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Philosophy 173 Logic and Critical Thinking Section
3 Credit Hours
Fall 2016
Distance Learning
Office Hours: By Appointment

Welcome to PHIL 173: Logic and Critical Thinking! I'm Dr. Davis Kuykendall, your instructor. The course will be delivered entirely through the Blackboard website. The course is asynchronous, which means there is no set time you must log in for "live" sessions. That doesn't mean that you won't spend a lot of time on this class each week. I recommend spending at least 6-9 hours per week on this course if you want to do well. The best way to reach me is via email at dkuykend@gmu.edu. I usually respond to emails within 24 hours, except for weekends. I will also have a special discussion board section that where students can post questions with answers that are beneficial to the whole class.

Course Overview:
This course will cover the essentials of logic and critical thinking. This includes, but is not limited to: truth-functional logic, sentential/propositional logic, an introduction to predicate logic, and other basic critical thinking skills, such as spotting logical fallacies in various contexts (editorials, courtroom briefs, political speeches, arguments with significant others, coworkers, family members and friends, and so on).

Blackboard Login Instructions
Access to MyMason and GMU email are required to participate successfully in this course. Please make sure to update your computer and prepare yourself to begin using the online format BEFORE the first day of class. Check the IT Support Center website. Navigate to the Student Support page for help and information about Blackboard. In the menu bar to the left you will find all the tools you need to become familiar with for this course. Take time to learn each. Make sure you run a system check a few days before class. Become familiar with the attributes of Blackboard and online learning.

Technical Help
If you have difficulty with accessing Blackboard, please contact the ITU Support Center at 703.993.8870 or support@gmu.edu
If you have trouble with using the features in Blackboard, email courses@gmu.edu

E-Reserve Instructions
Not applicable

Technology Requirements
Hardware: You will need access to a Windows or Macintosh computer with at least 2 GB of RAM and access to a fast and reliable broadband internet connection (e.g., cable, DSL). A larger screen is recommended for better visibility of course material. You will need speakers or

headphones to hear recorded content and a headset with a microphone is recommended for the best experience. For the amount of Hard Disk Space required taking a distance education course, consider and allow for:

1. the storage amount needed to install any additional software and
2. space to store work that you will do for the course.

If you consider the purchase of a new computer, please go to Technology Buying Guide http://itservices.gmu.edu/services/view-service.cfm?customel_dataPageID_4609=6233to see recommendations.

Software: Many courses use Blackboard as the learning management system. You will need a browser and operating system that are listed compatible or certified with the Blackboard version available on the myMason Portal. See supported browsers and operating systems. Log in to myMason to access your registered courses. Some courses may use other learning management systems. Check the syllabus or contact the instructor for details. Online courses typically use Acrobat Reader, Flash, Java, and Windows Media Player, QuickTime and/or Real Media Player. Your computer should be capable of running current versions of those applications. Also, make sure your computer is protected from viruses by downloading the latest version of Symantec Endpoint Protection/Anti-Virus software for free here.

Students owning Macs or Linux should be aware that some courses may use software that only runs on Windows. You can set up a Mac computer with Boot Camp or virtualization software so Windows will also run on it. Watch this video about using Windows on a Mac. Computers running Linux can also be configured with virtualization software or configured to dual boot with Windows.

Note: If you are using an employer-provided computer or corporate office for class attendance, please verify with your systems administrators that you will be able to install the necessary applications and that system or corporate firewalls do not block access to any sites or media types.

Course-specific Hardware/Software

Check the syllabus for your course or contact the instructor prior to the start of the course to find out about specific technical requirements for your class. Hardware or software required for your course or program may be available for purchase at Patriot Computers (the University's computer store that offers educational discounts and special deals).

Required Text:

Understanding Symbolic Logic (5th Edition) by Virginia Klenk, (Pearson).
ISBN-10: 0132051524
ISBN-13: 978-0132051521

Course Learning Outcomes

At the completion of the course, the student will have developed an understanding of the role logic plays in the reasoning process. Specifically, the student should be able to:

1. Define such terms as 'statement,' 'argument,' 'premise,' 'conclusion,' 'fallacy,' 'valid,' 'sound,' 'truth-functional,' etc., which are common in the study of logic.
2. Distinguish between induction and deduction, validity and invalidity, formal and informal fallacies, truth-functional, propositional and predicate logic.
3. Identify and discuss several of the more common informal fallacies

4. Discuss the various relationships among categorical propositions
5. Be familiar with the symbols for conjunction, negation, disjunction, material implication, and material equivalence as well as how to symbolize quantifiers and predicates; be able to use these symbols in basic truth functional operations; and learn how to symbolize English sentences.

