

PHIL M07: INTRODUCTION TO LOGIC

Originator
mmorgan

College

Moorpark College

Discipline (CB01A)

PHIL - Philosophy

Course Number (CB01B)

M07

Course Title (CB02)

Introduction to Logic

Banner/Short Title

Introduction to Logic

Credit Type

Credit

Start Term

Fall 2024

Catalog Course Description

Explores deductive and inductive reasoning, definitions, verification, argument forms, and analyzes formal and informal fallacies. Analyzes the nature of arguments for validity and soundness. Includes a study of formal techniques of sentential logic and predictive logic.

Additional Catalog Notes

Provider approved by the California Board of Registered Nursing, provider number CEP2811 for 45 contact hours.

Taxonomy of Programs (TOP) Code (CB03)

1509.00 - Philosophy

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

A (Transferable to both UC and CSU)

Course Basic Skills Status (CB08)

N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)

E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)

N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)

Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)

N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)

Y - Not Applicable

Course Noncredit Category (CB22)

Y - Credit Course

Funding Agency Category (CB23)

Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)

1 - Program Applicable

General Education Status (CB25)

A - Satisfies English composition req (CSUGE-B A2/A3, IGETC 1A/1B, VCCCD D1, or 4-yr)

Support Course Status (CB26)

N - Course is not a support course

Field trips

Will not be required

Grading method

(L) Letter Graded

Alternate grading methods

(O) Student Option- Letter/Pass

(P) Pass/No Pass Grading

Does this course require an instructional materials fee?

No

Repeatable for Credit

No

Is this course part of a family?

No

Units and Hours

Carnegie Unit Override

No

In-Class

Lecture

Minimum Contact/In-Class Lecture Hours

52.5

Maximum Contact/In-Class Lecture Hours

52.5

Activity

Laboratory

Total in-Class

Total in-Class

Total Minimum Contact/In-Class Hours

52.5

Total Maximum Contact/In-Class Hours

52.5

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class

Minimum Outside-of-Class Hours

105

Maximum Outside-of-Class Hours

105

Total Student Learning

Total Student Learning

Total Minimum Student Learning Hours

157.5

Total Maximum Student Learning Hours

157.5

Minimum Units (CB07)

3

Maximum Units (CB06)

3

Student Learning Outcomes (CSLOs)

Upon satisfactory completion of the course, students will be able to:

- | | |
|---|---|
| 1 | demonstrate the ability to critically assess arguments expressed in public discourse. |
|---|---|

Course Objectives

Upon satisfactory completion of the course, students will be able to:

- | | |
|---|--|
| 1 | identify arguments and their basic components. |
| 2 | restate and translate statements and arguments from ordinary language into formal structures. |
| 3 | recognize, diagram, and critically evaluate the logic of categorical statements and arguments. |
| 4 | translate and rewrite ordinary language statements using formal symbolic notation. |
| 5 | test the validity of statements in formal logic using the sentential calculus. |
| 6 | apply the principles of formal deduction to arguments written in modern symbolic notation. |
| 7 | recognize and compare quantification theory with sentential logic. |

Course Content

Lecture/Course Content

20.00% A. Overview of logic

1. Basic elements of arguments

- Statements and truth value
- Premises and conclusions
- Context

2. Recognizing arguments

- Inferential discourse
- Non-inferential discourse

3. Basic types of arguments

- Deduction
- Induction

4. Related concepts

- Truth and falsity
- Empirical and necessary
- Deductive validity and invalidity
- Inductive strength and weakness
- Soundness and unsoundness

10.00% B. Categorical logic

1. Categorical statements

- Parts of a categorical sentence
 - Venn diagrams of sentences
2. The traditional square of opposition
- Logical functions
 - Contradiction
 - Contrary relations
 - Implication/alternation
 - Immediate inferences

3. Operations on categorical sentences

- Conversion
- Obversion

- Contraposition

4. Categorical syllogisms

- Arranging categorical arguments
- Testing Venn diagrams
- Testing by syllogistic rules

50.00% C. Propositional logic

1. Translating ordinary language into symbolic language

2. Logical connectives (logical "operators")

- Negation ("not")
- Conjunction ("and")
- Disjunction ("or")
- Conditionals ("if...then...")
- Bi-conditionals ("...if and only if...")

