Advanced Course

**GENOMICS IN INDUSTRIAL BIOTECHNOLOGY**

27 - 31 October 2014
This Advanced Course is aimed at both participants from industry who want to update and expand their theoretical knowledge and practical insight in this field and at participants from universities and research institutions with a wish to evaluate practical implications of theoretical knowledge.

It is intended for postgraduates (MSc level or equivalent experience), with a sound background in microbiology, molecular biology, biochemical engineering, and a basic working knowledge of systems biology. Having some basic insight into one or more of the genomics technologies or bioinformatics is an advantage, but certainly is an asset.

Who should attend?

This intensive, highly-intensive, one-week course provides a full overview of the possibilities and challenges of genomics in the field of industrial biotechnology. A combination of expert lectures and hands-on activities ensures active participation. The participants will receive the course booklet, including the presentation of the lectures, as an electronic file. The course booklet will be written in English.

Lectures

Expert lectures will be taught by renowned scientists from both Delft University of Technology as well as universities and companies from all over the world. They will focus on a variety of themes:

• Genomics sequencing and analysis
• Transcriptomics (including RNA sequencing)
• Proteomics
• Metabolomics
• Bioinformatics
• Systems Biology
• Genomics in strain improvement
• Metabolic and evolutionary engineering
• Biotechnology, innovation and patents
• Microbiology

Examples from biotechnology industry

Hands-on

Two afternoons are reserved for hands-on activities in bioinformatics. These will focus on analysis of next generation sequencing data, massive data handling, statistics, interpretation and visualization of genomics data.

Course description

The Advanced Course on Genomics in Industrial Biotechnology aims at familiarizing industrial biotechnology research and development, and their utility in modern biotechnology research.

The course focuses on the integration and application of the molecular tools and concepts to provide the tools and understanding needed for the ethical and responsible application of genomics in biotechnology.

The goals of the course are to:

• Introduce the state of the art in genomics
• Discuss the application of genomics data
• Introduce the use of bioinformatics
• Interpret and model this experimental data
• Develop the ability to use mathematical tools and computer programs in genomics

Lectures

Expert lectures are taught by renowned scientists from various universities, as well as companies and biotechnology institutes with a wish to extend their theoretical knowledge. The course is taught in English.

Duration & Location

This Advanced Course will be given on

Monday, October 27 - Friday, October 31, 2014

The course will be held at

Hampshire Hotel Delft Centre
Kooppoortplaats 3
2612 RR Delft
The Netherlands
+31 (0)15 212 2125
www.hampshirehotelcentrre.nl

The fee is € 3000.- if payment is received before 15 September 2014.

Fee & Registration

Ticketing information:

The course fee is € 3000.- if payment is received before 15 September 2014.

Early bird fee: € 2750.- if payment is received before 15 September 2014.

The course fee is: € 3000.- if payment is received after 15 September 2014.

This course does not have a selection procedure. Please visit our website or email us to receive information on standard hotel accommodations.

Diet wishes

Early bird fee: € 2750.- if payment is received before 15 September 2014.

Refund policy:

A 25% registration fee will be charged for all cancellations after 15 September 2014.

Pre-registration:

This course does not have a selection procedure. Please visit our website or complete and return the attached form if you are interested to attend the course or would like to receive information on standard hotel accommodations.

Program, 27 October - 31 October 2014

Monday, October 27, 2014

Theme: Genomics Sequencing & Analysis

08.45 Registration
13.00 Introduction
13.15 Metabolomics II: Metabolite measurement
13.45 Hands-on workshop: Metabolomics
15.15 Photosynthesis and respiration
15.45 Evolutionary engineering and inverse metabolic engineering
16.15 From raw data to assembled genome
19.30 Welcome
20.00 Dinner
21.00 Course dinner

Tuesday, October 28, 2014

Theme: Technology Review I: Proteomics

09.00 Introduction to Protein Analysis
13.15 Exploring biodiversity: QTL analysis
15.30 Exploring biodiversity: QTL analysis
16.00 From raw data to assembled genome
09.00 Introduction to Metabolic Engineering
09.15 From raw data to assembled genome
11.30 Analytical tools
13.30 Bioinformatics, data handling & visualization
15.15 Genomics of filamentous fungi
15.45 Predicting genes and genomes
16.15 Predicting genes and genomes
16.45 Predicting genes and genomes
18.00 Further analysis of genome and proteome data
19.30 Further analysis of genome and proteome data
20.00 Dinner
21.00 Course dinner

Wednesday, October 29, 2014

Theme: Systems Biology

09.00 Introduction to genome-scale metabolic models
11.30 Metabolomics III: Metabolite measurement
13.30 Systems Biology
15.30 Systems Biology
16.00 Systems Biology
18.00 Systems Biology
19.30 Systems Biology
20.00 Systems Biology

Thursday, October 30, 2014

Theme: Regulation, legislation and patents

09.00 Introduction to Metabolic Engineering
13.00 Metabolic and evolutionary engineering
15.00 Exploring biodiversity: QTL analysis
17.30 Exploring biodiversity: QTL analysis
19.00 Course dinner
20.00 Course dinner

Friday, October 31, 2014

Theme: Novel molecular tools and automated strain construction

09.00 Introduction to Bioinformatics, data handling & visualization
11.30 Genome annotation
13.30 Computer-aided bioinformatics and evolutionary biology
15.30 Novel molecular tools and automated strain construction
17.30 Novel molecular tools and automated strain construction
19.00 Course dinner
20.00 Course dinner

Instructors:

Sacha van Hijum
Marcel van den Broek / Dick de Ridder
Ken Wolfe
Jean-Marc Daran
Jack Pronk
Pascale Daran-Lapujade
Hanna Schebesta
Mark Chadwick
Ralf Takors
Tony Turgeon
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Note: registration is handled by BSDL!