PHIL2034

Formal Logic

Session 2, Special circumstance 2020

Department of Philosophy

Contents

Disclaimer

Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face and online activities for your unit, please go to timetable viewer. To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff
Convenor/lecturer/tutor
Jennifer Duke-Yonge
jennifer.duke-yonge@mq.edu.au
Contact via Email, or via "Dialogues" in iLearn
25WWB 719
By arrangement

Credit points
10

Prerequisites
40cp at 1000 level or above

Corequisites

Co-badged status

Unit description
Logic is the study of reasoning and argument. This unit will introduce you to formal logic, where we focus on the structures of claims and arguments to consider what it is that makes a piece of reasoning good or bad: What makes one claim follow from another? Are there some claims and arguments that any rational person must accept? If so, what is special about those claims and arguments? In the first half of the unit, you will learn to use formal techniques in propositional and predicate logic to prove whether certain kinds of arguments are valid or invalid. In the second half of the unit you will gain a deeper understanding of those techniques, by examining some of the philosophical problems that arise in connection with the methods and assumptions of formal logic, focusing on topics including truth and paradox, necessity and possibility, and the logic of fiction. The unit is suitable for those with an interest in the nature and philosophy of logic for its own sake, and for those who want to understand the techniques of formal logic for use in philosophy, or in other areas such as computing, mathematics and linguistics.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: apply knowledge of the languages of propositional logic and predicate logic to translate between English and those formal languages.

ULO2: utilise truth trees, truth tables and variants as appropriate to evaluate formulas and arguments in propositional logic and predicate logic.

ULO3: apply key logical concepts to solve new problems.

ULO4: explain some central problems in the philosophy of logic arising out of the formal methods studied, and some of the main responses to those problems.

ULO5: clearly communicate your own perspective on the philosophical problems presented in the unit.

ULO6: demonstrate commitment to learning through regular, active engagement.

General Assessment Information

Rationale for unit assessment structure

Assessment is spread through the unit in such a way that no task is too heavily weighted, and you will receive regular feedback throughout the unit.

Special Consideration

Requests for extensions should be submitted via a Special Consideration request, which is available in the http://ask.mq.edu.au portal. Your request should be accompanied by appropriate documentation, such as a medical certificate. Please see the Special Consideration policy in the list of policies at the end of this document for further details.

Read the policy closely as your request may be turned down if you have not followed procedure, or if you have not submitted a request in a timely manner.

Late Submission Penalty

Unless a Special Consideration request has been submitted and approved, (a) a penalty for lateness will apply – two (2) marks out of 100 will be deducted per day for assignments submitted after the due date – and (b) no assignment will be accepted more than seven (7) days (incl. weekends) after the original submission deadline. No late submissions will be accepted for timed assessments – e.g. quizzes, online tests.

Academic Honesty

In Philosophy, academic honesty is taken very seriously. Misrepresenting someone else's work as your own may be grounds for referral to the Faculty Disciplinary Committee. If you have questions about how to properly cite work or how to credit sources, please talk to one of the teaching staff and see also Academic Integrity Policy (see the Policies and Procedures section below).

Your assessments in this units are *individual assessments*, so the work you submit must be your own work. You may not work on the assignments with other students.

For information about extensions, late penalties and special consideration, see *Policies*

and Procedures section below.

Any assessment problems should be discussed with the convenor as soon as they arise.

Assessment Tasks

Name	Weighting	Hurdle	Due
Participation	10%	No	Wks 2-6, 8-12
Weekly online quizzes	25%	No	Wks 2-6, 8-12
Test	25%	No	Week 7, in tutorial (online equivalent available)
Take-home tasks	40%	No	Wk5; Wk 9; Wk 13

Participation

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 10 hours
Due: **Wks 2-6, 8-12**
Weighting: **10%**

Active participation in discussion and activities. Students will have the option of participating in synchronous activities using Zoom, or asynchronous activities including iLearn Discussion Forums and practical exercises.

On successful completion you will be able to:
- demonstrate commitment to learning through regular, active engagement.

Weekly online quizzes

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 15 hours
Due: **Wks 2-6, 8-12**
Weighting: **25%**

Weekly online quizzes

On successful completion you will be able to:

- apply knowledge of the languages of propositional logic and predicate logic to translate between English and those formal languages.
- utilise truth trees, truth tables and variants as appropriate to evaluate formulas and arguments in propositional logic and predicate logic.
- apply key logical concepts to solve new problems.
- explain some central problems in the philosophy of logic arising out of the formal methods studied, and some of the main responses to those problems.

Test

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 15 hours
Due: **Week 7, in tutorial (online equivalent available)**
Weighting: **25%**

Test on content from the first half of the unit.

