PHIL 220/005 – SYMBOLIC LOGIC

Winter Term 2: Jan. 4 – Apr. 8, 2020
MWF 9am – 10pm, LSC 1003

Instructor: Dr. Alexandre Korolev
Office: BUCH E163
Email: a.korolev@ubc.ca
Office hours: MW 10am – 11am or by appointment

Course Description:

This course is a basic introduction to contemporary formal logic and reasoning. You will learn how to symbolize and evaluate deductive arguments in classical sentential and predicate logics. Topics include natural language symbolization techniques; truth tables and interpretations; classical systems of natural deduction up to relational predicate logic with identity. The course will be of interest not only to philosophy students, but to all students interested in sharpening their logical skills and exploring the nature of reasoning.

Required Text:

Virginia Klenk, *Understanding Symbolic Logic,* 5th edition, (Prentice-Hall, 2008). Available in bookstore.

- ***Note on earlier editions:*** The main text of the 4th edition is close to that of the 5th edition, but the assigned problems are different or in some cases re-labelled. If you use the 4th edition, you will need to obtain a copy of the problems from the 5th edition in order to do the assignments.

Prerequisites:

No previous familiarity with either philosophy or logic is required, although previous exposure to an introductory course(s) in logic and critical thinking and/or scientific reasoning, Phil 120, or Phil 125, for example, would be an asset.

Course Website: www.canvas.ubc.ca → PHIL 220 005 2020W2

Class Format:

The general format of the class is a mixture of lectures, in-class discussions, online small group discussion activities, remotely proctored online tests (via Proctorio), review of assignments, and the Proctorio Final Exam. The lectures will invite participation from the students, but their main goal is to introduce and illustrate concepts.

IMPORTANT NOTE:

In order to access all the material from the course website and take graded assessments (Discussion Activities, Online Tests, and the Final Exam) you are required to have access to a regular computer (Windows/Mac computer or laptop). You are *not* advised to take the assessments from mobile devices (e.g., iPhone, iPad, Android device, etc.) as many of them are known not to be fully compatible with all the features of the existing learning management platform. For all the Proctorio Tests and the Final Exam you will need a working webcam and microphone. You must also install the Google Chrome web browser & the Proctorio Extension.

Course Objectives:

At the end of this course, you should be able to:

- Read and write in first-order languages

- Translate non-quantified and quantified English sentences into first-order languages

- Construct truth-tables and determine logical properties of, and relations between, sentences

- Provide informal proofs for given conclusions

- Provide formal proofs for given conclusion in a system of natural deduction

- State general metalogical properties of our systems of natural deduction.

Evaluation:

Online Discussion Activities	20%
Four Online Tests	40%
Proctorio Final Exam	40%

- ***Discussion Activities:*** We'll have several online small group discussion activities, roughly one per two weeks starting the 2nd week of classes. Prior to that every student will be assigned to one of several small groups (10 or so students), within which he or she will be expected to take part in all these group discussions. The more detailed instructions on the group discussions will be given shortly prior to the first Discussion Activity. All (equally weighted) Discussion Activities are worth 20% of your final grade.

- ***Online Tests:*** There will be four remotely proctored online tests (using Proctorio, a remote proctoring service software integrated into Canvas LMS). Tests will be made available to be taken during designated time windows of several days within which tests must be taken and submitted. Each test is worth 10% of your final grade.

- ***Final Exam:*** There will be an online, 2.5-hour long, cumulative final exam during the examination period weighing 40% of your final grade in this course. For the final exam, just like for the tests, this course will use Proctorio, an online remote invigilating tool.

Doing the textbook exercises and participation in online discussions are the key ingredients to the success in this course. **I highly recommend doing all the assigned problems (starred and unstarred) and actively participate in the online discussions** as the real test problem may closely resemble them, both in format and content. All starred problems have answers at the back of the book.

