

161-241 Logic Completeness and Incompleteness

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| Credit Points: | 12.50 |
| Level: | 2 (Undergraduate) |
| Time Commitment: | 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: 3 contact hours/week, 5.5 additional hours/week. Total of 8.5 hours per week. |
| Prerequisites: | 161-115 Logic or 800-123 Logic: Language and Information, 620-122 Mathematics B (Advanced), or 620-142 Mathematics B, or 433-255 Logic and Computation, or 620-211 Mathematics 2 (Advanced) or with the permission of the subject coordinator. |
| Corequisites: | None |
| Recommended Background Knowledge: | None |
| Non Allowed Subjects: | None |
| Core Participation Requirements: | <p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p> |
| Contact: | Assoc Prof Greg Restall restall@unimelb.edu.au |
| Subject Overview: | 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 Godel'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. |
| Objectives: | Students who successfully complete this subject will <ul style="list-style-type: none"> # have an overview of central areas in mathematical logic; # understand basic concepts in mathematical logic; # demonstrate an ability to prove results in mathematical logic; # appreciate the relevance of results and concepts of logic to philosophical issues. |
| Assessment: | Tutorial exercises 50% (throughout semester), and a 2 hr written examination (not open-book) 50% (end of semester). |
| Prescribed Texts: | Richard Jeffrey, Formal Logic: Its Scope and Limits, 3rd edition. Together with extra readings available on LMS. |
| Breadth Options: | This subject potentially can be taken as a breadth subject component for the following courses: <ul style="list-style-type: none"> # Bachelor of Biomedicine (https://handbook.unimelb.edu.au/view/2009/J07) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05) # Bachelor of Science (https://handbook.unimelb.edu.au/view/2009/R01) |

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| | <p># Bachelor of Engineering (https://handbook.unimelb.edu.au/view/2009/355-AA)</p> <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p> |
| Fees Information: | Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees |
| Generic Skills: | <p>Students who successfully complete this subject will</p> <ul style="list-style-type: none"> # acquire the ability to reason rigorously about abstract issues; # acquire the ability to reason mathematically about non-numerical matters; # acquire the ability to solve abstractly posed problems. |
| Related Course(s): | Diploma in Arts (Philosophy) |
| Related Majors/Minors/ Specialisations: | <p>History & Philosophy of Science Philosophy Philosophy Philosophy Philosophy Major</p> |