N05-IA Specialist Certificate in Clinical Research (Informatics and Analysis)

Year and Campus:	2009
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Graduate/Postgraduate
Duration & Credit Points:	
Contact:	Mary Georges Project Manager Tel: 03 9810 3185 Email: **clinicalresearch@mccp.unimelb.edu.au (mailto:clinicalresearch@mccp.unimelb.edu.au)**
Course Overview:	The Specialist Certificate in Clinical Research (Informatics and Analysis) is a stand alone award offered by the School of Enterprise in partnership with Bio21 Australia. Bio21 Australia has worked with Melbourne University and VPAC for the purpose of developing this course which aims to enhance clinical researchers' knowledge of Bioinformatics. This award also provides credit into the Graduate Diploma and Masters programs in Clinical Research.
Objectives:	Graduates of the Specialist Certificate in Clinical Research (Informatics and Analysis) will: # Have an understanding of privacy, ethical, intellectual property issues as they relate to Clinical Trials and Bioinformatics research # Have an understanding of basic Database models and terminology. (e.g. relational databases, tables, columns and rows, normalization, joins), including simple queries using SQL, and techniques for the extraction of data from a database for analysis in other tools (e.g. Excel, SPSS, SAS) # Have an appreciation of "federated" data models such as the MMIM project, and their use in multi-institution, cross-disciplinary studies, including advantages and disadvantages # Have an understanding of issues relating to research data including ownership, data quality and design of data collection mechanisms, linking of data from multiple resdearch sources, linkage to Victorian and Australian public health databases, and techniques for de-identification of data # Have an appreciation of the types and volumes of data that will be generated by new techniques in clinical research (e.g. genomic data, proteomic data) # Gain a basic understanding of data mining techniques, their applicability to Clinical Research and their limitations, e.g. neural networks, genetic algorithms, clustering and optimisation techniques # Become familiar with the current trends in Bioinformatics and how these relate to clinical research, e.g. the world-wide HAPMAP project # Gain an understanding of the complexity and basic techniques used in analysis of pharmaco-genetic data, such as analysis of SNPs and associated haplotypes, familial linkages and so on # Have a working knowledge of the major publicly available medical, genetic and biological databases on the internet (e.g. GenBank, Swiss-Prot, OMIM, etc.) # Have an appreciation of the variety of public software for use in specific Bioinformatics research (e.g. various versions of BLAST, MFOLD, etc.) # Understand the other professionals that are involved in Clinical Research, and gain an appreciation of when and who to ask for specialist assistance (e.g. statisticians and other mathematical experts, database experts and general computing staff)
Subject Options:	

Subject	Study Period Commencement:	Credit Points:
360-841 Applied Analysis of Clinical Trials	Semester 1, Semester 2	12.500
360-865 Clinical Research in Informatics	Semester 1, Semester 2	12.500

Entry Requirements:	An undergraduate degree or equivalent qualification in medicine, an allied health profession, science or social science which is recognised by the University as evidence of adequate

	preparation for the course plus documented evidence of at least the equivalent of one year's full-time relevant professional work experience in a medical, scientific or allied health environment. Please note that knowledge of information technology is not a pre-requisite.
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