The Institute Biotechnology Sciences Delft-Leiden (BSDL-EDU) constitutes a joint initiative in biotechnological post-graduate education of Delft University of Technology and Leiden University and is coordinated from the department of Biotechnology of Delft University of Technology.

BSDL-EDU was founded in 1987 and has since then very successfully organised various types of postdoctoral education: the Advanced Course Quality Management in Pharma and Biotech, the PDEng programmes and the Advanced Courses in biotechnology. The Advanced Course Quality Management in Pharma and Biotech was developed by BSDL-EDU and is currently organised by PAO Farmacie. The PDEng programmes are special two-year postgraduate programmes that are aimed at those who wish to tailor their own specialisation to the needs of multidisciplinary biotechnological research and design, and lead to the degree of Professional Doctorate in Engineering. Originally developed by BSDL-EDU, these programmes are now hosted by the 3TU School for Technological Design / Stan Ackermans Institute.

Currently BSDL-EDU offers various Advanced Courses covering the multidisciplinary spectrum of biotechnology:
- microbial physiology and fermentation technology
- biocatalysis and protein engineering
- bioprocess design
- downstream processing
- environmental biotechnology
- genomics in industrial biotechnology
- metabolomics for microbial systems biology

Further information
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Address
Institute Biotechnology Studies Delft-Leiden
Department of Biotechnology
Julianaan 67
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The advanced course “Metabolomics for Microbial Systems Biology” aims at teaching state of the art methods of quantitative metabolism in both industrial and academic research professionals. The course provides basic working knowledge in some biotechnology, biochemistry or biology with a sound background in quantitative metabolomics and in vivo analysis to familiarize the participants with the methodology. The course will handle parameter identification of metabolic models. To this end, the course is set up as an alternating program of expert lectures and exercises.

Exercise topics will be presented to the students. In order to obtain an understanding about potential techniques and practical handling of the topic, the students will be divided into small teams which will be presented with the numerical computing experience. The exercise topics will be presented to the students using the numerical computing environment MATLAB. Knowledge of MATLAB is needed. A tutorial for learning the required MATLAB knowledge will be sent prior to the course.

Monday, July 11th

09.00 Development of quantitative analysis of metabolites using GC isotope dilution mass spectrometry
Reza Seifar
10.45 Introduction to metabolic flux analysis
Katharina Nöh
11.30 Lunch
13.30 How imaging metabolites and metabolic pathways in cancer tissues integrates growth rate regulation with amino acid and fatty acid anabolism
Alejandro Cifuentes
14.15 Perturbation strategies for estimation of in vivo kinetic balances
Katharina Nöh
15.45 Evaluation of the course
Liam McDonnell
17.30 Social drink and buffet
Peter Droste

Tuesday, July 12th

09.00 Regulation of metabolism: navigating between transient states
Katharina Nöh
10.00 Setting up a kinetic model using mechanistic enzyme kinetics
Aljoscha Wahl
15.45 Foodomics
Greg Bokinsky
17.15 Octave introduction / Visit tour
Marco Oldiges

Wednesday, July 13th

09.00 Regulation of metabolism: navigating between transient states
Katharina Nöh
10.45 Introduction to metabolic flux analysis
Katharina Nöh
11.30 Lunch
13.30 How imaging metabolites and metabolic pathways in cancer tissues integrates growth rate regulation with amino acid and fatty acid anabolism
Alejandro Cifuentes
14.15 Perturbation strategies for estimation of in vivo kinetic balances
Katharina Nöh
15.45 Evaluation of the course
Liam McDonnell
17.45 Farewell drink

Accommodation

Hotel accommodations can be arranged at your request via Jakob.VanHoutteL@Leiden, the buffer can be obtained at the advanced course websites. The accommodation will be located in the centre of the city.