POPH90111 Genetic Epidemiology

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught online/distance. Semester 2, Parkville - Taught on campus. Classroom or Distance
Time Commitment:	Contact Hours: Classroom: 2 hours per week. Distance: 2 hours per week via internet. Total Time Commitment: Students will be expected to undertake additional study (i.e. outside the stated contact hours) of at least 4-5 hours per week.
Prerequisites:	505-969 Epidemiology and Analytic Methods I, or equivalent 505-970 Epidemiology and Analytic Methods II, or equivalent 505-973 Study Design in Epidemiology
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	Special Computer Skills Required: Proficiency with a Web browser and basic word processing skills. Resources provided to Distance students: Complete lecture notes, reading material and copies of the overheads used in the lectures will be provided on a Website that can be viewed and printed by the student. A set of reading material will be mailed to each student prior to the start of semester. An electronic forum service will be provided.
Coordinator:	Assoc Prof Mark Jenkins
Contact:	Centre for Molecular, Environmental, Genetic and Analytic (MEGA) Epidemiology Tel: +61 3 8344 0671 Email: epi-info@unimelb.edu.au OR Academic Programs Office Melbourne School of Population Health Tel: +61 3 8344 9339 Fax: +61 3 8344 0824 Email: sph-gradinfo@unimelb.edu.au
Subject Overview:	The majority of chronic diseases share a common risk factor: the family history for that disease. Epidemiologists can use families to assess the role of the interrelated genetic and environmental risk factors. This subject provides an introduction to epidemiological methods that are used to help identify genes associated with disease, and to estimate what proportion of the disease can be attributed to measured or unmeasured genetic factors. Concepts, methodologies, and interpretation of familial risk factors for chronic diseases are the major topics in this subject. Topics covered include introduction to population genetics, introduction to molecular genetics, design of family studies including both twin and pedigree studies, segregation analysis, linkage, association studies, estimating the magnitude of the gene effect on disease susceptibility, and genetic screening.
Objectives:	On completion of this subject, students should be able to: # understand that susceptibility to complex diseases is due to both genetic and environmental factors; # understand the relationship between familial aggregation of disease and genetic aetiology; # understand that genes can be altered in various ways with varying effects on molecular function;

	# understand the fundamentals and limitations of studies designed to identify genes that influence disease susceptibility; # determine the significance of disease susceptibility genes in the risk of disease; critically appraise a genetic epidemiology study; # appreciate that genetic epidemiology is a developing field with a high degree of statistical modelling; and understand a variety of techniques to find genes for disease using epidemiological studies.
Assessment:	Tutorial participation (10%), one written assignment of 2,000 words (40%) due mid-semester and one written assignment of 2,500 words (50%) due end semester.
Prescribed Texts:	NoneSpecial Computer Requirements: For students studying via Distance Mode – Access to computer with a Web browser and print access. A university e-mail account is also required. Lecture notes will be provided via internet and tutorials will be conducted over the internet
Recommended 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:	-
Links to further information:	http://www.sph.unimelb.edu.au
Notes:	This subject is a Group 1 elective in the Master of Public Health.
Related Course(s):	Master of Epidemiology Master of Science (Epidemiology)
Related Majors/Minors/ Specialisations:	Epidemiology and Biostatistics