Requirements:

- Students are required to take some exams using Blackboard's Respondus web browser. Quizzes can be taken on any browser. Instructions on how to download and install the Respondus web browser can be found at the following link: https://coursessupport.gmu.edu/Students/index.cfm?audiencename=Students&categoryname=Bb%20Assessments&datname=Respondus%20LockDown%20Browser

Quizzes

- There will be one to two quizzes per week, based on the readings and video lectures. Each quiz is *usually* worth between ten and twenty points.
- All quizzes are found in Blackboard in the appropriate weekly folder.
- The quizzes will usually be multiple-choice but there may be some short answers.
- **Quizzes must be completed by 11:59pm on Sunday of each week**. This course operates on a Monday-Sunday week. Each quiz will be available to take by Monday of each week but it is strongly recommended that you do all the readings, watch all the videos, work out the practice exercises at the end of each chapter in the book as well as the practice quizzes on Blackboard before taking a quiz.

Exams

- There will be three exams this semester. Each exam is worth 100 points. 3 x 100 = 300 points.
- All exams will be found in Blackboard in the appropriate weekly folder.
- The exams will be multiple-choice but there may be some short answers.
- I will post a study guide for each exam one week before the exam is available on Blackboard.
- **Exams (with the exception of the Final Exam) must be completed by 11:59pm on Sunday of the week they are offered**. This course operates on a Monday-Sunday week. Each exam will be available to take by Monday of the week they are due.

Discussions

- During weeks when the content covered lends itself to further discussion, there will be a discussion board assignment.
- Each discussion board assignment will be worth between 10-20 points, depending on the assignment.
- Additionally, when appropriate, students will be expected to respond to other student's discussion posts. These replies will be worth between 5-10 points, depending on the assignment.

PLEASE NOTE THAT STUDENTS WILL BE RESPONSIBLE FOR READING CAREFULLY EACH EMAIL I SEND TO THE CLASS. I WILL NOT ACCEPT "I DIDN'T READ THE EMAIL" AS AN EXCUSE. I will also post the contents of each email I send to the class in the announcements section on Blackboard. This ensures two methods of content delivery. So once again, I will not accept any excuses for work missed due to negligence on the student's part to read emails or announcements.

PLEASE NOTE FURTHER THAT STUDENTS ARE RESPONSIBLE FOR FINDING A COMPUTER WITH A WORKING INTERNET CONNECTION THAT WORKS WITH BLACKBOARD. There are multiple computers on campus in various labs, both PC and Mac. Every coffee shop has free wifi these days. Public libraries have computers that are free to use. Your roommates, siblings, and parents also have computers you could borrow. The point is, YOU ARE RESPONSIBLE for finding a working computer and internet connection to turn in assignments on time. Make sure you have a working computer/connection well in advance, so you don't find yourself trying to take a quiz 20 minutes before its due and discovering that the internet connection is out or the computer is acting funny. I WILL NOT ACCEPT 'THE INTERNET IS BROKEN' OR 'MY COMPUTER IS BROKEN' AS AN EXCUSE.

How This Online Course Works

- I have organized this course by week, where each week runs from Monday to Sunday. Each week gets its own folder on Blackboard. Each week's folder contains (i) video lectures to watch for the week; (ii) practice exercises when applicable; (iii) lecture notes to accompany the video lectures and readings; (iv) Discussion board questions when applicable and (v) quizzes for the week with the exception of test weeks, in which case (vi) a link to the test for that week.
- Each week will be available by Sunday evening of the previous week. For example, Week 3, which runs from Monday September 14 - Sunday September 20, will be available on the evening of Sunday September 13.
- Once you access the folder for that week (e.g., week 2) I may have several paragraphs of information at the top of the page. Below that will be several folders: (i) a folder containing the video lectures for the week; (ii) a folder containing practice quizzes; and (iii) a folder containing additional instructional materials (usually the PowerPoint slides accompanying the video lectures). Below the folders will be links to each week's quizzes or exams. So each week's folder is organized thus:
    - Several paragraphs of information for the week (not every week).
    - Videos: The videos are the online equivalent of classroom lectures. Each video will vary in length from 15 minutes to 50 minutes, depending on the topic. There will be quiz and test questions based on content that is only available from the videos, so make sure you watch them. There will not be a video for every assigned reading. Some readings don't need one—the content doesn't need any further explaining. Other readings may require two videos.
    - Practice Quizzes: Some weeks there will be one or more practice quizzes that you are highly encouraged to take. They are similar in structure to the quizzes, except that you won't get a grade on the practice quizzes. Students may take the practice quizzes as many times as they like. The practice quizzes provide exercises in addition to the ones at the end of each unit in the textbook and detailed explanations of why wrong answers are wrong and right answers are right.
    - Notes: I include the PowerPoint slides for my video lectures for each week. From time to time there will be additional notes that students are encouraged to read.
    - Quizzes or Test: Most of the quizzes and tests will be multiple choice with some short written answers that are based on that weeks readings and videos (for quizzes) or the previous few weeks (for tests). I will have a study guide for each

