



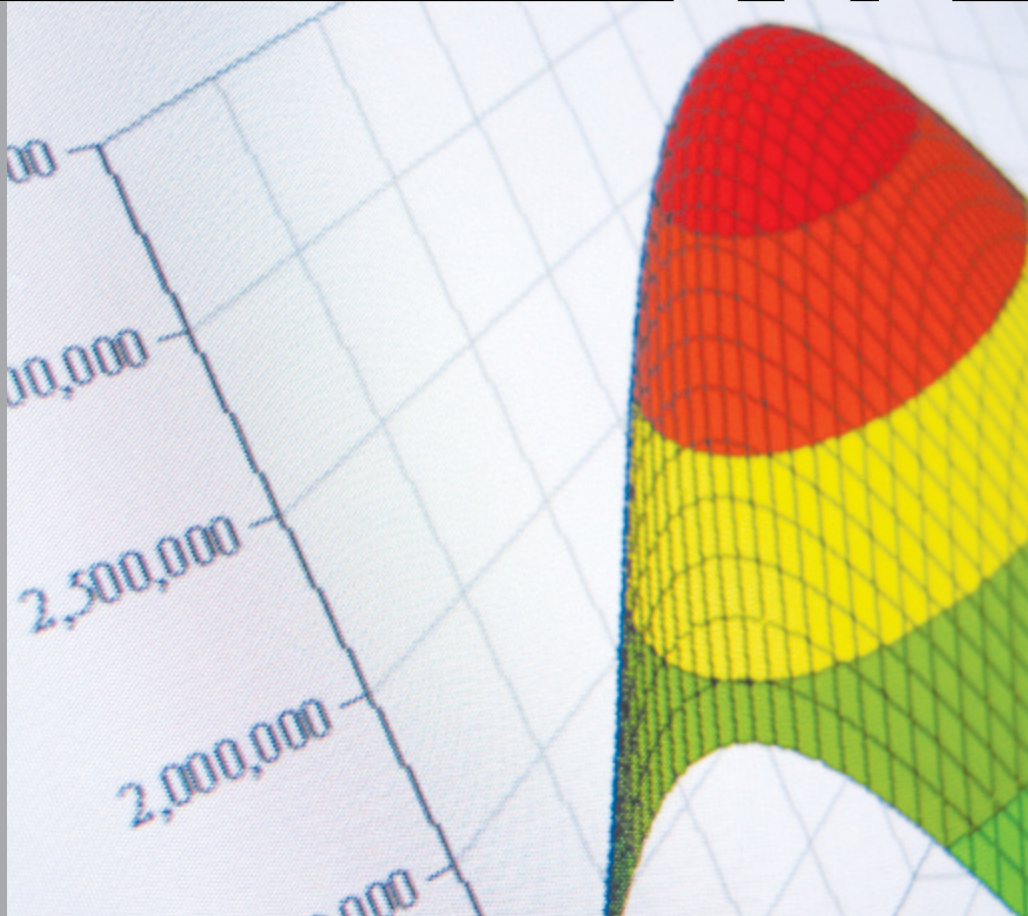
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Learn how experimental design techniques can be used to rapidly understand and optimise bioprocess performance.

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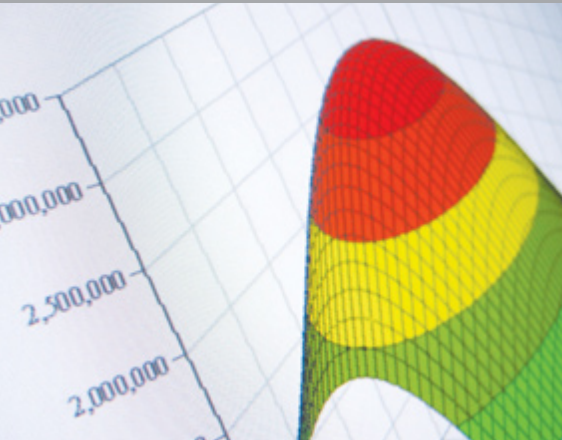
## Design of Experiments for Bioprocess Optimisation

16 – 18 MARCH 2009



# Design of Experiments for Bioprocess Optimisation

16 – 18 MARCH 2009



This module shows practitioners how experimental design techniques can be used to rapidly understand and optimise bioprocess performance. It provides managers with methods to ensure the whole bioprocess sequence is operating robustly and development budgets are used effectively. Training is focused on the hands on use of DoE software rather than underlying statistics. Bioprocess case studies, supported by a series of introductory and expert lectures will enable you to:

- Generate appropriate experimental designs within fixed research budgets and timescales.
- Ensure analytical methods can be validated and provide reliable data for process evaluation.
- Rapidly screen and optimise different fermentation media and operating conditions.
- Obtain the highest yield of active product throughout your downstream process sequence.

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**£1300**

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Register and pay before  
27 February and only pay £1200  
– save £100!

