GEOM90015 Spatial Data Infrastructure

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2014.
Time Commitment:	Contact Hours: 48 hours, comprising of two hours of lectures per week and 24 hours of projects and labs per semester Total Time Commitment: 200 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	An understanding of spatial data and relevant processes and service delivery concepts. It is advisable that students undertake this subject in their final year of study.
Non Allowed Subjects:	None
Core Participation Requirements:	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. 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
Contact:	Professor Abbas Rajabifard **abbas.r@unimelb.edu.au (mailto:abbas.r@unimelb.edu.au)**
Subject Overview:	**AIMS** In this subject, students will learn about the principles, concepts and design strategies used in the development of Spatial Data Infrastructure (SDI) as an enabling platform to facilitate multi-sourced data and service discovery, access, integration and use. An example of SDI is the land titles system and the tools used to maintain and interrogate it. Emphasis will be placed on both technological and institutional factors that facilitate the development of SDIs. Students will examine related disciplines such as land and marine administration as well as technical areas such as interoperability, web-mapping and web-delivery to better meet sustainable development objectives. This subject is of particular relevance to students who want to pursue a career in spatial data management, land administration, but is also relevant to a range of geomatic engineering disciplines that use and produce large spatial datasets for decision-making in support of sustainable development. The subject partners with other subjects on spatial data management, spatial data analysis and spatial data visualization, and is of particular relevance to people wishing to establish a career in the spatial information industry, the environmental or planning industry. **INDICATIVE CONTENT** SDI concepts and theory, current SDI initiatives, SDI development strategies and development models; SDI as an enabling platform, SDI and Spatially Enabled Government and Society, SDI and partnership approaches, financing and capacity building, challenges for developed and developing countries, capacity building, marine SDI and seamless SDI, policy and privacy Issues, SDI and land administration, metadata, standards and clearinghouses, SDI application areas, and SDI implementation and benchmarking.
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)**

	Having completed this unit the student is expected to: 1 Describe the core SDI principles; 2 Identify the necessary components required to support the development of SDIs, including technical and institutional arrangements and the basis of effective and efficient design; 3 Describe a range of technologies and technological concepts applicable for developing and maintaining SDIs; 4 Analyse the range of approaches to SDI development in both developed and developing countries; 5 Model, design and evaluate SDI initiatives and spatial enablement platforms.
Assessment:	One 2-hour written examination, end of semester (40%). Associated with Intended Learning Outcomes (ILOs) 1, 2 and 3 One group major assignment of 3000 words per student member and a presentation (10 min) due at the end of semester (30%). ILOs 1 - 5 One selected topic presentation over the semester (10%). ILOs 1, 2 and 4 Two practical exercises and reports of not more than 1000 words total to be submitted over the first eight weeks of the semester (20%). ILOs 2 and 5
Prescribed Texts:	Rajabifard A (2007), Towards a Spatially Enabled Society. The University of Melbourne Press SDI cookbook (2004), produced by the GSDI Association (www.gsdi.org) Williamson, I.P, Rajabifard, A. and Feeney, M.-E. (2003). Developing Spatial Data Infrastructures: From Concept to Reality. Taylor and Francis
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On successful completion students should have: # Ability to undertake problem identification, formulation, and solution; # Understanding of social, cultural, global, and environmental responsibilities and the need to employ principles of sustainable development; # Ability to communicate effectively with the engineering team and with the community at large.
Notes:	**LEARNING AND TEACHING METHODS** The subject is based principally on content that has been developed from industry experience in designing, developing and implementing SDIs. This will be supplemented by guest presentations and seminars from industry professionals. A computer laboratory will be used to explore potential technological tools and different lab exercise that can be used to learn how to design and use different components related to SDIs. In the tutorials, students will work in groups to apply theory gained in the lectures to a real world industry case study. This learning will enable students to consolidate their knowledge in a practical and relevant way. Within their groups students will also prepare and present a minor research project on an affiliated topic of their interest selected from an extensive list. **INDICATIVE KEY LEARNING RESOURCES** The subject will utilise different sources (books, journal papers, conference papers, etc.) mostly available through the website for the Centre for SDIs and Land Administration, Department of Infrastructure Engineering, The University of Melbourne (www.csdila.unimelb.edu.au). The subject in particular will utilise the following books: # 'Developing Spatial Data Infrastructures: from concept to reality', Taylor and Francis, 2003 UK, edited by Ian Williamson, Abbas Rajabifard and Mary-Ellen F. Feeney, # 'Towards a Spatially Enabled Society', The University of Melbourne 2007, edited by Abbas Rajabifard, The University of Melbourne. # 'SDI cookbook' produced by the GSDI Association (www.gsdi.org) # 'Multi-view Framework to Assess SDIs', edited by Joep Crompvoets, Abbas Rajabifard, Bastiaan van Loenen and Tatiana Delgado Fernandez, 2008. # and related scientific journal or conference publications (particularly from GSDI and INSPIRE conferences) will be also utilised. **CAREERS / INDUSTRY LINKS** Presenters from relevant government and private agencies will present guest lectures and seminars. Real-world examples of SDIs will be used as case studies.

Related Course(s):	Master of Geographic Information Technology Master of Information Technology Master of Information Technology Master of Philosophy - Engineering Master of Spatial Information Science Ph.D.- Engineering
Related Majors/Minors/ Specialisations:	Master of Engineering (Geomatics)