

COURSE SYLLABUS

Philosophy 103: Introduction to Logic

SECTION 01 MWF 08:00 AM – 08:50 AM

SECTION 02 TR 08:00 AM – 09:15 AM

DEPARTMENT OF HISTORY AND PHILOSOPHY

LANDER UNIVERSITY

GREENWOOD, SC 29649

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Spring, 2007

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1 Essential Information

Instructor: <i>Lee C. Archie</i>	Office Hours
Office: <i>LC M33</i>	<i>MWF 9:00-10:00; 11:00-12:00</i>
Telephone: <i>864-388-8383</i>	<i>TTh 9:30-11:00</i>
Email: <i>larchie@philosophy.lander.edu</i>	ICQ: <i>14365150</i>

1.1 Supplementary Materials

Philosophy Homepage:

<http://philosophy.lander.edu/>

Logic Homepage:

<http://philosophy.lander.edu/logic/>

mwforum Logic Message Boards:

<http://philosophy.lander.edu/cgi-bin/mwf/forum.pl>

Logic FAQ:

<http://philosophy.lander.edu/logic/faq.html>

Philosophy Chat:

<http://philosophy.lander.edu/chat/>

Online Grades:

<http://philosophy.lander.edu/~larchie/grades/phil-pwa>

Lander Philosophy:

<http://philosophy.lander.edu/lander/index.shtml>

Notes on How to Study:

<http://philosophy.lander.edu/study-topics.html>

1.2 Appointments—Office Hours

I look forward to talking to each of you about our logic course. You are warmly encouraged to stop by my office to discuss classroom lectures, homework, or problems accessing course content. If the stated office hours do not fit your schedule, other times can be arranged. Online office hours are from 8:00 to 9:00 PM on the evenings prior to tests *via* Philosophy Chat at <http://philosophy.lander.edu/chat/>.

1.3 Email Protocol

If you have a *personal* question, concern, or problem, email your instructor at the first opportunity. If you have questions about class procedures (class policies, homework problems, class requirements, grading, assignments, or other housekeeping matters), post online to the *mwforum* Logic Message Board. Also, if you have questions about class content (logical concepts, conceptual questions, or understanding the subject-matter of logic), post online to the *mwforum* Logic Message Board. Additionally, messages from your instructor concerning changes in class policies, procedures, or scheduling will be sent to the *mwforum* Logic Message Board. In this manner, all persons in the class will have access to the same information concerning class procedures and class content, and in this manner, class information can be available to all.

1.4 General Education Core Requirements

Note especially: Although Philosophy 103 Introduction to Logic fulfils the General Education Core Curriculum Requirement for Logical and Analytical Thought for many persons, this course does *not* fulfill the General Education requirement for Humanities.

2 Course Description

2.1 Catalog Course Description

“A survey of traditional logic. Classical and contemporary logic are considered with special emphasis upon reasoning and argumentation. Attention is given to the nature of language and its relation to philosophical problems. *Three semester hours.*” From the *Lander University Catalog 2006-2007*.

2.2 Textbook

Copi, I.M., and Carl Cohen. *Introduction to Logic*. 12th edition. New York: Macmillan, 2004. ISBN: 0131898345.

2.3 Purpose of the Course

The general goal is to learn how to distinguish acceptable arguments from poor ones. The approach is two-sided: (1) the analysis and classification of fallacies and (2) the analysis and construction of valid arguments.

2.4 Objectives of the Course

The general aims of this introductory survey of logic are

1. to gain an appreciation for the complexity of language,
2. to learn effective methods of resolution for a variety of disagreements,
3. to obtain the ability to define terms,
4. to understand the structure of different kinds of arguments,
5. to recognize and evaluate the different kinds of arguments,
6. to grasp the features of traditional logic,
7. to sketch the principles of symbolic logic,
8. to obtain facility in symbolic manipulations,
9. to develop the ability to think critically, and
10. to realize that the proper use of logic is a reasonable way to solve problems.

2.5 Course Procedures

The methods used to obtain these ends are

1. to solve selected problems which illustrate basic logical principles,
2. to read carefully and critically the text,
3. to ask questions in class and the *muforum* Logic Message Board,
4. to test your understanding by means of special examinations, and
5. to question critically several interpretations of introductory logic.

2.6 Specific Skills Achieved

Upon completion of this course, all students should be able to

1. demonstrate basic skills of Internet browsing, email, and Message Boards,
2. explain the difference between an argument and a disagreement,
3. identify premisses and conclusions in complex arguments,
4. explain the difference between deduction and induction,
5. analyze the interrelation between arguments and explanations,
6. understand the differences among truth, validity, and soundness,
7. identify the differences between factual significance and emotive significance,
8. explain the significance of the major uses of language,
9. identify and explain the common fallacies which occur in everyday discourse,
10. be aware of common methods of persuasion and propaganda,
11. evaluate many kinds of deductive inferences,
12. refute arguments by devising logical analogies,
13. diagram and evaluate complex arguments.

In this course you will learn the difference between an argument and an explanation, the difference between deduction and induction, and the differences among truth, validity, and soundness in argumentation. Additionally, you will learn effective methods of analysis and criticism in the evaluation of argumentative discourse.

2.7 Teaching Methods

We adopt specific techniques recommended by many educators, namely lecture, workshop, discussion, group projects, review tests and quizzes, assigned homework, and computer applications, including message board, chat, and online supplementary material.

3 Course Requirements

3.1 Evaluation

Judgment about the progress of your work is based on the quality and depth of critical and constructive thinking exhibited on tests, quizzes, homework, and message board. Your course grade is determined by averaging the points you achieve from the following scores:

Test 1 The Structure of Arguments

Test 2 Language and Informal Fallacies

Test 3 Categorical Propositions

Test 4 Categorical Syllogisms

Quiz Average Average of scores from Best Eight Quizzes, *muforum* Message Board posts, and Web Practice Worksheet.

