University of California, Santa Cruz

Philosophy 9 – Introduction to Logic (62077)

Instructor: Zachary Fruhling
Spring 2008
Hours: MWF 8:00-9:10 a.m. in Classroom Unit 1
Office Hours: F 9:30-10:30 a.m. in Cowell Annex 101
Email: zfruhlin@ucsc.edu
TA's: Matthew Frise, Paul Guernsey, Ryan Scherbart (see http://philosophy.ucsc.edu/grad/students.html for contact information)

Course Description:

Official Description: "A study of correct reasoning, concentrating on developing the skills necessary to distinguish logically correct from logically incorrect arguments. The emphasis is on modern symbolic logic, although the traditional theory of the syllogism is also covered." - UCSC Course Catalog

Description Unpacked: The purpose of this course is for you to learn various formal techniques for evaluating arguments. The English language is a notoriously difficult language both to learn and to reason in. This course presents various methods for overcoming the inherent difficulties of reasoning in natural language by reasoning in an artificial but more formal and rigid artificial language: modern symbolic logic. While this course should have broad appeal for you, given that arguments occur in practically every area of thought, it must be remembered that logic is chiefly a tool to allow you to reason better and more reliably in whatever area of thought you are pursuing. Although this is a philosophy course, we will be more concerned with the mechanics and structure of good reasoning than the substance of that reasoning itself. To that end, this course will more closely resemble a mathematics course, due to its formality and rigor, than a substantive course on philosophical issues.

***Learning Outcomes*:**

By the end of this course, you should be able to do the following:

*Distinguish between various types of inductive and deductive arguments
*Evaluate deductive arguments for validity and soundness using a variety of methods including truth tables, truth trees, and natural deduction.
*Extract the formal structure of arguments as they occur in ordinary language and evaluate those arguments using the methods above.
*Construct sound arguments in your own reasoning

Course Format:

- Class sessions will be a combination of lecture, group activities, and discussion.

Required Texts:

- *A Concise Introduction to Logic*, **10th** ed., **Patrick J. Hurley** (Wadsworth, 2008).

Course Requirements:

Reading Assignments:
- Below is the schedule indicating what material from the book will be covered in each class session.
- *You are expected to have read the assigned readings* ***by the time you arrive at class*** on the day for which the reading is scheduled
- Lectures are designed to supplement the reading assignments, not replace them.

Exams:
- There will be three in-class exams, each worth 30% of your final grade.
- Exams will cover material from both the lectures and the readings.
- We will review for each exam during the class meeting immediately prior to the exam day.

Homework Packets:
- Between each class session there will be a homework assignment that corresponds to the material we are currently working on.
- Homework will not be due on a daily basis, although I expect your regular completion of the assigned homework exercises. Homework will be reviewed each week in the course's discussion sections, so it will be crucial for you to come to class with questions on anything that you need clarified.
- Your homework assignments should be kept together in a folder or notebook (I will not accept unbound papers) and will be turned in *along with each of the three exams*. This will constitute the evidence to me and your TA that you have been keeping up with the work in the course and will be worth 10% of your exam grades. Your TA will make a qualitative judgment of your work and assign a grade to this packet accordingly.
- Although homework is not due regularly, it will be next to impossible to do well in this course without keeping on top of the assigned practice exercises, so ensure that you do not fall behind on the reading or homework.

Discussion Sections:
- Regular attendance in a discussion section is *mandatory* for the course. Although attendance does not make up a specific portion of your grade, you should not expect to pass the course if you are absent from more than two discussion section meetings ***in your assigned section***.

Grading:

Your final course grade will be calculated as follows:

- Three equally weighted exams, each worth one third of your final grade
- Homework packet to be due with each exam, comprising 10% of each exam grade

*Note: To pass the course, you must receive a passing grade on all exams. A failing grade on just one exam will cause you to fail the entire course. Also, the above percentages are the starting point for your TA in assigning your final grade. Your TA will have discretion to raise or to lower your grade by one half step based on factors such as participation and attendance.

Grading Scale:

Final %	Grade
90-100	A
80-89	B
70-79	C
60-69	D
< 60	F

*Exam grades will **not** be curved. A grade of "A" is a possible outcome for each student in this course.*

Tentative Course Schedule*:

Date:	**Reading Assignment**
3/31	**First Day of Class**
4/2	**Hurley 1.1-1.4 (Arguments, Premises, Conclusions, Deduction and Induction, Validity and Soundness)**
4/4	**Hurley 6.1, 6.2 (Propositional Logic, Symbols and Translation, Truth Functions)**
4/7	**Hurley 6.1, 6.2 con't (Propositional Logic Translations)**
4/9	**Hurley 6.3 (Truth Tables for Propositions)**
4/11	**Hurley 6.4 (Truth Tables for Arguments)**
4/14	**Hurley 6.5 (Indirect Truth Tables)**
4/16	**Review for Exam #1**
4/18	**Exam #1 (HW Packet #1 Due)**
4/21	**Hurley 7.1 (Natural Deduction in Propositional Logic, Rules of Implication I)**
4/23	**Hurley 7.2 (Rules of Implication II)**
4/25	**Hurley 7.3 (Rules of Replacement I)**
4/28	**Hurley 7.4 (Rules of Replacement II)**
4/30	**Hurley 7.5 (Conditional Proof)**

