

Design Principles for Formulation and R&D Methodology

De Montfort University, School of Pharmacy

From March 2015

15 credits

This module is designed to give an overview of the important concepts associated with experimental design and research methods. One of the best ways to learn experimental design is by application. The module draws analogies between improving industrial processes with every day generic examples. Students are actively encouraged to take part in improving a chemical process using a simulation program provided by GSK. The module shows how to work with data to find useful new insights. It distinguishes between determinism and variation, and introduces the idea of the transfer function as a model for mapping 'input' variables to 'output' variables. It highlights the fact that all models involve assumptions that need to be subject to scrutiny before results that look scientific are accepted.

Delivery Method

E-learning/distance learning module with video lectures and online tutorials.

Module Content

The strategy for experimentation using DoE will be discussed following the steps below:

- Define the goal for the study
- Identify the critical factors
- Select factor ranges
- Choose key responses e.g. yield, selectivity
- Choose the most appropriate experimental design
- Implement design
- Analyse the results and interrogate the model
- Verify model

The module aims to introduce generic research design principles and research methods in order to provide a thorough grounding in scientific areas of research, from experimental design, through data collection and presentation of data, to data analysis and the writing up of research results.

Contact

To register please contact Helen Murray, HE Project Development Manager

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Eligibility

Qualifications

A minimum 2:2 degree or equivalent in a chemical, biological or physical science, including (though not exclusive to) chemistry, biology, chemical engineering, engineering, pharmacy, pharmaceutical science, or physics.

Alternative experience

Portfolio of professional and/or academic qualifications of equivalent standing to an Honours degree .

Learning Resources

- Video recorded lectures, Word and PowerPoint documents are available online
- Face-to-face workshops at DMU campus (Umetrics and JMP software will be available to all students enrolled into the course – DMU's licence)
- Self-directed studies – online supplementary material.

Registration

Registration closes 6th March 2015

Costs

The cost of this module will be £1100 per person. Please note: The module will be available subject to a minimum number of registrations being received.