3.2 Grades

Judgment about the progress of your work is based on the four test scores and quiz average. Your course grade is the average of these five grades. Our course is essentially performance-based and consists of a progressive series of concepts to be learned and mastered. For this reason, few students can do well in this course by “cramming” before exams. Normally, the course is not difficult if you attend class, keep up with the homework daily, seek help on the *muforum* Message Board, and do not attempt to learn a large amount of information at one time. If you study only for tests, it’s safe to say you will not do well in this course.

3.3 Tests

Tests are usually a combination of objective, short answer and problem-oriented questions. The subject-matter is primarily based on the reading and homework assignments. If you understand how to do the homework problems, you will do well on the tests. Some particularly difficult optional questions are sometimes included for extra credit. Example tests, quizzes, lecture notes, and additional exercises are online at <http://philosophy.lander.edu/logic/>. Test Review Worksheets are provided in the *Appendix* to this syllabus.

3.4 Quizzes

Quizzes consist three different kinds of work: (1) pre-announced and unannounced in-class quizzes or homework assignments, (2) the Web Practice Sheet, and (3) posts to the *muforum* Message Board.

In-class quizzes are short objective questions written in class on a specific logical concept or a specific type of logical problem. The quiz topic is often announced in advance of the quiz, and the topic has been thoroughly explored in a previous class. See

<http://philosophy.lander.edu/logic/quizzes.html>

for online example quizzes. Your quiz average is based on the sum of the following scores.

1. Quizzes and Homework (best eight grades from quizzes and homework)

2. Web Practice Sheet (required) (*cf.*, *Appendix E.1 Web Practice Worksheet*)
3. *mwforum* (required) Posts, comments, questions, or answers to question on the *mwforum* Discussion Message Board pertaining to the *subject of logic*. (This score is the sum of two points per post or comment per week for a maximum of one quiz of ten points. Posts concerning class policies, procedures, or other housekeeping matters are *not* included as part of quiz grade.)

3.5 Email Accounts

As a Lander student, you will need an email account, and you are encouraged to use your Lander email account which was assigned to you at registration. Information on your Lander email account is available at <http://www.lander.edu/its/students.html>.

Your email account information is listed under the "My Profile" section in Bearcat Web. Your default password should be your birthdate in as *yyyymmdd*, (*i.e.*, June 10, 1987 = 19870610).

The Office of Computing Services has set up a server whereby you can check your email on the following Web page: <http://mailbox.lander.edu> Instructions for configuring your mail client such as Microsoft®Outlook®or Outlook Express®are described at

http://www.lander.edu/its/students/student_email.html

If you need further help check ITS (Lander's Information Technology Services) in Genesis Hall or the Computer Labs in Jackson Library or Laura Lander Hall.

3.6 Email Etiquette

When you use email, please observe the following guidelines:

1. *Include a clear and precise subject-line.* When the subject box is left blank or when the subject is not specific enough (as in such subjects as "test," "reply" "problem," or "question"), the message is sometimes rejected by the proposed receiver's SPAM filter. When responding to a previous message, type your subject-line with a "Re:" before the subject given in the subject-line of the previous message. A simpler way to respond to a previous message is by clicking "Reply to All" in your email client; this click will automatically set the subject-line of your email so that your message is part of the appropriate message thread.
2. *Include your name and class and section* in the message body even though your address is in the "From" line in the message header.
3. *Do not use all capital letters*, as this is considered screaming or angry content.
4. A good summary of professional practice for email is provided by *Emailreplies.com* <http://www.emailreplies.com/> and is well worth study, especially for graduating seniors entering the marketplace.

3.7 *mwforum* Message Board

The *mwforum* Message Board are an important part of obtaining help without delay from your classmates and from your instructor. You are encouraged to post questions, problems, or answers on any topic relating to the course policies, procedures, or homework of our logic class. Your post is placed on the Philosophy Web in real time and can be immediately accessed by anyone in the world. The Logic Message Board is a good place to obtain a pre-evaluation of your logic homework or to seek answers to homework problems.

The purpose of the *mwforum* Message Board is for discussion of the daily class activities of our logic course: homework questions, homework answers, housekeeping matters, class procedures, assignments, test date, and class policies.

1. From the Logic Homepage, click on " *mwforum* Message Board" link.
2. From the *mwforum* Philosophy Forum page, click on the "Register" tab at the top of the page.
3. Fill in a username and your email address—taking care to remember the username you have chosen. Click on the "Register" button. In a few moments, a password will be sent to your email address. See Figure 1 for a screenshot.

Figure 1: How to Register for *mwforum* Message Boards

4. Enter your username and password here in your syllabus for additional assurance your username and password will not be lost:

Password: _____

Username: _____

5. Now when you go to the *mwforum* Message Boards, click on the "Register" button, and a login page will load. Log in with your username and password you have just received *via* email. Be sure to take note of your password—perhaps, by saving the email message or writing it in the margin of this syllabus. Next, click the "Login" button. See Figure 2.

