# 615-202 Reasoning with Informatics

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| **Credit Points:** | 12.50 |
| **Level:** | 2 (Undergraduate) |
| **Dates & Locations:** | 2009,<br>This subject commences in the following study period/s:<br>Semester 1, - Taught on campus.<br>Lectures and workshops. |
| **Time Commitment:** | Contact Hours: 2 one-hour lectures per week; 1 two-hour workshop per week. Total 48 hours.<br>Total Time Commitment: 120 hours total time commitment. |
| **Prerequisites:** | *Informatics 2: People, Data and the Web* |
| **Corequisites:** | None |
| **Recommended Background Knowledge:** | None |
| **Non Allowed Subjects:** | None |
| **Core Participation Requirements:** | It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit. |
| **Coordinator:** | Ms Rachelle Bosua |
| **Subject Overview:** | This subject presents tools, methods and theories for analysing and representing concepts in data-rich environments. Students use notations, such as XML, to reason about objects and concepts, and their relationships within and across domains. The subject addresses fundamental ideas within Informatics, such as naming, knowing and representing, and includes discussions of socio-technical systems. Students will analyse an existing information schema (or ontology) in a science domain (such as genetics, astrophysics, or biomedicine) and create their own ontology for a small scientific domain. Students will explore applications of these techniques to deal with problems of data fidelity, validity and interoperability across scientific activities. |
| **Objectives:** | On completion of this subject students should be able to:<br># establish and justify the fundamental concepts within a scientific domain<br># use these concepts to reason about the characteristics of the domain<br># use formal notations and tools (e.g. XML schema) to represent these concepts<br># understand the strengths and limitations of these notations and tools<br># appreciate the socio-technical influences that contribute to the analysis of information systems |
| **Assessment:** | Project 1: Analysis of existing information model or ontology (20%) (due early in the semester)Project 2: Creation of an information model or ontology for a scientific domain; requirements specification for data interoperability between data collection sites (30%) (due late in the semester)Exam: 2-hour end-of-semester written examination (50%). |
| **Prescribed Texts:** | J Gammack, V Hobbs & D Pigott The Book of Informatics Thompson 2007 |
| **Breadth Options:** | This subject potentially can be taken as a breadth subject component for the following courses:<br># **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2009/D09)**<br># **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)**<br># **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04)**<br># **Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)** |

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| | 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 completion of this subject students should have developed the following generic skills:<br># the ability to analyse and solve real-world problems with computers;<br># the ability to synthesise information and communicate results effectively;<br># the capacity for critical and independent thought and reflection |
| **Notes:** | Students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course will receive science credit for the completion of this subject.<br>Students undertaking this subject will be expected to regularly access an internet-enabled computer. |