

## PHIL 2352: Introduction to Contemporary Logic

Sam Houston State University

Spring 2021, CRN: 21027

SHSU Online

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**Course Description:** This course will introduce the student to the principles of ordered thought and to the terminology and rules of symbolic logic. Topics to be discussed include the logic of statements and the logic of predicates, quantifiers, and identity.

**Course Modality (Online):** This is designed as a fully online class delivered through SHSU Online. Content delivery will be asynchronous and remote, and all assignments will be completed and graded through the Blackboard system. There will be occasional course meetings scheduled for class review (especially before major assignments are due) but attendance in these will be optional, and recordings will be available for those who are not able to join.

**Prerequisites:** N/A

**Textbook:** No textbook is required for the course. All reading and additional course materials will be posted through [Blackboard](#).

### Course Objectives and Learning Outcomes:

1. *Learning fundamental principles, generalizations, or theories.* Students successfully completing this course will gain an understanding of the concepts and methods of symbolic logic. They will be able to use that logic to express patterns and relationships and to clarify ordinary language statements. We will cover topics such as deductive vs. inductive reasoning, logical connectives and truth-tables, conditional statements and quantifiers, valid and invalid arguments.
2. *Applying course material to improve thinking, problem solving, and decisions.* Students successfully completing this course will have gained skills at constructing multi-step logical proofs for arguments—a skill vital not only to mathematics, but also the legal profession, science, medicine, etc.
3. *Analyzing and critically evaluating ideas, arguments, and points of view.* Students successfully completing this course will come to a familiarity with the basics of inductive arguments, including being able to articulate the distinction between inductive and deductive reasoning and being able to recognize different types of inductive arguments and critical factors regarding each.

## Skill Objectives:

1. *Critical Thinking Skills:* This course will emphasize basic aspects of critical thinking by giving students consistent practice in systematic, structured thinking wherein each step of inference is assessed for its validity. Also, the practice of translating ordinary language statements into symbolic language of necessity compels giving careful attention to determining what exactly the statements express, another basic critical thinking skill. In addition, the critical thinking skill of being able to distinguish valid patterns of inference such as *modus tollens* (denying the consequent) and non-valid patterns such as affirming the consequent is an integral feature of the course.
2. *Communication Skills:* Communication skills will be reinforced with practice since students will regularly be doing homework problems that require written responses. Also students will routinely be called upon to present their responses to the class, orally on some occasions and, on other occasions, visually with diagrams on the board.
3. *Empirical and Quantitative Skills:* In the inductive logic portion of the course empirical and quantitative skills will be emphasized as students become familiar with the logic of hypothesis testing, in particular the need to present falsifiable hypotheses, and as they practice applying basic concepts of sampling, experimental design, and probability to situations that model real world circumstances.

**Course Outline:** The course content will begin with understanding arguments and understanding the basic tools of propositional calculus, through the syntax of propositional logic, and culminate in the semantic features of truth-functional expressions.

January 13-15	.....	Course Intro and Orientation; History of Logic
January 18-22	.....	Arguments and Deductive Form
January 25-29	.....	Inductive Arguments
February 1-5	.....	Well-Formed Formulae and Sequents
February 8-12	.....	Conjunction (&I, &E); <b>Exam #1</b>
February 15-19	.....	Conditional Elimination and Modus Ponens
February 22-26	.....	Conditional Proof
March 1-5	.....	Biconditionals and Df $\leftrightarrow$
March 8-13	.....	Modus Tollens and Double Negation; <b>Exam #2</b>
March 15-19	.....	Spring Break (no class)
March 22-26	.....	Disjunctions ( $\vee$ I, $\vee$ E)
March 29-April 2	.....	Reductio Ad Absurdum
April 5-9	.....	DeMorgan's Laws (DeM) and Df $\rightarrow$ ; <b>Exam #3</b>
April 12-16	.....	Semantics and Truth-Tables
April 19-23	.....	Semantic Implication/Equivalence
April 25-30	.....	Testing for Validity; <b>Exam #4</b>
May 3-5	.....	Review for Final

**Important Dates:**

MLK Holiday (no class) .....	January 18th
Add/Drop Deadline .....	January 29th
Spring Break (no class) .....	March 15th-19th
Q-Drop Deadline .....	March 26th
Good Friday (no class) .....	April 2nd
Course Final .....	May 10th

**Assignments:** There will be an assignment due every Friday at midnight throughout the course. After the submission is graded, you will have an opportunity to correct your work and resubmit within two weeks of the original due date.

**Exams:** In addition, there will be five exams given throughout the course. Each exam (except for the cumulative final) will cover 2-3 Units, and will open after the re-submission window for that group of assignments closes. The best four of five exams will be counted into calculating your final grade. There will be NO "make-up" opportunities on the exams.

More information on each of the types of assignments will be available under a separate "Assignment Guidelines" sheet, posted on Blackboard.

The following weighting will be used to calculate your grade:

Exams (best 4 of 5) @ 20% each .....	80%
Weekly Homework Assignments .....	20%

Your rounded average of these assignments will determine your grade, based on the following scale:

A .....	100 - 89.5
B .....	89.4 - 79.5
C .....	79.4 - 69.5
D .....	69.4 - 59.5
F .....	59.4 - 0

**Academic Dishonesty:** Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Please be aware that plagiarized work and any form of academic dishonesty will result in an "F" on the assignment. [SHSU Academic Policy Statement 810213](#) outlines the definition of academic honesty and the related disciplinary procedures.

You should also familiarize yourself with [Academic Policy Statement 900823](#), which outlines the procedures for students to file an academic grievance should you wish to appeal your grade for reasons other than academic dishonesty. Please read over these policies.

**Course Evaluations:** In accordance with University policy every student will have an opportunity at a specified date and time near the end of the semester to complete a course evaluation form from the IDEA course evaluation system.

For University policies on Student Absences on Religious Holy Days, Students with Disabilities, and Visitors in the Classroom you may view to the official statements on the SHSU Website, <http://www.shsu.edu/syllabus/>

### **Expectations, Suggestions and Mandates for an efficient class:**

1. Mastering logic requires practice. As we spend more time doing the deductions, for example, you'll find yourself getting better at it. Don't get frustrated; if you can't finish a problem, move on and come back with "fresh eyes."
2. Try to complete the week's work early. Waiting until the due date to begin the week's assignment is not advisable. Some of the assignments may take several hours to complete.
3. Especially true in philosophy more than most other subjects, diligence is important. Some of the reading will be difficult since we are looking at some of the most profound ideas in the history of the world. The difficulty of the subject is indirectly proportional to the amount of work put into the course.
4. Expect to have up to five hours a week of reading and practice in order to earn an "A" for the course. Additionally, for these reasons, attendance is of vital importance. *If you do not regularly log in or keep up with the reading and exercises, do not expect to pass this class!*
5. Please feel free to make mistakes. We all will from time to time—including your omniscient instructor.
6. Please feel free to make an appointment to discuss the material you do not understand. Waiting until the last moment in the semester to catch up is not advisable. I am excellent at fixing small problems, but horrendous at fixing large ones. The only difference between small and large problems is time.
7. Have fun! The material is only as dry as you make it out to be. Sharpening one's mind can be an exhilarating process.