**Models of the Epidemiology and Control of Infectious Diseases**

In recent years our understanding of infectious-disease epidemiology and control has been greatly increased through mathematical modeling. Insights from this increasingly-important, exciting field are now informing policy-making at the highest levels, and playing a growing role in research. The transmissible nature of infectious diseases makes them fundamentally different from non-infectious diseases, so techniques from 'classical' epidemiology are often invalid and hence lead to incorrect conclusions - not least in health-economic analysis.

Mathematical modelling now plays a key role in policy making, including health-economic aspects; emergency planning and risk assessment; control-programme evaluation; and monitoring of surveillance data. In research, it is essential in study design, analysis (including parameter estimation) and interpretation.

With infectious diseases frequently dominating news headlines, public health and pharmaceutical industry professionals, policy makers, and infectious disease researchers, increasingly need to understand the transmission patterns of infectious diseases, to be able to interpret and critically-evaluate both epidemiological data, and the findings of mathematical modelling studies. Recently there has been rapid progress in developing models and new techniques for measurement and analysis, which have been applied to outbreaks and emerging epidemics, such as Influenza A (H1N1) and SARS. A simple but powerful new technique for assessing the potential of different methods to control an infectious-disease outbreak was recently developed by course presenters.

Since 1990, this course has "demystified" mathematical modelling and kept public-health professionals, policy makers, and infectious disease researchers up-to-date with what they need to know about this fast-moving field, taught by individuals who are actively engaged in research and who advise leading public health professionals, policy-makers, governments, international organisations and pharmaceutical companies, both nationally and internationally, including on pandemic influenza, SARS, HIV, foot-and-mouth disease.