test available at least one week in advance, which I will notify students of via email.

- Grades are available in Blackboard, on the bottom left corner of the page, by clicking "My Grades". Note that some grades will not be immediately available, such as short written assignments or quizzes or tests that have short answer questions.
- If you are not familiar with Blackboard, I suggest you click the link "Student Help" at the bottom left corner of the page once you access the course website for Blackboard. Read that carefully if you are having a technical issue **before** contacting me, for there's a good chance that the answer is there.
- Again, READ THE STUDENT HELP PAGE ON BLACKBOARD BEFORE CONTACTING THE INSTRUCTOR ABOUT TECHNICAL ISSUES.

Grading Scale

- As indicated above, there are three types of assignments given in this course: Quizzes, exams, and discussion board assignments. Quizzes are worth between 10-20 points, Exams are worth 100 points, and Discussion board assignments (including replies) are worth between 5-20 points.
- Around midterms and again near the end of the semester, I'll email students with information on how to calculate their final grade based on the total number of points students have earned out of the total number of points students will have been expected to earn. This course adopts a ten point grading scale:

97-100 A+	80-83 B-	64-66 D
94-96 A	77-79 C+	60-63 D-
90-93 A-	74-76 C	59 or below F
87-89 B+	70-73 C-	
84-86 B	67-69 D+	

Course Policies

- As a rule, I only give students extensions for quizzes and exams in the direst of circumstances, such as a death or a medical emergency. I also only allow makeup quizzes and exams in such dire situations. If you find yourself in a dire situation and are absolutely sure that because of the situation you won't be able to finish a quiz or exam on time, contact me. If you missed a quiz or exam because of such a dire circumstance, also contact me.
- I will not give students an extension for quizzes they missed because of non-dire situations. I also do not allow students to makeup quizzes they missed because of non-dire situations.
- I do allow make-up exams but with very heavy grade penalties. I deduct 20 points (that's 20% of the exam grade) for every day a student is late in taking it. Blackboard will automatically lock students out of the exam if they miss the due date so students must contact me before they can makeup the exam.

How To Do Well In This Course

Logic does not require the brainpower that rocket science needs but that doesn't mean that logic requires no effort whatsoever. Anyone cannot only learn but also master logic and critical thinking. However, this will require not only effort on your part, but also *strategic* effort. Here

then are some tips on how to do well in this course:

First, I recommend that you do all of the following each week if you want to do well on the quizzes and exams: Read the chapter, watch the videos, do the practice exercises in the book, do any additional practice exercises I may offer on Blackboard, and take the quiz or exam.

Second, I recommend that you do all of the above in the following order: FIRST, read the chapter. SECOND, watch the video lectures. THIRD, complete the practice exercises at the end of each unit in the book. Check the back of the book for answers on the starred questions *after* you have completed the exercises. From time to time I'll provide answers and explanations for the exercises, which do not have answers in the back of the book. FOURTH, complete the practice exercises on Blackboard when applicable. FIFTH and finally take the quiz.

Some folks might be able to skip a step or two and still do well on the quiz. Most of those folks are enrolled at MIT. For the rest of us mortals, it's better to do the first four steps before attempting to take a quiz or exam.

A third important tip: Spread out steps one through five. If you try to cram 1-5 in one day, you have little chance of doing well on the quizzes. I'd suggest spreading out steps 1-5 over *at least* three days, but five days or *more* is better. It gives your brain time to absorb the information. Take time off between the video lectures and practice exercises in the book, and take time off between practice exercises in the book and online. Get some sleep—it actually helps you recall and understand information better. In this course you are learning a *skill*. Sleep helps your brain in developing that skill, as with any skill.