3. Semantics versus syntax of formal systems

- Semantics: focus on meaning and truth
- Syntax: focus on form or structure

4. Truth tables for propositions

5. Truth tables for arguments

6. Tautologies, contradictions and contingent statements

7. Indirect truth tables

8. Sentential logic

10.00% D. Sentential logic: proofs

1. Rules of replacement

- Statement equivalences
- Double negation
- DeMorgan's theorem
- Material implication
- Contraposition
- Argument forms
- Modus ponens/tollens
- Disjunctive syllogism
- Hypothetical syllogism
- Simplification and conjunction

2. Indirect proofs

3. Conditional proofs

10.00% E. Fallacies

1. Formal fallacies: non-sequiturs

2. Informal fallacies

- Fallacies of ambiguity
- Equivocation
- Amphiboly
- Fallacious ir/relevance
- Appeal to authority
- Appeal to popularity/tradition
- Appeal to pity
- Ad hominem attack
- False dilemma

- Begging the question

Laboratory or Activity Content

N/A

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Essay exams
 Group projects
 Individual projects
 Objective exams
 Oral presentations
 Quizzes
 Reports/papers
 Research papers
 Skills demonstrations
 Written analyses
 Written homework
 Other (specify)
 Classroom Discussion
 Projects
 Participation

Other

Problem sets

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Distance Education
 Group discussions
 Instructor-guided interpretation and analysis
 Large group activities
 Lecture
 Problem-solving examples
 Small group activities
 Other (specify)

Specify other method of instruction

debate

Describe specific examples of the methods the instructor will use:

Class is broken into small groups. Each group is assigned three logical rules of inference. The whole class is then given a topic to argue about incorporating their respective rules of inference. Each group reports out to the whole class on the argument they constructed.

Instructor leads the class into a large group philosophical discussion and debate, and provides additional lecture content on the discussion topic.

Representative Course Assignments

Writing Assignments

analyze arguments logically from contemporary sources, such as newspaper editorials.
 translate and rewrite ordinary language statements using formal symbolic notation.
 write diagram arguments.
 spot and analyze informal fallacies in everyday conversations and political speeches.
 construct formal written argument proofs.

Critical Thinking Assignments

analyze logically Karl Popper's Theory of Science.
 compare different methods of science.
 compare different definitions of definitions.

Reading Assignments

- Read section 6.1 of Hurley and Watson's *A Concise Introduction to Logic*.
- Read Section 3.2 of Hurley and Watson's *A Concise Introduction to Logic*.

Outside Assignments**Representative Outside Assignments**

use electronic resources, including supplementary textbook materials.
 meet with group members to prepare in-class reports that recognize and critically evaluate the logic of a public argument/speech.

Articulation**C-ID Descriptor Number**

PHIL 110

Status

Approved

Equivalent Courses at 4 year institutions

University	Course ID	Course Title	Units
UC Santa Cruz	PHIL 9	Introduction to Logic	5
UC San Diego	PHIL 10	Introduction to Logic	4
San Diego State Univ.	PHIL 120	Introduction to Logic	3
CSU Fresno	PHIL 45	Introduction to Logic	3
CSU East Bay	PHIL 1001	Introduction to Logic	4

Comparable Courses within the VCCCD

PHIL R107 - Introduction to Logic
 PHIL V04 - Introduction to Logic

District General Education**A. Natural Sciences****B. Social and Behavioral Sciences****C. Humanities****D. Language and Rationality****D2. Communication/Analytical Thinking**

Approved

E. Health and Physical Education/Kinesiology**F. Ethnic Studies/Gender Studies****Course is CSU transferable**

Yes

CSU Baccalaureate List effective term:

F1995

CSU GE-Breadth**Area A: English Language Communication and Critical Thinking**

A3 Critical Thinking

Approved

Area B: Scientific Inquiry and Quantitative Reasoning**Area C: Arts and Humanities****Area D: Social Sciences****Area E: Lifelong Learning and Self-Development****Area F: Ethnic Studies****CSU Graduation Requirement in U.S. History, Constitution and American Ideals:****UC TCA**

UC TCA

Approved

IGETC**Area 1: English Communication****Area 2A: Mathematical Concepts & Quantitative Reasoning****Area 3: Arts and Humanities**

Area 3B: Humanities

Approved

Expiration term:

Summer 2011

Area 4: Social and Behavioral Sciences**Area 5: Physical and Biological Sciences****Area 6: Languages Other than English (LOTE)****Textbooks and Lab Manuals**

Resource Type

Textbook

Classic Textbook

No

Description

Hurley, Patrick J., and Lori Watson. *A Concise Introduction to Logic*. 14th ed., Cengage, 2024.