## Monday 16 March

- Introduction to Module and Design of Experiments
- Introduction to Experimental Design Techniques and Software
- Case Studies: Analytical Method Development (OFAT vs DoE)
- Industrial Analytical Method Validation Using DoE

## Tuesday 17 March

- Screening and Optimisation of Microbial Fermentations
- Case Study: Fermentation Process Screening
- Case Study: Fermentation Process Optimisation and Scale-Up
- Application of DoE in Mammalian Cell Culture Process Development

## Wednesday 18 March

- Case Study: Primary Product Recovery by Microfiltration
- Optimisation and Validation of Chromatographic Steps for Antibody Purification
- Protein Refolding, Stabilisation and Formulation

- Bioprocess Management and Quality Benefits of DoE
- Discussion Forum

*Module Leader:* Gary Lye, UCL.

*Teaching Staff:* Frank Braganz, UCL; Daniel Bracewell, UCL; Paul Dalby, UCL.

*Previous Expert Speakers\*:* Samantha Dowse, Emergent Biosolutions; Craig Gershater, Cambridge Bioprocess Management; Ian Macpherson, PRISM Training and Consultancy; Jim Mills, Xenova Biomanufacturing; Tony Newcombe, Protherics.

*\*Industrial expert speakers for this module will be confirmed by January 2009*

*A social networking event will be held for delegates and speakers*

Course costs include materials, lunches and refreshments. Accommodation is not included, but we have negotiated special rates at nearby hotels. Details will be sent with registration pack.

University College London reserves the right to cancel any module which does not attract sufficient interest up to 48 hours before the start of the module. Delegates are responsible for the arrangement and payment of their own travel and accommodation. University College London claims no responsibility for delegates' commitments made with travel agencies and hotels in the event of a module being cancelled.

Data Protection Act (1998): under the confines of this Act, MBI® Training Programme will only use the information provided to inform you of MBI® and the Department of Biochemical Engineering activities. Your personal information can be removed within one month of receipt of a written request from you. Please contact MBI® Training Programme.



### Special offer

Complete an MBI® module and we'll give you a voucher which can be used for your own or a colleague's use towards the cost of a future MBI® course!

See voucher for terms and conditions.

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For up-to-date information on all of the courses in the MBI® Programme, visit [www.ucl.ac.uk/biochemeng/mbi](http://www.ucl.ac.uk/biochemeng/mbi)

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# Registration form

- Please register me for the MBI® Programme Module  
*Design of Experiments for Bioprocess Optimisation*, 16 – 18 March 2009.
- Please send me information on your other modules  
(tick appropriate boxes overleaf).

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Title

First name

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Surname

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Company

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Address

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Post code

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Country

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Telephone

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Fax

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Email

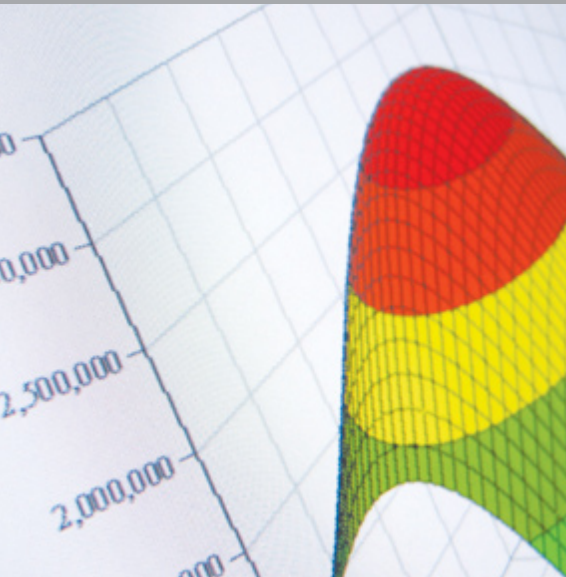
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Full payment must be received prior to the commencement of the course. Invoice and payment information will be sent upon receipt of registration. Please return this form to the MBI® Administrator, The Advanced Centre for Biochemical Engineering, University College London, Torrington Place, London WC1E 7JE.

## Course dates 2008 – 9

- Principles of Fermentation Processes  
29 September – 1 October 2008
- Rapid Fermentation Process Design: From Development to Manufacture  
13 – 15 October 2008
- Challenges & Opportunities in Biocatalysis  
27 – 29 October 2008
- Primary Recovery  
10 – 13 November 2008
- Chromatography  
24 – 27 November 2008
- Mammalian Cell Processes  
2 – 4 February 2009
- Stem Cell a Regenerative Medicine Bioprocessing  
16 – 18 February 2009
- Validation of Bioprocesses  
2 – 5 March 2009
- Design of Experiments for Bioprocess Optimisation  
16 – 18 March 2009
- Effective Biopharmaceutical Development & Manufacture  
11 – 13 May 2009
- Bioprocess Design & Economic Evaluation  
1 – 4 June 2009
- Bioprocess Facility Design  
22 – 25 June 2009





# About the MBI® Programme

The Modular Training for the Bioprocess Industries Programme (MBI®) is run by the Department of Biochemical Engineering at UCL. It comprises a series of UCL-accredited short courses in bioprocessing, designed specifically for industrialists, that can be taken as stand-alone modules or can be combined for Certificate, Diploma or Masters qualifications.

If you would like further information about the MBI® Programme or other Bioprocess Leadership Activities at the Department of Biochemical Engineering, please contact us – we will be more than happy to advise you.

Dr Karen Smith  
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