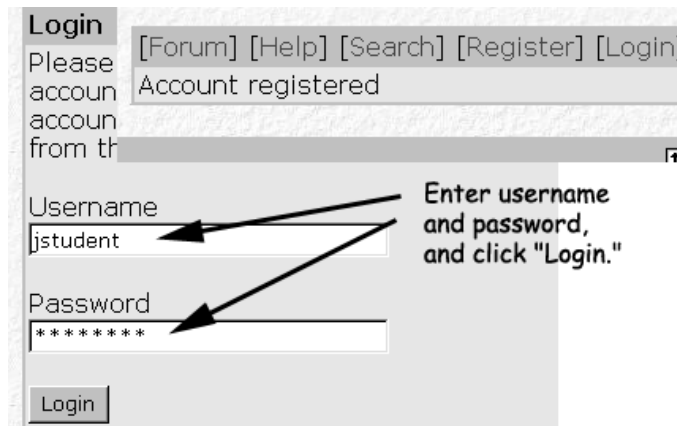


Figure 2: How to Login to *muforum* Message Boards

6. When the Philosophy Forum page loads, click on the *muforum* Message Board of interest.
7. **Lost Password:** If you lose or forget your password to the *muforum* Message Board, click on the *Login* link on the upper-right of the *muforum* Homepage. At the bottom of the Login page in a box labelled "Request Password,." Fill in your username in the username bar, and click the "Request" button. Your password will be sent to you *via* email. (If you have forgotten your username also and you have posted to the Message Board at least once in the past, then find your message on the Message Board and record your username.)
8. (You need to log in to the *muforum* Philosophy Forum in order to post messages, comments, or papers, but you need not log in just to read the messages.)

3.8 Profile Page

When you log in to the *muforum* Logic Message Board for the first time, you should enter personal information on your Profile page. To accomplish this log in and click on the "Options" link at the top of the page. On the Profile page, you can type in a more easily remembered password if you wish to do so. Also, be sure to enter your real name so that your posts can be credited. If you wish to hide your email address, check the appropriate box.

If you click "Options," you can find out how many times you have posted as well as find out about other personal data. To do so, click "Info" on the same line as your username on the Profile page. See the composite screenshot in Figure 3. Next, click on the "Posts" link for a list of all your messages. *Important:* Remember to scroll down to the bottom of the page and click "Change" or your changes will not be saved.

3.9 Philosophy Chat

The Philosophy Chat is available for student use at any time for any purpose (*e.g.*, you are welcome to use the chat for any group-project discussion in any class at Lander for the

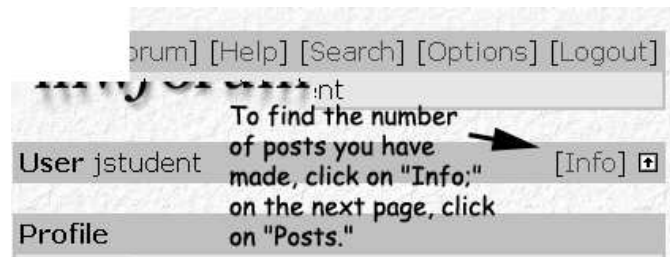


Figure 3: How to Find Your Messages

convenience for students both on and off campus). We will use the chat for online office hours on the evening before the day tests are given. The Chat program looks like this:

1. From the Philosophy Homepage click on the CHAT link in the lower-left corner of the page. See Figure 4.

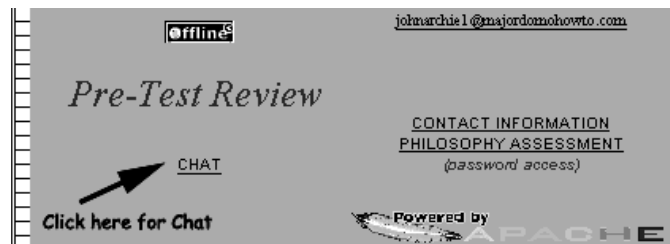


Figure 4: How to Open the Chat Program

2. When the logon page loads, enter your screen name and your real name. Click on the logon button. See Figure 5.

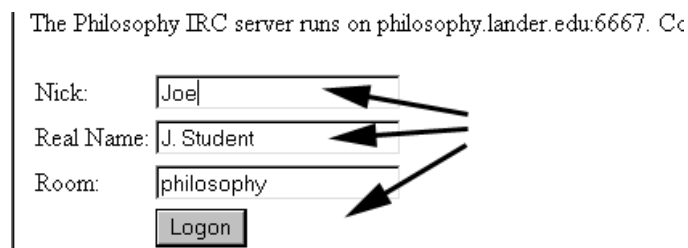


Figure 5: How to Logon to the Chat Program

3. When the Chat window loads, type your message in the bar at the bottom of the window, and hit the enter key, and your message can be read by all persons logged onto the chat. See Figure 5.

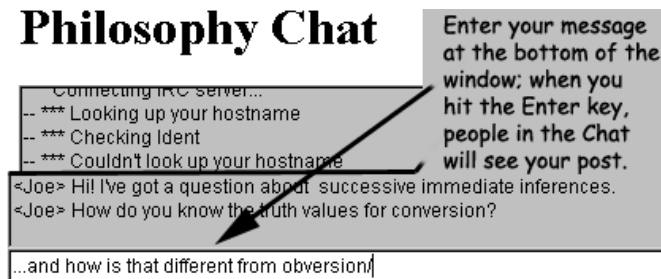


Figure 6: How to Enter Chat Messages

3.10 Grade Evaluation

Your final course grade is assigned according to your final average as described above in the subsection "Grades." The number of hours advised to study given below is usually an accurate guide to how well you will do in this class. If you study only for tests, your passing the course is doubtful. Many students assume they can do well in Logic without doing homework and without studying outside of class because they have been able to do so in other high school and college classes. Since these students have become habituated to passing courses without much effort, they are often alarmed to discover our Logic course is substantially different from what they have expected.

- A** (90 points or above) reflects approximately two hours study per class hour; a great deal of time, thought, and effort; and mastery of the subject.
- B** (80 or above but below 90 points) reflects approximately one and a half hours study per class hour; above average time, thought and effort; and superior achievement.
- C** (70 or above but below 80 points) reflects approximately one hour study per class hour, average time, thought, and effort; and average achievement.
- D** (60 or above but below 70 points) reflects cramming for examinations; minimum time, thought, and effort; below college level work; a less than adequate grasp of the principles of logic; and less than satisfactory achievement.
- FA** reflects attending fewer than 75% of class meetings.
- INC** can only be given in cases of sudden illness or emergency.