5/2	**Hurley 7.6 (Indirect Proof)**
5/5	**Hurley 7.7 (Proving Logical Truths, etc)**
5/7	**Review for Exam #2**
5/9	**Exam #2 (HW Packet #2 Due)**
5/12	**Hurley 8.1 (Predicate Logic, Symbols and Translation)**
5/14	**Hurley 8.2 (Rules of Inference)**
5/16	**Hurley 8.3 (Change of Quantifier Rule)**
5/19	**Hurley 8.4 (Conditional and Indirect Proof)**
5/21	**Hurley 8.6 (Relational Predicates and Overlapping Quantifiers)**
5/23	**Hurley 8.7 (Identity Statements)**
5/26	**Holiday – No Class**
5/28	**Hurley 8.7 con't (Identity Rule)**
5/30	**Predicate Interpretations**
6/2	**Monster Proofs**
6/4	**Monster Proofs II**
6/9	**Final Exam 8:00 a.m. - 11:00 a.m. (HW Packet #3 Due)**

*** Note that anything on this syllabus/schedule is subject to change.**

Other Important Considerations that May Affect Your Grade:

i) **Make every effort to attend class. This class is designed to be a relatively straightforward "B" if you (a) read the material carefully *before* class, (b) you attend every class and (c) you do every homework assignment. On the other hand, people who neglect to do these things tend to do poorly in my logic classes. Aside from this tendency to do poorly, there is no direct consequence to your grade for being absent from the lecture (sections are mandatory however). Be forewarned, though, that this material is exceedingly difficult to master when working alone, so regular attendance is strongly encouraged. *If you miss class, ask a classmate about any assignment instructions, due dates, and/or exam schedules you may have missed information about. You are responsible for finding out if you missed anything important during your absence and for being present on exam dates.***

ii) **Make every effort to be at class on time. If you must be late, enter as quietly and inconspicuously as possible - don't distract others who have arrived on time. If you are consistently late to meetings, I will ask you to drop the class. Class will begin promptly at 8:00 a.m., so please plan accordingly. I have two basic requirements for everyone in my classroom: show up on time and with a good attitude. I am unfailingly strict about punctuality and professionalism in class.**

iii) **Please make sure you hand in all work on time. I will *not* accept late work. *Having been absent from class will not be an adequate excuse for not being prepared for class - if you miss class, ask a classmate about any assignment instructions and due dates you may have missed information about.***

iv) **Participation, both oral and written, is required for this course. This course is interactive by nature and is not merely a lecture course (although I will lecture regularly). If you are uncomfortable with participation, this may not be the class for you (although I attempt to make the participation as painless, albeit as challenging, as possible).**

v) ***No makeup exams will be given*, although the exam dates may be modified depending on class progress.**

vi) **Any student who wishes to drop the course is responsible for dropping himself or herself. If you neglect to drop the course by the required deadline (see the official course schedule), you will receive a failing grade.**

vii) **If you have a disability and will require special accommodations, please notify me soon after the start of classes. Any request for special accommodations must be accompanied by proper documentation.**

viii) **Do not get behind in the reading or work for this course. The material for this class is extremely cumulative. If you get behind, this will only snowball and it will be very difficult to get caught up. If you do get behind for whatever reason, make every effort to get caught up right away. The best way to do this is to visit your TA's office hours or to make an appointment with me outside of class to help you get caught up.**

ix) ***Any* form of academic dishonesty will not be tolerated. Policy on Cheating and Plagiarism: I encourage studying together but I expect that assignments handed in will be your own original work. Except when specifically assigned as such, I will not accept group efforts. If I find that the answers in two or more assignments or exams are too similar then none of the answers in question will receive any points. If you are found plagiarizing or cheating in any way on any of the exams or assignments, you will be dismissed from this class with a grade of "F" and face a referral to your college's dean.**

x) **People naturally differ widely in their natural abilities in working with formal, abstract systems such as symbolic logic. As this is an introductory logic course, we will be beginning from the ground up, giving each student in the course the ability to stay on-board with the material we will be covering. If you are one of the fortunate people who find that logic comes naturally, you will need to exercise a modicum of patience with those for whom logic is more of a struggle. I guarantee that regardless of how easy you find logic to be at the beginning, this course will be a challenge to you by the term's end; so it is imperative that you do not get complacent in your study habits. For those of you, on the other hand, who find that logic is counterintuitive for you, it is diligence and consistency in your work that will promote your success in this course.**