Philosophy
Syllabus

Introduction to Symbolic Logic,	Instructor: Nathan D. Smith, PhD
PHIL 2303-77550	Spring Branch Campus, Room 900-D
Fall 2013 (3 Credit Hours)	nathan.smith2@hccs.edu
HCC – Northwest College	713-718-7258
Spring Branch Campus, Room 319	Office hours: Tuesday – Thursday, by appointment
T, Th 9:30 – 11:00 AM	

Course Description:

An introduction to Symbolic Logic, focusing on Propositional Logic with some Predicate Logic, emphasizing the rules of translating language into symbols, the rules of inference and replacement, and the mechanism of reasoning used by computers. This course stresses the HCC Core Objectives of Critical Thinking, Communication Skills, Empirical and Quantitative Literacy, and Teamwork.

PREREQUISITE(S):
- Must be placed into college-level reading or
- be placed into college-level writing.

CO-REQUISITE(S):
- GUST 0342 and
- ENGL 0310
- ENGL 0349

FREQUENT REQUISITES
- College Level Reading
- College Level Mathematics
- College Level Writing

Course Goals:

This course focuses on the technical analysis of reasoning and its applications to constructing and testing of both natural language, pictorial, and empirical arguments using a formal, symbolic system. Students learn how to recognize, analyze, and assess rational appeals in both

rhetoric and science by using a formal system of logic. Students will consider both the semantic and syntactic elements of logic as it relates to simple statements as well as those that apply to classes of individuals and express relations between classes and/or individuals.

Student Learning Outcomes:

1. Recall and **Identify** the core components of articulated meaning understood from a logical perspective, both classical and contemporary.

2. Construct arguments using English sentences, then **Interpret** sentences in a manner that preserves their precise meaning when translated into standard form.

3. Apply "Truth Table" method to arguments in order to determine whether valid, or not-valid, then **Articulate** the understanding that Truth Tables provide for distinguishing between kinds of truth-functional statements, and sets of statements, logical equivalence, and logical implication.

4. Apply the rules of inference and replacement rules to **Construct** justified proofs of symbolic arguments, then **Implement** methods of conditional and indirect proof, including the proof of theorems.

5. Represent statements in predicate logic in symbolic form and **Apply** to categorical statements from classical logic.

Learning Objectives:

1.1 Acquire a broad familiarity with logic and its relation to the determination and expression of meaning, its formal development, and history.

1.2 Learn terms, relational operators, definitions, and concepts necessary for a truth-functional system of propositional and predicate logic, and the meaning of validity, logical proof, and fallacy.

1.3 Identify premises and conclusions of arguments; **Distinguish** between deductive and inductive arguments.

2.1 Cultivate comprehension of *relational meaning* by noting what sentences can be used to create arguments, then **Translate** these into *standard form* symbolic language.

3.1 Learn full and shortened "Truth Table" methods for testing the validity of arguments.

3.2 Articulate the relevance of truth to logic and it's relation to logical implication and fallacious reasoning.

4.1 Learn *rules of inference*, *replacement rules*, and methods of *conditional* and *indirect proof*, and **Consider** how the proof method establishes the validity of symbolic arguments.

5.1 Learn *quantification* of complex subjects / predicates and Venn diagrams.

5.2 Distinguish sentences that require existential as opposed to universal quantifiers, and **Recognize** relations between propositions in predicate logic and the classical square of opposition, then **Apply** to proofs in predicate logic.

Adopted Texts:

Magnus, P.D. *forallX: An Introduction to Formal Logic*

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Smith, Nathan D. *Philosophical Arguments*

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Course Calendar:

January 14   Syllabus and Introduction

January 16   Why Study Logic?

January 21   Arguments: ForallX, 1.1-2 and Philosophical Arguments 1-3

January 23   Fallacies: ForallX, 1.3 and Philosophical Arguments 5

January 28   Induction: ForallX 1.4 and Philosophical Arguments 6

January 30   ForallX 1.5-6

February 4   Quiz 1

February 6   Sentential Logic: ForallX 2.1

February 11   ForallX 2.2

February 13   ForallX 2.3

February 18   ForallX 2.4 and Quiz 2

February 20   ForallX 3.1-2

February 25   ForallX 3.3

February 27   ForallX 3.4

March 4   Review

March 6   Mid-Term Exam

March 18   Proofs in Sentential Logic: Philosophical Arguments, 4

March 20	ForallX 4.1
March 25	ForallX 4.2
March 27	Practice Rules
April 1	Quiz 3
April 3	ForallX 4.3
April 8	ForallX 4.4
April 10	ForallX 4.5
April 15	ForallX 4.6
April 17	Quiz 4
April 22	ForallX 4.7
April 24	More proofs exercises
April 29	ForallX 4.8
May 1	Review
May 6	Final Exam

Grading Components and Weights:

Quiz (x 4) 50 points each: At the end of each section, there will be a short test on materials covered. Quizzes will occur during the second half of the class period. During the first half of the class, you will be able to review for the quiz with your group. **Prepares for SLOs 1, 2, 3, 4, and 5.**

Homework 100 points: There will be daily homework exercises. I will record your completion of homework exercises and you will be graded for completion.