I've designed this course in such a way that lends itself to absorbing info the way I suggest. That's why I don't give students the option of trying to cram the course in the last two weeks of the semester. Instead we go week to week. My goal is for you to learn logic, not just get a passing grade. You can't learn logic unless you take some time to learn it.

If you come to me for help, the very first thing I'll ask you about is your study habits. If you tell me that you try to do a whole week's work on a Saturday, I'll tell you to try my method and then come back and see me. There's a strong likelihood that you will see noticeable improvement.

One final point: Even if you try your best, you are not guaranteed an A. That's life. Some people have a harder time learning logic than others. *You should still take this course*. Your thinking will improve. This in turn will help you in other classes that require critical thinking skills (most college courses). It will help you in life. Most importantly, it will help you be a better human. The philosopher and logician Aristotle famously defined humans as rational animals. We eat, breathe, and sleep just as squirrels, dogs, and elephants eat, breathe, and sleep. Unlike squirrels, dogs, and elephants, however, we can reflect on the fact that we are eating, breathing, sleeping AND on the fact that we reflect. That's the rationality part of the definition. By learning logic, you'll improve your rational thinking skills— the ability to reflect on various issues. Hence, you'll become a better human. Isn't it swell that you can achieve all of this at George Mason University?

University Policies and Information

Academic Integrity

Students must be responsible for their own work, and students and faculty must take on the responsibility of dealing explicitly with violations. The tenet must be a foundation of our university culture. [See http://oai.gmu.edu/].

Honor Code
Students must adhere to the guidelines of the George Mason University Honor Code [See http://oai.gmu.edu/the-mason-honor-code-2/].
Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

MasonLive/Email
Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account. [See http://masonlive.gmu.edu/].

Patriot Pass
Once you sign up for your Patriot Pass, your passwords will be synchronized, and you will use your Patriot Pass username and password to log in to the following systems: Blackboard, University Libraries, MasonLive, myMason, Patriot Web, Virtual Computing Lab, and WEMS. [See https://thanatos.gmu.edu/passwordchange/index.jsp].

Responsible Use of Computing
Students must follow the university policy for Responsible Use of Computing. [See http://universitypolicy.gmu.edu/policies/responsible---use---of---computing/].

Students with Disabilities
Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See http://ods.gmu.edu].

University Libraries
University Libraries provides resources for distance students. [See http://library.gmu.edu/for/distance].

Writing Center
The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing. [See http://writingcenter.gmu.edu]. You can now sign up for an Online Writing Lab (OWL) session just like you sign up for a face-to-face session in the Writing Center, which means YOU set the date and time of the appointment! Learn more about the Online Writing Lab (OWL). See (http://writingcenter.gmu.edu/tutoring/email--tutoring)

Counseling and Psychological Services
The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See http://caps.gmu.edu].

Family Educational Rights and Privacy Act (FERPA)
The Family Educational Rights and Privacy Act of 1974 (FERPA), also known as the "Buckley Amendment," is a federal law that gives protection to student educational records and provides students with certain rights. [See http://registrar.gmu.edu/privacy].

Diversity/Religious Holidays
If there are any issues related to religious holidays, please inform the instructor the first week of class. See also http://catalog.gmu.edu/content.php?catoid=5&navoid=104

N.B. The instructor reserves the right to revise this syllabus as required.

Course Schedule

Part 1	
Week 1 Monday August 28 to Sunday September 3	
Topic:	Introduction to Logic (Unit 1)
	The Structure of Sentential Logic (Unit 2)
	Learning Outcomes 1, 2 and 5
To Read:	Unit 1 (Klenk 1-18)
	Unit 2 (Klenk 21-32)
To Watch:	Unit 1 (parts 1 and 2)
	Unit 2 (parts 1 and 2)
Recommended:	Unit 1 Practice Exercises (in Klenk and on BB if applicable)
	Unit 2 Practice Exercises (in Klenk and on BB if applicable)
Required:	Syllabus Quiz
	Units 1 and 2 Quiz
	Discussion Assignment: Introductions
	All week 1 assignments must be completed by 9/3 at 11:59pm
Week 2 Monday September 4 to Sunday September 10	
Labor Day Holiday Monday September 5	
Topic:	Computing Truth Values (Unit 3)
	Learning Outcome 5
To Read:	Unit 3 (Klenk 33-50)
To Watch:	Unit 3 (parts 1 and 2)
Recommended:	Unit 3 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 3 Quiz
	All week 2 assignments must be completed by 9/10 at 11:59pm
Week 3 Monday September 11 to Sunday September 17	
Topic:	Symbolizing English Sentences (Unit 4)

