COMP20004 Discrete Structures

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 2 one-hour lectures; 1 two-hour workshop (per week) Total Time Commitment: 120 hours
Prerequisites:	One first year mathematics subject (12.5 points) OR Admission to the MC-ENG Master of Engineering (Software)
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	433-255 Logic and Computation
Core Participation Requirements:	For the purposes of considering request 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:http://www.services.unimelb.edu.au/disability/
Coordinator:	Assoc Prof Harald Sondergaard
Contact:	Associate Profesor Harald Sondergaard email: **harald@unimelb.edu.au (mailto:harald@unimelb.edu.au)**
Subject Overview:	Formal logic and discrete mathematics provide the theoretical foundations for computer science. This subject is an introduction to the science of computing. It provides a grounding in the theories of logic, automata and formal languages, providing concepts that underpin virtually all the practical tools contributed by the discipline, for automated storage, retrieval, manipulation and communication of data. Topics include: sets, functions, relations, and combinatorics; propositional and predicate logic; proof principles; induction and recursion, well-ordering; regular languages, finite-state automata, context-free grammars and languages, pumping lemmas, parsing.
Objectives:	Please refer to Overview.
Assessment:	Two homework sets, one during each half of the semester, expected to take 16 hours each (24%) A 45-minute mid-semester written test (12%) A 2-hour end-of-semester written examination (64%) To pass the subject, students must obtain at least: 50% overall And at least 32/64 in the written examination
Prescribed Texts:	None
Recommended Texts:	K. Doets and J. van Eijck. The Haskell Road to Logic, Maths and Programming. King's College Publ., 2004

	M. Sipser. Introduction to the Theory of Computation. Thomson Course Technology, second edition, 2006
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2012/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2012/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2012/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2012/B-MUS)** 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.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On successful completion of this subject students should have: # Ability to apply knowledge of basic science and engineering fundamentals # Ability to communicate effectively, not only with engineers but also with the community at large # In-depth technical competence in at least one engineering discipline; and # Ability to undertake problem idntification, formulation and solution
Notes:	Students taking this subject will be expected to regularly access an internet-enabled computer. This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course.
Related Course(s):	Bachelor of Engineering
Related Majors/Minors/ Specialisations:	B-ENG Software Engineering stream Master of Engineering (Software) Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses Science-credited subjects - new generation B-SCI and B-ENG. Core selective subjects for B-BMED.