On successful completion you will be able to:
- apply knowledge of the languages of propositional logic and predicate logic to translate between English and those formal languages.
- utilise truth trees, truth tables and variants as appropriate to evaluate formulas and arguments in propositional logic and predicate logic.
- apply key logical concepts to solve new problems.

Take-home tasks

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 25 hours
Due: **Wk5; Wk 9; Wk 13**
Weighting: **40%**

Three tasks, involve a combination of formal exercises (translation, proof) and short written responses and reflections.

On successful completion you will be able to:
- apply knowledge of the languages of propositional logic and predicate logic to translate between English and those formal languages.

- utilise truth trees, truth tables and variants as appropriate to evaluate formulas and arguments in propositional logic and predicate logic.
- apply key logical concepts to solve new problems.
- explain some central problems in the philosophy of logic arising out of the formal methods studied, and some of the main responses to those problems.
- clearly communicate your own perspective on the philosophical problems presented in the unit.

[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

UNIT DELIVERY

All lectures will be delivered online. They will be available through iLearn on Monday of each week. You should watch the lecture recordings before your tutorial.

You will have the opportunity to study the unit entirely online, or attend an on-campus tutorial (subject to demand, and any further COVID-based restrictions). If you have any questions or would like more information about tutorial arrangements, please contact the convenor (jennifer.duke-yonge@mq.edu.au).

REQUIRED TEXT

The textbook for the first half of the unit is Logic: an introduction by Greg Restall. You can download it free from the library, by following the Leganto link from iLearn. You can purchase the hard copy of the book if you prefer.

Readings for the second half of the unit will be available through Leganto, with links from iLearn

UNIT WEBPAGE AND TECHNOLOGY USED AND REQUIRED

This unit has an online presence. Login is via: https://ilearn.mq.edu.au/ Students are required to have regular access to a computer and the internet. Mobile devices alone are not sufficient.

- For technical support go to: http://mq.edu.au/about_us/offices_and_units/informatics/help - For student quick guides on the use of iLearn go to: http://mq.edu.au/iLearn/student_info/guides.htm

Unit Schedule

Week 1 (beginning 27/7)	Course introduction: What is Logic? *An introduction to formal logic, and to the unit*
Week 2 (beginning 3/8)	The language of Propositional Logic *This week, you'll learn a simple formal language, which will allow us to give a clear representation of the logical structure of propositions and arguments*
Week 3 (beginning 10/8)	Truth tables *Truth tables give us a way of testing arguments for validity in Propositional Logic*
Week 4 (beginning 17/8)	Trees for Propositional Logic *Trees give us another way of testing arguments for validity. This makes use of the insights from truth tables, but will be a more generalisable method.*
Week 5 (beginning 24/8)	The language of Predicate Logic *The language of Predicate Logic extends the language we've been using so far, giving us a more nuanced representation of the structure of propositions.*
Week 6 (beginning 31/8)	Trees for Predicate Logic *We'll extend the tree method from Propositional Logic, for use with our new language.*
Week 7 (beginning 7/9) *14/9 - 27/9*	Revision and test *Midsemester break*
Week 8 (beginning 28/9)	Identity *Identity seems like a simple concept, but adding it to Predicate Logic greatly increases the expressive power of the language.*
Week 9 (beginning 5/10)	Existence and non-existence *Are there things that don't exist? If so, what kinds of things are they? What are we referring to when we talk about something that doesn't exist? Do fictions have to follow the laws of logic? This week, we'll look at some interesting philosophical problems about existence and non-existence.*
Week 10 (beginning 12/10)	Possibility and necessity *What does it mean to say that something is necessary, or possible? This week, we'll look at some ways of understanding necessity and possibility in terms of possible worlds, and we'll see how the formal methods we've developed could be modified to capture these concepts.*
Week 11 (beginning 19/10)	Paradoxes 1: Puzzles and Paradoxes *What is a paradox, and how do paradoxes differ from mere puzzles? This week we'll look at examples of paradoxes and pseudo-paradoxes, to see which ones we now have the logical tools to deal with.*

Week 12 (beginning 26/10)	Paradoxes 2: The significance of paradoxes
	Some paradoxes are not so easily resolved. The Liar Paradox, for example ('This sentence is false'), poses serious challenges for our concept of truth. This week we'll examine of some of the more intractable paradoxes, and their significance. We'll finish up by considering how logic develops in response to challenges such as those posed by paradoxes.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy

- Academic Integrity Policy

- Academic Progression Policy

- Assessment Policy

- Fitness to Practice Procedure

- Grade Appeal Policy

- Complaint Management Procedure for Students and Members of the Public

- Special Consideration Policy *(Note: The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/ offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.