3.11 Grades Online

You may access your grades online at any time on the philosophy server (not Lander WebCT) with a username and password from this course.

Username: Your username for the course on the philosophy server is the first letter of your first name followed by your *complete* last name in lowercase letters and without spaces. For example "Lauren Bouchett Satterfield" would have the login username of "lsatterfield" with no limitation of number of letters (as is the case with some email programs and your WebCT username).

Password: Your password is your Lander L-number (without hyphen). Type a capital L followed by eight digits.

Where to Log In: From the Philosophy Homepage click on the yellow “Current Grades Online” hyperlink under the gray heading entitled “Class Grades” as in *Figure 7*. When the Grades Login page loads do the following:

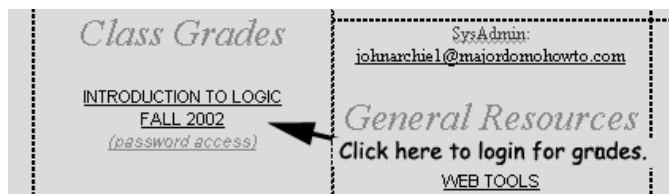


Figure 7: Where to Find Grades Online

1. Choose your class from the drop-down box. If you log in incorrectly, please be sure to re-select your class from the drop-down box because an incorrect login will re-set the class to a default philosophy course. See Figure 8.

Philosophy Grades Login

Class:
 Username:
 Password:

When logging in, be sure to reset the drop-down box to the class in which you are enrolled.

Figure 8: How to Login for Grades

2. Enter your username *exactly* as described above under the heading “username.”
3. The login process is case-sensitive—be sure to use lowercase letters for your username and a capital “L” in your L-number password. If you obtain the result of “bad login,” check to see if the Caps Lock key is on, or if you have confused the letter “l” with the number “1” or with the capital letter “I.” Also, the number “0” can be confused with the capital letter “O.”
4. Also, if you wish, enter your username and password here in the syllabus for additional assurance your username and password will not be lost:

Password: _____

Username: _____

5. The login process is case sensitive—be sure to match the case of the letters—capital or lower case. If you obtain the result of "bad login," check to see if the Caps Lock key is on, or you have confused the letter "l" with the number "1" or with a capital letter "I." Occasionally, the number "0" is can confused with the capital letter "O."

3.12 Your Job

Our course is not difficult if you keep up with the assigned work. When you seek help from me during office hours, the first items I will check are your posts to the *mwforum* Message Boards, your class notes, book notes, and homework problems—so that I can know where to begin. The claim that you didn't understand well enough to ask any questions, take any notes, or attempt any homework, will probably leave me with the impression you have not attempted studying. A good place to see how to study in our course is the "Notes on How to Study" on the Web at <http://philosophy.lander.edu/study.html>.

- Come to class prepared.
- Take notes in class.
- Take notes on the important points of the assigned reading.
- Do all homework problems.
- Ask questions in class, on the discussion list, and on the message board.
- Seek help at the first sign of difficulty from the *mwforum* Message Board, email instructor, or a visit during office hours.
- Make extensive use of the online lectures, sample problems, quizzes, and tests.

3.13 My Job

We will find that logic is quite essential in all fields of endeavor.

- I will attempt to create the conditions under which you can exercise your native curiosity.
- Class lectures will be varied, and interesting examples will be used.
- I will show practical applications for all the logical methods employed.
- I will provide handouts and Web-based instructions for additional problem-solving support.

If I do my job correctly, our logic course will be one of the *most valuable* in your university career.

3.14 Class Policies

The following policies are explicitly stated here because these policies help protect fairness of the course evaluation for the class as a whole. Some of these policies are generally assumed in most classes at Lander University.

Make-Up Policy: Quizzes cannot be made-up. No late papers or late posts are accepted for credit. No tests can be specifically made-up *per se* during the regular semester in this

course even though students have good reasons for missing class. Prior to the final exam tests cannot be made-up for any reason. If you miss one or more regularly scheduled tests during the semester *with an excused absence*, your grade for that test or tests is established by the grade achieved on a make-up test given at the time of the final examination period for this course. An excused absence is granted for emergency situations only, and a *written excuse* must be provided. For example, if you had to miss the first test on “The Structure of Arguments” because of a medical emergency, your grade on that test would be established by your grade achieved on the make-up test given at the time of the final examination dealing with “Test 1: The Structure of Arguments.”

Late Papers: No late papers are accepted in this course for any reason. **Plagiarism:** Students are expected to do their own work in this course. To use another writer’s or speaker’s ideas without giving credit by means of standard documentation is plagiarism. Cheating or academic dishonesty on tests or papers will be handled in accordance with the Academic Honor Code as presented in the *Lander University Student Handbook*.

Class Attendance: Students are expected to attend all classes; there are no “free cuts.” In the case of unavoidable absences, students are responsible for making up work done in class. In accordance with University policy, if a student attends less than 75% of the scheduled class meetings, the student will not receive credit for the course. As a matter of fact, this policy is expressly in the student’s interest, especially in this course, since attendance is essential for understanding and analyzing some of the complex argumentation discussed.

Important! Any student arriving late for class or leaving early from class will be counted absent from that class period. *Specifically, if a student takes a quiz and leaves before class is dismissed, the student will not receive credit for that quiz.* (This policy is important and in the student’s interest since class attendance at the heart of doing well in logic.)