Tentative Course Schedule:

Week #	Textbook Unit / Lesson	Activity
Week 1 / Jan. 4	Unit 1: Intro to Logic	
Week 2 / Jan. 11	Unit 2: The Structure of Sentential Logic	
Week 3 / Jan. 18	Unit 3: Semantics: Computing Truth Values	**DA 1**
Week 4 / Jan. 25	Units 3, 4: Syntax: Symbolizing English Sentences	**Test 1**
Week 5 / Feb. 1	Unit 5: Semantics: Truth Tables for Testing Validity	**DA 2**
Week 6 / Feb. 8	Units 6, 7: Semantics: Further Applications of the Truth Table Method	**Test 2**
Feb. 15 – Feb. 19	**Family Day & Mid-Term Break**	
Week 7 / Feb. 22	Units 7, 8: The Proof Method: Eight Basic Inference Rules	
Week 8 / Mar. 1	Units 8, 9: The Proof Method: Replacement Rules	**DA 3**
Week 9 / Mar. 8	Units 10, 11: The Proof Method: Conditional Proof & Indirect Proof	**Test 3**
Week 10 / Mar. 15	Units 12 – 14: Basics of Monadic Predicate Logic	
Week 11 / Mar. 22	Unit 15: Proofs in Monadic Predicate Logic	**DA 4**
Week 12 / Mar. 29	Units 16, 17: Invalidity in Quantifier Logic; Intro to Relational Predicate Logic	**Test 4**
Week 13 / Apr. 5	Units 18, 19: Relational Predicate Logic: Proofs & Invalidity; Identity & Definite Descriptions	**DA 5**
Exam Period Apr. 12 – Apr. 27	Exact time and location TBA	**Final Exam**

IMPORTANT NOTE:

This schedule is tentative and may be revised as the semester unfolds. All changes to the schedule will be announced in class.

Academic Concessions, Missed Assignments, and Grade Changes:

According to the newly revised University Academic Concession policy taking effect on Sep. 1, 2019, students must contact me, the instructor, via email as soon as you are aware you may need an in-term concession. I will adjudicate your first request. You need to include a Student Self-Declaration form, found on the Arts Advising website at

students-2016.sites.olt.ubc.ca/files/2018/01/Academic-Concession-Form-2-page-January-2018.pdf

Please note that, according to the new policy, for all consecutive concessions (second, third, etc.), you must make your request directly to your appropriate Faculty Advising Office. The official guidelines of what types of academic concessions are available to you and what procedures you need to follow to request them can be found at the following page:

students.arts.ubc.ca/advising/academic-performance/help-academic-concession/

As a rule, there'll be no make-ups for the graded activities because the answer keys for the assignments with the explanations are typically revealed to the class after the assignment deadline. If you do have a University valid excuse for missing them (see above about Academic Concession), I will transfer the weight of what you have missed to the weight of your final exam.

If you wish to have a grade reconsidered, write a brief note stating your reason. Typically, the note will outline what you take to be the requirements of a good answer and point out where you believe you met these requirements.

Learning Analytics:

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. This course will be using the Canvas Learning Management System, capturing data about your activity and providing information that can be used to improve the quality of teaching and learning.

Overall, in this course, I may use analytics data to

- View overall class progress
- Track your progress in order to provide you with personalized feedback
- Review statistics on course content being accessed to support improvements in the course
- Track participation in discussion activity forums and in the course in general
- Assess your participation in the course.

University Policies:

- **UBC General Policies:**

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on the UBC Senate website at

senate.ubc.ca/policies-resources-support-student-success

- **UBC Plagiarism Policy:**

Plagiarism, which is intellectual theft, occurs where an individual submits or presents the oral or written work of another person as his or her own. Scholarship quite properly rests upon examining and referring to the thoughts and writings of others. However, when another person's words (i.e. phrases, sentences, or paragraphs), ideas, or entire works are used, the author must be acknowledged in the text, in footnotes, in endnotes, or in another accepted form of academic citation. Where direct quotations are made, they must be clearly delineated (for example, within quotation marks or separately indented). Failure to provide proper attribution is plagiarism because it represents someone else's work as one's own. Plagiarism should not occur in submitted drafts or final works. A student who seeks assistance from a tutor or other scholastic aids must ensure that the work submitted is the student's own. Students are responsible for ensuring that any work submitted does not constitute plagiarism. Students who are in any doubt as to what constitutes plagiarism should consult their instructor before handing in any assignments. A link about Academic misconduct is as follows:

www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959

- **Students with special needs:**

Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, or mental or physical health are advised to discuss their needs with the Disability Resource Centre at Brock Hall, Room 1203, 1874 East Mall or visit their website at

you.ubc.ca/ubc-life/campus-community/students-disabilities

Copyright:

Version: Jun. 27, 2020