# Course Syllabus

**PH 333 Symbolic Logic**

**Teacher**: Dr. Gary Jason
**Office**: Humanities 311-K **Hours:** MWF 11:00-noon and by appointment
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**Website:** www.profgaryjason.com This site has your grades, my policy on cheating, all class handouts, bulletins, and links to other sites of use. Log on ASAP to familiarize yourself with it.

**Text**: *Introduction to Logic* by Gary Jason (Wadsworth, 1994)

**Course Description:** This course is a survey of First Order Logic (with identity). There are no prerequisites, but those students who have taken introductory logic will have a slight advantage over those who have not. The focus of the course is developing competence in proof construction.

**Learning Goals:** Symbolic logic (specifically, FOL) is an essential tool for many areas of analytic Philosophy, such as Philosophy of Language and Philosophy of Science. The purpose of this course is to give the student a solid grounding in FOL. This includes:

- Identifying and symbolizing sentential arguments
- Truth tables
- Proofs in sentential logic (direct, conditional and Reductio)
- Symbolizing quantificational arguments
- Proofs of sentential arguments
- Proofs of invalidity of quantificational arguments
- Properties of relations
- Identity and definite descriptions
- Proofs of identity arguments

**Assessment Procedures:** The student is expected to attend regularly (no more than six absences will be allowed), and do all the assigned homework. Grading will be based upon exams and homework. The weighting is as follows:
→HW = 10%
→Hour exam #1 = 20%
→Hour exam #2 = 20%
→Hour exam #3 = 20%
→Final Exam = 30%
**GRADES WILL BE POSTED ON MY WEBSITE: www.profgaryjason.com

**Policy on Cheating:** Any student who cheats at any time in my class will receive an “F” for the entire course, and I will turn the incident over to the Chairperson of

the Department for whatever further action is required by the University. For further explanation, visit my website.

**Material covered**: Chap 1 all; Chap 2 sects 1,2,3,4; Chap3 sect 2 only; Chap 9 all; Chap 10 all; Chap 12 all; Chap 13 all.

**Topic Timeline**

Week 1…….Chaps 1, 2, 3……The nature of logic, concept of deduction, how to identify arguments

Week 2…….Chap 9 sects 1-5…..theory of deduction, object vs metalanguage, the first three connectives, truth table calculations

Week 3…….Chap 9 sects 6-9…...symbolization of natural language, the conditional and biconditional

Week 4…….Chap 9 sects 10-13…..assessment of arguments, tautologies, validity explained, variants of prepositional logic

Week 5……Hour exam #1, then start Chap 10 sects 1-3 the concept of natural deduction, inference rule, the first four inference rules

Week 6……Chap 10 sects 4-6……proofs using the first four rules, five new rules, proofs using the nine rules

Week 7……Chap 10 sects 7-9…..the rules of Conditional Proof and Reductio, proofs using the complete set of rules

Week 8……Chap 10 sects 9-11…..alternative rules, more proof strategies, proving invalidity

Week 9……Hour exam #2, then start Chap 12 sects 1-4…..referring vs characterizing expressions, particular statements, the two quantifiers, symbolization

Week 10…...Chap 12 sects 5-9…..expansions, quantifier exchange, bondage and scope, the concept of instantiation, two new inference rules

Week 11…...Chap 12 sects 10-12…..the rule of universal generalization, the rule of existential generalization, proofs using all inference rules, proving invalidity

Week 12……Hour exam #3, start Chap 13 sections 1-3…..relations and singular statements, multiple quantifiers, expansions and instantiations

Week 13……Chap 13 sections 4-5…….the five quantificational rules with relations and multiple quantifiers, useful theorems

Week 14……Chap 13 sects 6-8…….proofs of invalidity, properties of dyadic relations, identity and definite description

Week 15……Chap 13 sect 9…..inference rules for identity, proof strategies, review

Final exam as scheduled