Anyone missing class is responsible for obtaining the class notes and assignments from a classmate or from the Internet. Additionally book notes, quizzes, sample tests, and class lectures are online at <http://philosophy.lander.edu/logic/>. The *mwforum* Discussion List is also a good place to ask for information about assignments, subjects covered in class, or class policies—especially for someone hesitant to ask a classmate for assistance. In fact, posts to the *mwforum* Mailing List are the basis of a quiz grade. If you have questions about the subject-matter of logic, by all means make use of the *mwforum* Message Board. Finally, be sure to contact your instructor as soon as academic difficulties.

Learning Disabilities: If you have a physical or learning disability and you require special accommodations, be sure to contact Mr. Lafayette Harrison (Learning Center 345, telephone (864) 388-8814) and provide him with appropriate documentation. When Mr. Harrison is made aware of your disability, he will inform your instructors every semester unless you ask him in writing not to do so.

Closing of the University: If hazardous weather conditions or any other state of emergency necessitate University closing, the information will be available from the Lander automated information system (telephone (864) 388 8400)

A Truth, Validity, and Soundness

A.1 Definitions

Argument: any group of propositions of which one is claimed to follow logically from the others.

Inference: the *reasoning process* by which a logical relation such as entailment is perceived.

Entailment: a relation between or among propositions such that the truth of one proposition is determined by the truth of another proposition or propositions and such that this determination is a function solely of the meanings of the propositions concerned.

Valid Argument: a deductive argument whose conclusion follows necessarily from its premiss or premisses. (Usually an inference is said to be valid if it is permitted by the laws of some logic.)

Sound Argument: a valid deductive argument which has true premisses. (Obviously, the conclusion is true as well.)

A.2 Rules

1. A deductive argument is valid only if its conclusion follows necessarily from its premisses.
2. The fact that a deductive argument is valid does not imply that any of the propositions in the argument are true.
3. If the premisses of a valid deductive argument are true, then the conclusion must be true.
4. In an invalid argument any combination of truth values for the various propositions may occur.
5. An argument is sound if and only if it is valid and has true premisses.

A.3 Problems and Examples

The following examples serve to show the possible combinations of truth values in *valid* categorical syllogisms.

	Case 1	Case 2	Case 3	Case 4
Premises	T	F	T	F
Conclusion	T	F	logically impossible to be false	F

Examples:

Case 1A $\frac{\begin{array}{l} (T) \text{ All cattle are mammals.} \\ (T) \text{ All Angus are cattle.} \end{array}}{(T) \text{ All angus are mammals.}}$

Case 2A $\frac{\begin{array}{l} \text{(F) All plants are animals.} \\ \text{(F) All deer are plants.} \end{array}}{\text{(T) All deer are animals.}}$

Case 3A An example is logically impossible to construct. (*If a valid argument could have true premisses and a false conclusion, then logic could not be used to extend our knowledge.*)

Case 4A $\frac{\begin{array}{l} \text{(F) No pens are markers.} \\ \text{(F) All pencils are pens.} \end{array}}{\text{(F) No pencils are markers.}}$

The following examples serve to show the possible combinations of truth values in *invalid* categorical syllogisms. Note that *every* combination of truth values is possible in invalid arguments.

	Case 1	Case 2	Case 3	Case 4
premisses	T	F	T	F
conclusion	T	T	F	F

Examples:

Case 1B $\frac{\begin{array}{l} \text{(T) Some states are tyrannies.} \\ \text{(T) All dictatorship are tyrannies.} \end{array}}{\text{(T) Some dictatorships are states.}}$

Case 2B $\frac{\begin{array}{l} \text{(F) No sparrows are birds.} \\ \text{(F) No flying creatures are birds.} \end{array}}{\text{(T) Some flying creatures are sparrows.}}$

Case 3B $\frac{\begin{array}{l} \text{(T) All acids are chemicals.} \\ \text{(T) Some carbon compounds are not acids.} \end{array}}{\text{(F) Some carbon compounds are not chemicals.}}$

Case 4B $\frac{\begin{array}{l} \text{(F) All essays are books.} \\ \text{(F) No tomes are books.} \end{array}}{\text{(F) All tomes are essays.}}$

All of the following statements are true. Study each carefully. Refer to the cases mentioned in order to see how each statement is true.

1. A sound deductive argument is a deductive argument which is valid and whose premiss or premisses are true. (*Cf.*, Case 1A above.)

2. It is possible for a deductive argument to be both valid and unsound. (*Cf.*, Cases 2A and 3A above.)
3. If a deductive argument is sound, it cannot be invalid. (*Cf.*, Cases 1A and 3A above.)
4. If the premisses of a deductive argument are true, then the argument can be valid or invalid. (*Cf.*, Cases 1A, 1B, and 3B above.)
5. If the conclusion of a deductive argument is true, then the premisses can be true or false. (*Cf.*, Cases 1A, 2A, 1B, and 2B above.)
6. If a deductive argument is sound, then its conclusion must be true. (*Cf.*, Cases 1A and 3A above.)
7. If the premisses of a deductive argument are true, then the conclusion can be true or false. (*Cf.*, Cases 2A, 4A, 2B, and 4B above.)
8. If a deductive argument has a false premiss, then the argument must be unsound. (*Cf.*, Cases 2A, 4A, 2B, and 4B above.)
9. If a deductive argument is valid, then its conclusion can be true or it can be false. (*Cf.*, Cases 1A, 2A, and 4A above.)
10. If every proposition in a deductive argument is true, then the argument can be either sound or unsound. (*Cf.*, Cases 1A, and 1B above.)

See http://philosophy.lander.edu/logic/tvs_quiz.html for more examples of true-false questions on the topic of "Truth, Validity, and Soundness."

Also, see <http://philosophy.lander.edu/logic/tvs.html> for lecture notes on this topic.

B Summary of Informal Fallacies

See http://philosophy.lander.edu/logic/fallacy_topics.html for detailed explanations and examples of these informal fallacies.