Resource Type

Textbook

Classic Textbook

No

Description

Baronett, Stan. *Logic*. 5th ed., Oxford UP, 2021.

Resource Type

Textbook

Classic Textbook

No

Description

Copi, Irving M., Carl Cohen, and Victor Rodych. *Introduction to Logic*, 15th ed. Routledge, 2019.

Resource Type

Textbook

Classic Textbook

No

Description

Lee, Siu-Fan. *Logic: A Complete Introduction*. Teach Yourself, 2017.

Resource Type

Textbook

Classic Textbook

No

Description

Beall, Jc, and Shay Allen Logan. *Logic: The Basics*. 2nd ed., Routledge, 2017.

Library Resources

Assignments requiring library resources

Research using the Library's print and online resources.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Research using the Library's print and online resources for reports and comparison papers on such topics as the appeal to force, the appeal to pity, or the ad hominem argument.

Distance Education Addendum

Definitions

Distance Education Modalities

- Hybrid (1%–50% online)
- Hybrid (51%–99% online)
- 100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Instructors may provide lesson modules that require activities such as reading course material from a mandatory textbook and participating in discussion forums or chat room topics. Instructors will provide students with feedback on the content and quality of assignments and discussion posts. provide students with an online schedule of class events using the "calendar" tool in the online course shell.
E-mail	Instructors may engage students using the following communication activities available in the online classroom: contact students via e-mail within the course shell, by campus e-mail, and/or MyVCCCD; use the "announcement" tool to remind students of important assignments and due dates.
Other DE (e.g., recorded lectures)	Instructor may provide recorded instructional lectures; links to textbook and professional journals; links to online resources.
Synchronous Dialog (e.g., online chat)	Instructors may provide feedback on student graded assignments or address general student questions using the Canvas chatroom feature.
Telephone	Instructors may provide feedback on student graded assignments or address general student questions using telephone conversations.
Video Conferencing	Instructors may provide feedback on student graded assignments or address general student questions using online video conferencing like ConferZoom.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Instructors may provide lesson modules that require activities such as reading course material from a mandatory textbook and participating in discussion forums or chat room topics. Instructors will provide students with feedback on the content and quality of assignments and discussion posts. provide students with an online schedule of class events using the "calendar" tool in the online course shell.
E-mail	Instructors may engage students using the following communication activities available in the online classroom: contact students via e-mail within the course shell, by campus e-mail, and/or MyVCCCD; use the "announcement" tool to remind students of important assignments and due dates.
Other DE (e.g., recorded lectures)	Instructor may provide recorded instructional lectures; links to textbook and professional journals; links to online resources.
Synchronous Dialog (e.g., online chat)	Instructors may provide feedback on student graded assignments or address general student questions using the Canvas chatroom feature.
Telephone	Instructors may provide feedback on student graded assignments or address general student questions using telephone conversations.

Video Conferencing	Instructors may provide feedback on student graded assignments or address general student questions using online video conferencing like ConferZoom.
100% online Modality:	
Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Instructors may provide lesson modules that require activities such as reading course material from a mandatory textbook and participating in discussion forums or chat room topics. Instructors will provide students with feedback on the content and quality of assignments and discussion posts. provide students with an online schedule of class events using the "calendar" tool in the online course shell.
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Examinations

Hybrid (1%–50% online) Modality

On campus
Online

Hybrid (51%–99% online) Modality

On campus
Online

Primary Minimum Qualification

PHILOSOPHY

Review and Approval Dates

Department Chair

04/17/2023

Dean

04/17/2023

Technical Review

04/20/2023

Curriculum Committee

5/2/2023

DTRW-I

MM/DD/YYYY

Curriculum Committee

MM/DD/YYYY

Board

MM/DD/YYYY

CCCCO

MM/DD/YYYY

Control Number

CCC000428109

DOE/accreditation approval date

MM/DD/YYYY