Mid-term Exam 100 points: There will be an in-class mid-term exam on material covered in the first half of the course. The exam will cover translation of sentences into symbolic form, demonstration of an understanding of validity and soundness, and application of the truth table method to test for validity. **Assesses SLOs 1, 2, and 3.**

Final Exam 100 points: The final exam will be held on the officially scheduled exam date. The final exam will cover construction of proofs in sentential logic, translation of sentences into symbolic form, assessment of validity and soundness using truth tables, understanding of core logical vocabulary. **Assesses SLOs 4, and 5.**

Grading Policy:

All grades will be calculated according to a percentage of *total points*. The total number of points for this term is 500. The term grade legend follows:

A = 90% to 100% (450 to 500 point)   4 points per semester hour

B = 80% to 89.9% (400 to 449 points)   3 points per semester hour

C = 70% to 79.9% (350 to 399 points)   2 points per semester hour

D = 60% to 69.9% (300 to 349 points)   1 point per semester hour

F = 0% to 59.9%   (000 to 299 points)   0 points per semester hour

FX (Failure due to non-attendance)   0 points per semester hour

IP (In Progress)   0 points per semester hour

W (Withdrawn)   0 points per semester hour

I (Incomplete)   0 points per semester hour

AUD (Audit)   0 points per semester hour

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses.

FINAL GRADE OF FX: Students who stop attending class and do not withdraw themselves prior to the withdrawal deadline may either be dropped by their professor for excessive absences or be assigned the final grade of "FX" at the end of the semester. Students who stop attending classes will receive a grade of "FX", compared to an earned grade of "F" which is due to poor performance. Logging into a DE course without active participation is seen as non-attending. Please note that HCC will not disperse financial aid funding for students who have never attended class.

Students who receive financial aid but fail to attend class will be reported to the Department of Education and may have to pay back their aid. A grade of "FX" is treated exactly the same as a grade of "F" in terms of GPA, probation, suspension, and satisfactory academic progress.

To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.

Late policy:

Late work will be accepted with penalty, unless I have received a valid excuse or the student has arranged for late submission *prior to the deadline*. I will deduct a minimum of 10% of the grade from the first day the assignment is late and an additional 10% of the grade for every week it is late after that.

!! Philosophy Tutoring is available at http://hccs.askonline.net/ **Please use it if you need it !!**

Academic Honesty:

The pressure to earn high grades and belief that *a good end can justify any means whatsoever* leads many students to try cutting corners by resorting to less than honest methods. Do yourself a favor by avoiding that trap. The HCC *Student Handbook* lists cheating, plagiarism, and collusion as scholastic dishonesty. It defines *plagiarism* as "the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit." It defines *collusion* as "the unauthorized collaboration with another person in preparing work for credit." Work submitted for this course that is determined to be the result of either cheating, plagiarism, or collusion will earn a "0" for that assignment; two instances of cheating, plagiarism, or collusion will result in an automatic "F." Probation or dismissal from HCC and ALL its several colleges may also result. *See HCC Student Handbook.*

Make-up Policy:

Students are responsible for materials covered in-class and online during their absences, and it is the student's responsibility to contact and consult with the instructor for make-up assignments. In addition, any student who is absent on posted exam dates should be prepared to schedule the make-up of missed examinations on the first day of returning to class. Make-up examinations are taken by appointment at the campus Testing Center. This scheduling cannot occur during class time. Any other assignments not turned in on time (due to absences) must also be either turned in, or scheduled for late submission on the first day of returning to class. Finally, there will be no extension of due dates and/or make-ups for Online Requirements. Except for a medical excuse or documented family or personal emergency, there is no exemption from these rules.

Attendance and Withdrawal Policy:

HCC Students are expected to attend class regularly. A daily record of absences will be maintained throughout the semester. NOTE: It is the responsibility of the student to drop, or officially withdraw from this course. Your instructor will withdraw a student if and only if provided a written request from that student. Additionally, system-wide rules affect withdrawals:

(1) Students who repeat a course for a third, or more times, may face a significant tuition/fee increase at HCC and other Texas public colleges and universities.

(2) The Texas Legislature passed a law limiting new students (those starting college in Fall 2007) to no more than six total course withdrawals throughout their academic career in obtaining a baccalaureate degree. There may be future penalties imposed.

(3) No student may withdraw from a course following the set "last date to withdraw", which for Spring 2014 is on March 31 at 4:30 pm. After that date and time, a student can only be given a grade earned, or an "I" for incomplete. Incompletes must be made up by the end of the following long semester, after which they will automatically change to a grade of "F". Students receiving an "I" for a course are ineligible for graduation until the "I' has been removed from a student's transcript.

Students with Disabilities:

To visit the ADA Web site, log on to www.hccs.edu, click Future students, scroll down the page and click on the words Disability Information.

For questions, please contact Donna Price at 713.718.5165 or the Disability Counselor at Northwest College, Mahnaz Kolaini at 713.718.5422.

Student Services Policies:

http://hccs.edu/student-rights

EGLS3 – Evaluation for Greater Learning Student Survey System:

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time near the end of the term, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and department chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.