Symbol	Meaning
L	Locutor, speaker
s	statements, propositions
x, y	events, circumstances

1. *Ad ignorantiam* (argument from ignorance)

$$\frac{p \text{ is unproved.}}{\text{Not } p \text{ is true.}} \quad \text{or} \quad \frac{\text{Not } p \text{ is unproved.}}{p \text{ is true.}}$$

E.g., There is absolutely no evidence to suggest that you won't do well in logic; thus, we may conclude that you will do well.

or

E.g., There is no evidence to suggest that you will do well in logic; thus, we may safely conclude that you will not do well.

2. *Ad verecundiam* (argument from authority)

$$\frac{\text{Authority on } x, L, \text{ says } p \text{ is true.}}{p \text{ is outside of the scope of subject } x} \quad \frac{p \text{ is true.}}$$

E.g., H.L.A. Jenkins, the noted international rose expert, has publically stated that logic is essential to a life of excellence; consequently, this view must be so.

3. *Ad hominem* (argument against the person)

$$\frac{L \text{ says } p.}{L \text{ is a bad (good) person.}} \quad \text{or} \quad \frac{L \text{ says } p.}{L \text{ comes from bad (good) } x, y.} \quad \frac{p \text{ is false (true).}}{p \text{ is false (true).}}$$

E.g., You can't believe what Professor Smith says about teacher's salaries because, as a teacher himself, naturally, he would be in favor of more money.

or

E.g., You can't believe what Professor Smith says about teacher's salaries because he comes from a family of mostly teachers; naturally, he would be in favor of a higher salary.

4. *Ad populum* (argument from popular appeal)

$$\frac{\text{Snob Appeal}}{\text{People in the elite believe } p} \quad \text{or} \quad \frac{\text{Bandwagon}}{\text{The majority believe } p} \quad \frac{p \text{ is true.}}{p \text{ is true.}}$$

E.g., **Snob Appeal**: You have chosen the good life and a life of distinction, so now you need Four Roses Furniture to show that you have arrived.

or

E.g., **Bandwagon**: This logic course must be a good course because most people believe it is.

5. *Ad misericordiam* (argument from pity or misery)

$$\frac{L \text{ says } p. \text{ } L \text{ deserves pity because of } x, y.}{p \text{ is true.}}$$

E.g., Mary will be broken-hearted if she does not get an *A* in logic.

6. *Ad baculum* (argument from force)

$$\frac{L \text{ says accept } p \text{ or event } x \text{ will happen.} \\ x \text{ is bad (or good).}}{p \text{ should be accepted as true.}}$$

E.g., I'm sure you will agree to the proposal before your committee because your future with this company might end if you don't.

7. **Complex Question**

$$\frac{\text{How (or why) is } p \text{ true?}}{p \text{ is true.}}$$

E.g., When are you going to stop fooling around and begin to take your college education seriously? You will only benefit yourself if you start studying effectively.

8. **False Cause**

$$\frac{\textit{non causa pro causa} \\ x \text{ is related to } y. \\ x \text{ caused } y.}{\textit{post hoc ergo propter hoc} \\ x \text{ is followed by } y. \\ x \text{ caused } y.}}{\textit{or}}$$

E.g., Napoleon became a great emperor since he was so short.

or

E.g., Since Jack sat in the back of the class and made an *A* on the last test, maybe I should sit there too.

9. *Petitio Principii* (circular argument; begging the question)

$$\frac{p \text{ is true.} \\ q \text{ is true.} \quad \textit{or} \\ r \text{ is true.}}{p \text{ is true}} \quad \frac{p \text{ is true.}}{\text{It is not the case that not-}p \text{ is true.}}$$

E.g., Logic is an essential course because it is required at many colleges. It is required at those colleges because the ability to reason is vital and because logic is so essential.

10. **Accident** (*ceteris paribus* exceptions)

$$\frac{\text{Rule or general statement } p \text{ is true in circumstance } x.}{p \text{ is true in circumstance } y.}$$

E.g., Logic courses fulfill the social science electives at most other universities, so our logic course here fulfills the same requirement.

11. **Converse Accident** (hasty generalization; glittering generality)

$$\frac{p \text{ is true in circumstance } x.}{p \text{ is true in all or most circumstances.}}$$

E.g., Not one person spoke to me on the way to the library; Lander University is not as friendly as I was led to believe.

12. *Ignoratio elenchi* (*non sequitur*; irrelevant conclusion)

Since informal fallacies cannot be precisely categorized, there is no complete standard classification of the ways people error. If a fallacy does not clearly fit into one of the common fallacies described above, it is to be identified in this “catch-all” category.

C The Square of Opposition

The following diagram is a convenient summary of the Square of Opposition:

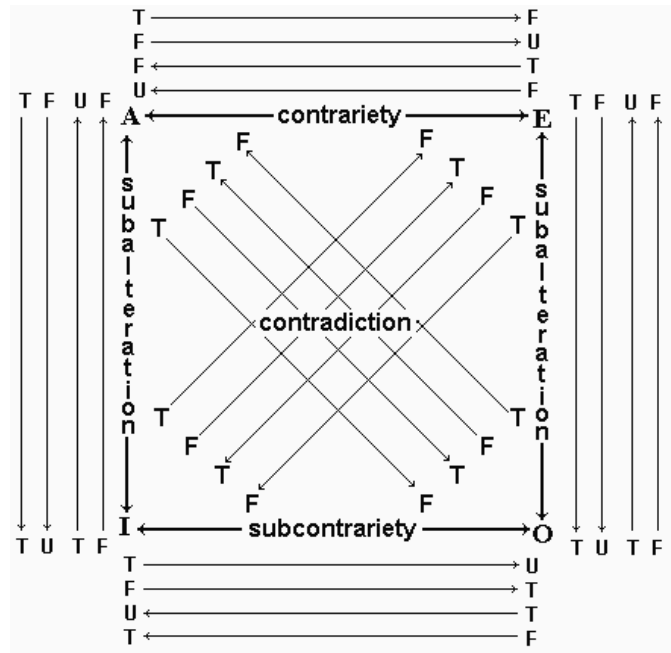


Figure 9: The Square of Opposition

D Test Review Sheets

D.1 Test 1: The Structure of Arguments

Important Concepts: be able to characterize and give examples.

