Chapter 8  Derivations in Predicate Logic |  | Homework 7 |
| Tuesday, May 6 | Lecture: Chapter 8  Derivations in Predicate Logic |  |  |
| Friday, May 9 | Lecture: Chapter 8  Derivations in Predicate Logic |  |  |
| Tuesday, May 13 | Unit 3 Review  **FINAL EXAMS TO BE DISTRIBUTED IN CLASS** *ATTENDANCE WILL BE TAKEN. IF YOU DO NOT ATTEND CLASS ON THIS DAY, YOU GET AN AUTOMATIC ZERO ON YOUR FINAL* |  | Homework 8 |
| Friday, May 23 | **FINAL EXAM  11:59 pm**  FINAL EXAMS DUE, *ELECTRONICALLY,* TO MY EMAIL.  *IF YOU DO NOT SUBMIT BY THIS TIME, YOU GET AN AUTOMATIC ZERO ON YOUR FINAL* |  |  |