

# PHIL30043 Logic Completeness and Incompleteness

<b>Credit Points:</b>	12.50												
<b>Level:</b>	3 (Undergraduate)												
<b>Dates &amp; Locations:</b>	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. Standard												
<b>Time Commitment:</b>	Contact Hours: Thirty-five contact hours per semester: two 1-hour lectures per week for the whole semester and a 1-hour tutorial per week beginning the second week of semester Total Time Commitment: An average of 8.5 hours each week.												
<b>Prerequisites:</b>	One of Logic: Language and Information, or Logic & Philosophy: Non-Classical Logics or introduction to Mathematics or with the permission of the subject coordinator. <table border="1" data-bbox="387 633 1485 898"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>UNIB10002 Logic: Language and Information</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>PHIL20030 Logic &amp; Philosophy: Non-Classical Logics</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>MAST10012 Introduction to Mathematics</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	UNIB10002 Logic: Language and Information	Semester 1	12.50	PHIL20030 Logic & Philosophy: Non-Classical Logics	Semester 2	12.50	MAST10012 Introduction to Mathematics	Semester 1	12.50
Subject	Study Period Commencement:	Credit Points:											
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PHIL20030 Logic & Philosophy: Non-Classical Logics	Semester 2	12.50											
MAST10012 Introduction to Mathematics	Semester 1	12.50											
<b>Corequisites:</b>	None												
<b>Recommended Background Knowledge:</b>	As per prerequisites.												
<b>Non Allowed Subjects:</b>	This subject was previously offered at level 2 as 161-241 Logic: Completeness and Incompleteness. Students who have completed 161-241 are not permitted to enrol in this subject.												
<b>Core Participation Requirements:</b>	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website : <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>												
<b>Coordinator:</b>	Assoc Prof Greg Restall												
<b>Contact:</b>	<b><u>Associate Professor Greg Restall</u></b> ( <a href="http://www.philosophy.unimelb.edu.au/staff/Restall/">http://www.philosophy.unimelb.edu.au/staff/Restall/</a> ) <b><u>restall@unimelb.edu.au</u></b> ( <a href="mailto:restall@unimelb.edu.au">mailto:restall@unimelb.edu.au</a> )												
<b>Subject Overview:</b>	This subject deals with selected topics in logic beyond what is covered in a first logic subject, such as the completeness and undecidability of first-order logic and alternative deductive systems. The course finishes with an elaboration of Gödel's incompleteness theorem, and a discussion of its consequences. Concepts and results will be approached via both theoretical discussion and practical experience with formal techniques, enabling students to appreciate the philosophical importance of the major logical results and equipping them for further study in philosophy or in logic-related areas of other disciplines, eg. mathematics, linguistics, computer science.												
<b>Objectives:</b>	Students who successfully complete this subject will <ul style="list-style-type: none"> <li># have an overview of central areas in mathematical logic.</li> <li># understand basic concepts in mathematical logic.</li> <li># demonstrate an ability to prove results in mathematical logic.</li> </ul>												

	# appreciate the relevance of results and concepts of logic to philosophical issues.
<b>Assessment:</b>	Tutorial exercises 50% (throughout semester), and a 2 hr written examination (not open-book) 50% (end of semester).
<b>Prescribed Texts:</b>	Richard Jeffrey, Formal Logic: Its Scope and Limits, 3rd edition. Together with extra readings available on LMS.
<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Biomedicine</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-BMED">https://handbook.unimelb.edu.au/view/2010/B-BMED</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-COM">https://handbook.unimelb.edu.au/view/2010/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-ENVS">https://handbook.unimelb.edu.au/view/2010/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-MUS">https://handbook.unimelb.edu.au/view/2010/B-MUS</a>)</li> <li># <b>Bachelor of Science</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-SCI">https://handbook.unimelb.edu.au/view/2010/B-SCI</a>)</li> <li># <b>Bachelor of Engineering</b> (<a href="https://handbook.unimelb.edu.au/view/2010/355AA">https://handbook.unimelb.edu.au/view/2010/355AA</a>)</li> </ul> <p>You should visit <a href="http://breadth.unimelb.edu.au/breadth/info/index.html">learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)</a> and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>Students who successfully complete this subject will</p> <ul style="list-style-type: none"> <li># acquire the ability to reason rigorously about abstract issues.</li> <li># acquire the ability to reason mathematically about non-numerical matters.</li> <li># acquire the ability to solve abstractly posed problems.</li> </ul>
<b>Links to further information:</b>	<a href="http://www.philosophy.unimelb.edu.au/">http://www.philosophy.unimelb.edu.au/</a>
<b>Related Majors/Minors/Specialisations:</b>	<p>History &amp; Philosophy of Science  History and Philosophy of Science  History and Philosophy of Science Major  Philosophy  Philosophy  Philosophy  Philosophy Major</p>