philosophy	logic
statement or proposition	sentence
premiss	conclusion
argument	simple argument
complex argument	premiss indicator
conclusion indicator	inference
entailment	argument
explanation	conditional statement
imperative	hypothetical
deduction	induction
truth	validity
soundness	

Important Skills: be able to do the following kinds of problems.

1. Identify premiss and conclusion indicators
2. Diagram simple and complex arguments
3. Explicate the differences among truth, validity, and soundness

Important Distinctions: Be able to list differences and give examples.

1. sentence and statement
2. argument and explanation
3. deduction and induction
4. truth, validity, and soundness

D.2 Test 2: Language and Informal Fallacies

Important Concepts: be able to characterize and give examples.

the forms and functions of language	the types of sentences
informative use	expressive use
directive use	factual significance
emotive significance	disagreement in belief
disagreement in attitude	varieties of disagreements
methods of dispute resolution	slanted language
emotively neutral language	phatic language
performative utterances	<i>ad ignorantiam</i>
<i>ad verecundiam</i>	<i>ad hominem</i>
<i>ad misericordiam</i>	<i>ad baculum</i>
<i>ignoratio elenchi</i>	complex question
false cause	<i>petitio principii</i>
accident	converse accident

Important Skills: be able to do the following kinds of problems.

1. analyze and resolve disagreements in belief and attitude
2. distinguish among the forms and functions of language
3. identify and analyze informal fallacies

Important Distinctions: be able to list differences and give examples.

1. declarative, interrogative, exclamatory, and imperative sentences
2. belief and attitude
3. emotive and neutral language
4. accident and converse accident
5. fallacies of relevance and presumption

D.3 Test 3: Categorical Propositions

Important Concepts: be able to characterize and give examples.

quantity, quality, and distribution	universal affirmative statement
universal negative statement	particular affirmative statement
particular negative statement	sneaky <i>O</i> statement
contrariety	subcontrariety
contradiction	subalternation (implication)
conversion	obversion
contraposition	

Important Skills: be able to do the following kinds of problems.

1. square of opposition—immediate inferences
2. further immediate inferences
3. successive immediate inferences
4. Venn diagrams of statements

Important Distinctions: be able to list differences and give examples.

1. *A*, *E*, *I*, *O* statements
2. quantity, quality, and distribution

D.4 Test 4: Categorical Syllogisms

Important Concepts: be able to characterize and give examples.

syllogism	major term
minor term	middle term
mood	figure
standard form	major premiss
minor premiss	figure
logical analogy	equivocation
four term fallacy	undistributed middle fallacy
illicit minor	illicit major
fallacy of exclusive premisses	existential fallacy
fallacy of drawing an affirmative conclusion from a negative premiss	

Important Skills: be able to do the following kinds of problems.

1. refute an argument by means of devising a logical analogy
2. evaluate syllogisms by means of Venn diagrams
3. evaluate syllogisms by means of syllogistic fallacies
4. evaluate arguments in ordinary language

Important Distinctions: be able to list differences and give examples.

1. major and minor premiss
2. illicit major and illicit minor
3. equivocation and four term fallacy

E Logic Worksheets

Suggestion: Take your time and read each step carefully; confusion can easily ensue by skipping or skimming instructions. Be sure to refer to the step-by-step instructions under “Class Requirements” above. You may have other student help you with this quiz, but all of the recorded information must be done by you on a computer.

E.1 Web Practice Worksheet

Question	Response
1. Open your Internet browser (<i>e.g.</i> , Internet Explorer®, Firefox®). Enter the address: http://philosophy.lander.edu/ in the Address or Location Bar. (Note that there is no <i>www</i> in the address.) This page is the Homepage for many philosophy courses. What is the title of the page as shown in the title bar at the <i>very top</i> of the screen? (The page title is usually followed by the name of the browser and/or preceded by the browser’s icon.)	
2. Click on the link OTHER SERVICES at the top of the page. When the Other Services page loads, click on the link “Websites: jsaetti Logic Toolbox.” Write out the quotation by Albert Einstein located at the top of that page.	
3. Go back to the Philosophy Homepage and click on the Homepage for this class. When the Logic Homepage loads, click on the link “Schedule Spring 2007” under Logic Resources. When is the date of the final examination for this class?	
4. Return to the Logic Homepage. Click on the link “Logic FAQ.” Does Phil 103 fulfill the Humanities General Elective Requirement?	
5. Click on the red “p.l.e” icon at the top left of the page and so return to the Philosophy Homepage. Under the gray heading “Resources,” click on the “Notes on How to Study links. When deciding when to study for rote memorizing, which is to be preferred” Studying during an hour session or studying during three 15 minute sessions?	

