



## Modelling and Analytics Training for Health and Other Services (MATHOS)

### PROGRAMME OUTLINE

The purpose of the MATHOS programme is to enable those engaged in, or supporting, commissioning or provision of health and social care to appreciate the value of modelling and analytics in strategic and tactical planning and become familiar with appropriate methods.

Seven courses are proposed covering qualitative and quantitative modelling methods, ranging from problem structuring to statistical techniques including simulation.

### LEARNING OUTCOME

We expect, at the end of the programme, that the participants will be able to use the most relevant approaches and to commission and critique a range of techniques.

### PROGRAMME STRUCTURE

The programme comprises currently a set of seven day courses, which may be taken independently:

1. Structuring Problems
2. Service Redesign using Simulation
3. Forecasting
4. Predictive Modelling
5. Making Sense of Data *New in 2013*
6. Decision Making and Risk *New in 2013*
7. Advanced Forecasting *New in 2013*

“Structuring Problems” deals with the first steps in any modelling exercise.

### COURSE DELIVERY

In general each course of the programme is associated with one day's face-to-face training in our Central London premises supported by additional material and resources. Some of these courses might be bundled together to be delivered for instance over a week [e.g. three or four courses in a week]. *We can also deliver customized in-house courses.*

### Course Format

A mixed structure for each course is adopted. There is a blend of sessions introducing the topics and techniques of interest and use examples to illustrate key themes, and of sessions engaging participants in interactive and hands-on experience of tools and techniques drawing on case material of direct relevance to commissioning or provision of services. Depending on the nature of the topics covered, the hands on sessions are in a PC lab using appropriate software.

### Pre-requisites

Overall in order to take part in this course, potential participants will need mathematical skills to include simple algebraic manipulation (GCSE grade B), some understanding of basic statistical techniques and a reasonable competence with spreadsheets. However, some courses might have a higher quantitative (quant) or IT content than others, as the table below indicates.



	Quant	IT
1. Structuring problems	Low	Low
2. Service Redesign using Simulation	Low	Medium
3. Forecasting	Medium	Medium
4. Predictive Modelling	Medium	Medium
5. Making Sense of Data	Medium	Low
6. Decision Making and Risk	Medium	Medium
7. Advanced Forecasting	Medium	Medium

### Software Support

Where possible the course will make use of software which is generally available to participants (e.g. Microsoft Excel) rather than require new software acquisition. The software needed will depend on what is actually taught in the course. As a School of Electronics and Computer Science (ECS), we have state-of-the-art PC laboratories with all relevant software, which might include: *Microsoft Excel*; *Statistical software: SPSS, R or possibly SAS; Simul8, @RISK, etc.*

### Programme tutors

The programme is led by Professor Thierry Chausalet, Dr Salma Chahed, Philip Worrall, Saiful Islam, Banafsheh Khosravi and others from the Health and Social Care Modelling Group ([www.healthcareanalytics.co.uk](http://www.healthcareanalytics.co.uk)), with expertise in operational research, operations management, statistics, and simulation applied to health.

### Programme schedule: September 2013

Each course typically starts at 10:00 (registration from 9:30) and end by 16:30/17:00. Various dates are available for each training course:

Course	Dates
1. Structuring problems	04/09/2013
2. Service redesign using simulation	06/09/2013
3. Forecasting	09/09/2013
4. Predictive modeling	10/09/2013
5. Making Sense of Data	05/09/2013
6. Decision Making and Risk	11/09/2013
7. Advanced Forecasting	12/09/2013

Morning sessions are normally dedicated to a general introduction of the topic and basic methods and techniques while afternoon sessions are focused on more advanced methods and hands-on activities. However, most courses will include hands-on activities throughout the day.

### Course fees

Fees: £350 per course including lunch and refreshments. Discounts may be available for multiple courses (3 or more) and/or group bookings – please enquire. *Due to limited capacity, early registration is advised.*

### FOR MORE INFORMATION

#### About the courses content, please contact:

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#### On how to apply, please contact:

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