	Learning Outcome 5
To Read:	Unit 4 (Klenk 51-73)
To Watch:	Unit 4 (parts 1 and 2)
Recommended:	Unit 4 Practice Exercises (in Klenk and on BB if applicable)
Required:	Discussion Assignment: Lost in Translation
	Unit 4 Quiz
	All week 3 assignments must be completed by 9/17 at 11:59pm
Week 4 Monday September 18 to Sunday September 24	
Topic:	Truth Tables for Testing Validity (Unit 5)
	Learning Outcome 5
To Read:	Unit 5 (Klenk 74-94)
To Watch:	Unit 5 (parts 1 and 2)
Recommended:	Unit 5 Practice Exercises (in Klenk and on
	BB if applicable)
Required:	Unit 5 Quiz
	Discussion Assignment: Lost in Translation
	All week 3 assignments must be completed by 9/24 at 11:59pm
Week 5 Monday September 25 to Sunday October 1	
Topic:	Further Applications of the Truth Table
	Method (Unit 6)
	Learning Outcome 1
To Read:	Unit 6 (Klenk 95-112)
To Watch:	Unit 6
Recommended:	Unit 6 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 6 Quiz (must be completed by 10/1 at 11:59pm
Week 6 Monday October 2 to Sunday October 8	
Required:	Exam 1 (Must be completed by 10/8 at 11:59pm)
Part 2	
Week 7 Monday October 9 to Sunday October 15	
Columbus Day Monday October 9	
Topic:	The Proof Method: Eight Basic Inference
	Rules (Unit 7)
	Learning Outcome 5
To Read:	Unit 7 (Klenk 113-146)
To Watch:	Unit 7 (parts 1 and 2)
Recommended	Unit 7 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 7 Quiz (must be completed by 10/15 at 11:59pm)
Week 8 Monday October 16 to Sunday October 22	
Topic:	Replacement Rules (Unit 8)

	Learning Outcome 5
To Read:	Unit 8 (Klenk 147-174)
To Watch:	Unit 8 (parts 1 and 2)
Recommended:	Unit 8 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 8 Quiz (must be completed by 10/22 at 11:59pm)
Week 9 Monday October 23 to Sunday October 29	
Topic:	Conditional Proof and Indirect Proof (Unit 9)
	Learning Outcome 5
To Read:	Unit 9 (Klenk 175-200)
To Watch:	Unit 9 (parts 1 and 2)
Recommended	Unit 9 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 9 Quiz (must be completed by Sunday 10/29 at 11:59pm)
Week 10 Monday October 30 to Sunday November 5	
Required:	Exam 2 (Must be completed by 11/5 at 11:59pm)
Part 3	
Week 11 Monday November 6 to Sunday November 12	
Topic:	Singular Sentences (Unit 10)
	Learning Outcome 5
To Read:	Unit 10 (Klenk 201-211)
To Watch:	Unit 10
Recommended:	Unit 10 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 10 Quiz (must be completed by 11/12 at 11:59pm)
Week 12 Monday November 13 to Sunday November 19	
Topic:	Quantifiers (Unit 11)
	Learning Outcomes 4 and 5
To Read:	Unit 11 (Klenk 212-224)
To Watch:	Unit 11
Recommended:	Unit 11 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 11 Quiz (must be completed by 11/13 at 11:59pm)
Week 13 Monday November 20 to Sunday November 26	
Thanksgiving Recess.	
Week 14 Monday November 27 to Sunday December 3	
Topic:	Categorical Propositions (Unit 12)
	Learning Outcomes 4 and 5
To Read:	Unit 12 (Klenk 225-248)
To Watch:	Unit 12
Recommended:	Unit 12 Practice Exercises (in Klenk and on BB if applicable)
Required:	Unit 12 Quiz (must be completed by 12/3 at 11:59pm)
Week 15 Monday December 4 to Sunday December 10	

Topic:	Material Fallacies
	Learning Outcome 3
To Read:	Material Fallacies Notes
To Watch:	Material Fallacies
Recommended:	Material Fallacies Practice Exercise on BB
Required:	Material Fallacies Quiz
	Material Fallacies Discussion Board Assignment
	All Week 14 Assignments must be completed by 12/10 at 11:59pm
Final Exam/Reading Period Monday December 11 to Wednesday December 20	
Required:	Exam 3
	(Exam 3 must be completed by Wednesday December 20 at 11:59pm)