Question	Response
<p>6. Using the instructions from the <i>mwforum</i> Message Board section under "Course Requirements" in this syllabus, register and login to the Philosophy Forum i mwforum i Message Board for this class. Post a message on the Board for this class by clicking the blue hyperlinks in the following order: Philosophy 103: Introduction to Logic [DATE] → Post Topic. In the Subject bar, enter an appropriate title and as a message tell what feature of the class you are most interested in learning about or what you would like help on. If you would like to be notified when a comment to your post is made, click the box next to the message "Send email notifications of replies." Finally click the button "Post" at the bottom of the page. Next click on the blue hyperlink corresponding to your username in the black "Poster" column at the top of the Topic Table. When your Profile Page loads, record on this quiz the date and time you registered and your Last IP number. Important: If this question is missed, a grade of "0" will be assigned for this quiz.</p>	
<p>7. While in the <i>mwforum</i> program, click on the blue hyperlink "Options" near the upper right-hand corner of the page. If you have not already done so, fill in the "Profile" section of this page. Change your password to one that is easily remembered, if you have not already done so. Be sure to click the "Change" button at the very bottom of this page. What is the signature you used on this page?</p>	
<p>8. Find the title for the first lecture of this course. What is the title of the lecture as it appears in the title bar at the <i>very top</i> of the screen (not the title as it appears in the main frame of the browser itself)?</p>	

Question	Response
9. Find the title for the first sample quiz in this course. What is the title as it appears in the title bar at the <i>very top</i> of the screen (not the title as it appears in the main frame of the browser itself)?	
10. From the Homepage of your philosophy course, click on the "Chat" link. Enter your "Nick" (your screen name or nickname), your real name, and hit the "Enter" key. At the bottom of the window is an unnamed message bar. Type in "Hi." What is the name that appears in the Chat Window with the message you just typed in? If you get no response, explain what happened after you hit the enter key.	
11. Find the philosophy search engine on the Philosophy Homepage. Search for the term " <i>psychological egoism</i> ." What is the definition of this term given by the first page that is listed in the "Lander University Philosophy Search" engine?	
12. Return to the Homepage for Logic. Find the title for the first sample test in this course. What is the title as it appears in the title bar at the <i>very top</i> of the screen (not the title as it appears in the main frame of the browser itself)?	

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E.2 Diagramming Arguments

Directions: First study the passages below and state whether or not each is an argument. If it is not, state why not. Second, if the passage is an argument, state whether it is inductive or deductive. Third, if the passage is an argument, diagram its structure using the numbers provided.

1. (1) Cranberry juice helps kidney infections (2) because persons who drink cranberry juice often do not get many kidney infections.

2. (1) No one has directly observed a chemical bond, (2) so scientists who try to envision such bonds must rely on experimental clues and their own imaginations.

3. (1) Be careful who you pretend to be for (2) that you will surely become.

4. (1) If we are open to our experience, then (2) doing what "feels right" proves to be a competent and trustworthy guide to behavior which is truly satisfying.

5 (1) One of the reasons why Planet X may not have been found in the past is (2) previous surveys concentrated on the Northern Hemisphere while (3) recent calculations show that Planet X, if it exists, is more likely to be found in the Southern Hemisphere.

6. (1) Some students absent today are unprepared for this test, since (2) the law of averages dictates that only 10% of students are absent due to illness, and (3) more than 10% are absent.

7.(1) Joe has creased earlobes and a depressed sternum and (2) these characteristics have been associated with heart attacks, so (3) Joe probably will have heart problems in the future.

8. (1) If we concentrate on the response we must make when we see a light, we react faster than if we fix our attention on the light itself. (2) Thus, our attitude or expectation influences the speed of our reactions.

9. (1) Because the apparent daily movement which is common to both the planets and the fixed stars is seen to travel from the east to the west, but (2) the far slower single movements of the single planets travel in the opposite direction from west to east, (3) it is therefore certain that these movements cannot depend on the common movement of the world but should be assigned to the planets themselves.

10. (1) If students were environmentally aware, they would object to the endangering of any species of animal. (2) The well-known Greenwood white squirrel has become endangered as (3) it has disappeared from the Lander Campus (4) because the building of the library destroyed its native habitat. (5) No Lander students objected. (6) Thus, Lander students are not environmentally aware. (Hint: *c.f.*, *modus tollens*)

E.3 Exercises on Emotive Significance

Directions: Restate each of the following emotively neutral descriptions of personality by (1) positively slanted descriptions and (2) negatively slanted descriptions in the spaces below. If you want to consult a thesaurus, try the online *Meriam-Webster Collegiate Thesaurus* at

<http://www.m-w.com/home.htm>

or *Roget's Thesaurus* at

http://humanities.uchicago.edu/forms_unrest/ROGET.html

or

<http://www.bartleby.com/62/>.

+	+	+
O talkative	O shy	O intelligent
-	-	-

+	+	+
O cautious	O friendly	O idealistic
-	-	-

+	+	+
O practical	O untidy	O thoughtful
-	-	-

E.4 Varieties of Disagreements

Directions: In each of the following disputes (1) state the fact at issue, (2) identify the emotive significance as being positive, neutral, or negative, (3) identify the kinds of agreement or disagreement present, and (4) tell how the dispute might best be resolved.

1. John: Mr. Smith is a tenacious bureaucrat who does not have the tact to know when to give up.

Mary: No, Mr. Smith is an enthusiastic public servant who always goes the extra mile.

Fact at Issue:

John's emotive significance:

Mary's emotive significance:

Belief:

Attitude:

How best resolved:

2. John In the last election Mr. Smith failed to receive the number of votes he predicted—he fell short.

Mary: Well, Mr. Smith thought he would receive 56% of the vote and he came within 1%.

Fact at Issue:

John's emotive significance:

Mary's emotive significance:

Belief:

Attitude:

How best resolved:

3. John: Like most politicians, he is a braggart and is a dishonest man.

Mary: In my opinion he is a modest gentleman and is incorruptibly honest.

Fact at Issue:

John's emotive significance:

Mary's emotive significance:

Belief;

Attitude:

How best resolved:

F Selected Bibliography

The following works are recommended for finding research sources for your logic paper. They are all available either at the Reserve Desk or in the stacks of the Larry A. Jackson Library.

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