

## **Genetic Epidemiology (Elective)**

<b>Credit Value:</b>	10
<b>Course Organiser:</b>	Dr Niall Anderson
<b>Course Instructor(s):</b>	Dr Niall Anderson, Professor Harry Campbell Professor Paul McKeique, Dr Jim Wilson
<b>Time:</b>	Semester 2 Weeks 6-11 Tuesday & Friday 11:10-13:00
<b>Short course description:</b>	This course will provide an introduction to the basic principles of genetic epidemiology applied to complex diseases of public health importance. The course will introduce sufficient basic concepts in genetics to motivate the later explanations, and then consider the range of study designs used in practice and the rationales for these. Appropriate statistical methods will be outlined and other issues such as public on-line sources of genetic data and ethical principles will also be discussed.
<b>Course prerequisites:</b>	Introduction to Research Ethics Statistics & Analysis
<b>Aim:</b>	To introduce students to some basic concepts of genetics, and then describe the key study designs and methods used in the investigation of the genetic causes of common, complex diseases that impact on public health.
<b>Learning objectives:</b>	<ul style="list-style-type: none"><li>• Understand basic concepts in genetics such as recombination, PCR, microsatellite markers, etc.</li><li>• Understand the concept of complex, as opposed to Mendelian, diseases.</li><li>• Be familiar with commonly used study designs, such as association and nuclear family designs, and understand strengths and weaknesses of these.</li><li>• Understand the principles of the appropriate methods of statistical analysis for these designs.</li><li>• Be able to evaluate and assess published literature in genetic epidemiology.</li><li>• Have exposure to on-line sources of genetic data.</li></ul>
<b>Teaching methods:</b>	The course will consist of a series of ten 1 hour lecture sessions, along with supporting tutorials.
<b>Assessment:</b>	Written examination, consisting of short answer questions.