ISYS90078 Health Data, Information and Knowledge

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 36 hours Total Time Commitment: 200 hours
Prerequisites:	**Subject** / **Study Period Commencement:** / **Credit Points:** ISYS90069 eHealth & Biomedical Informatics Systems / June / 12.50
Corequisites:	None
Recommended Background Knowledge:	None
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
Coordinator:	Assoc Prof Kathleen Gray
Contact:	email: **kgray@unimelb.edu.au (mailto:kgray@unimelb.edu.au)**
Subject Overview:	**Aims** This subject develops familiarity with fundamental aspects of health information science and health information management – how health data is generated, collected, stored, communicated, integrated, analysed and converted into knowledge for clinical, research and administrative purposes. **Indicative Content** Lectures and tutorials will cover five topics: 1. Data Sources in Health # Special features of biomedical and clinical data # Types of data (clinical, molecular, images, environmental) # Generation of biomedical and clinical data (clinical devices, laboratory equipment, populational surveys, sensors) # Data repositories (Bioinformatics databases, literature, evidence-based practice, clinical databases) 2. Information Modelling in Health # Modelling health information and clinical information systems # Accessing and retrieving information # Standards in healthcare (nomenclatures, terminologies, taxonomies, vocabularies and ontologies) MeSH terms, SNOMED-CT, LOINC, ICD9, ICD10, UMLS

	# Standards organizations in Australia and worldwide 3. Information Processing in Health # Information processing in biomedicine, healthcare and population health. # Main software tools and methods, with a focus on clinical research, computerised physician order entry (CPOE) in hospitals, disease surveillance 4. Information Analysis and Visualization in Health # Visualising information # Knowledge management and discovery 5. Change Management in Health IT # Management change and adoption # Regulatory framework, ethical, security and privacy issues
Learning Outcomes:	**Intended Learning Outcomes (ILOs)** On completion of this subject the student is expected to: 1 Communicate technical understanding of specific characteristics and processes involved in managing health data, information and knowledge 2 Demonstrate an integrated understanding of how health data is generated, collected, stored, communicated, integrated, analysed and converted into knowledge for clinical, research and administrative purposes
Assessment:	Five written reports based on individual computer-based learning tutorials / practical activities (10% each). Approximately 500 words each. Due in weeks 3,5,7,9 and 11. Each requires approximately 13-15 hours of work per student including preparation. Intended Learning Outcome (ILO) 1 is addressed in these assignments. This component of assessment is a hurdle and students must pass it to pass the subject. One written 2-hour closed book end-of-semester examination (50%). ILOs 1 and 2 are addressed in this examination. The examination is a hurdle and students must pass it to pass the subject.
Prescribed Texts:	None
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 completion of this subject, students should have developed the following generic skills: # Understanding of global issues relating to health # The ability to work across different disciplines # Excellent in-depth knowledge to support responsible leadership
Notes:	**Learning and Teaching Methods** This subject is offered asone 3-hour block of two 1- hour lectures plus one 1- hour tutorial per week over 12 weeks. Subject documents and class records are handled using LMS Blackboard. **Indicative Key Learning Resources** This subject has no textbook. Students have access to lecture audio and slides in the LMS, as well as electronic full-text of recommended readings, including current journal articles, government documents and industry reports. 2012 examples of recommended readings are: Cohen, A., Adams, C., Davis, J., Yu, C., Yu, P., Meng, W., Duggan, L., McDonagh, M., & Smalheiser, N. (2010). *Evidence-based medicine, the essential role of systematic reviews, and the need for automated text mining tools*. Pp. 376-380. In Proceedings of IHI'10, November 11-12 2010, Arlington Virginia USA. Collen, M. (2012). *Computer Medical Databases: The First Six Decades* (1950-2010). Springer, London.

	Ferlie, E., Crilly, T., Jashapara, A., & Peckham, A. (2012). *Knowledge mobilization in healthcare: A critical review of health sector and generic management literature*. Social Science & Medicine 74, 1297-1304. Musen, M., Noy, N., Shah, N., Whetzel, P., Chute, C., Story, M.-A., Smith, B. & the NCBO team. (2012). *The National Center for Biomedical Ontology*. Journal of the American Medical Informatics Association, 19, 190-195. Shilton, K. (2012). *Participatory personal data: An emerging research challenge for the information sciences*. Journal of the American Society for Information Science and Technology, [in press 34pp.] **Careers/Industry Links** This subject is important in the field of eHealth and biomedical informatics, i.e. work that concerns the acquisition, storage, retrieval and use of information in, about and for human health, and the design and management of related solutions to advance the understanding and practice of healthcare. This subject is offered jointly by the Faculty of Engineering and the Faculty of Medicine, Dentistry and Health Sciences, and also uses expert guest speakers from industry and government. In particular, this subject addresses the core components of major national and international certification programs such as the Health Information Management and Systems Society (HIMSS) and the Certified Health Information Australasia (CHIA).
Related Course(s):	Master of Information Systems Master of Information Systems Master of Information Systems Master of Information Technology
Related Majors/Minors/ Specialisations:	MIS Professional Specialisation MIS Research Specialisation MIT Health Specialisation