sartorius

Training Courses and Seminars 2019
Europe

turning science into solutions

The only person who is educated is the one who has learned how to learn ... and change."

Carl Rogers

Dear Reader,

welcome to our training program 2019.

You can choose from a broad range of training courses and seminars in the following areas:

Our training courses focus on methodology. They are open to all interested parties and give you objective and unbiased perspectives. Four training labs specially equipped for the applications are available for hands-on, practical exercises.

We look forward to motivating your interest and continuing our successful cooperation! We'll be happy to give you personalized advice!

Your Training Center Team

Miriam von Wilke Sandra Goldmann

Overview of Our Training Courses

Fermentation | Cell Culture Technologies

Downstream Processing

Filtration

Lab- | Quality Management

Process Automation & Software

Fermentation | Cell Culture Technologies

An Introduction to Fermentation

Who should attend: Technicians and scientists without any or basic practical knowledge of cultivation of microorganisms or cell culture.

This course gives you an overview about the fundamentals of fermentation like typical applications, organisms, fermentation techniques and process control. Here you will learn the theoretical background knowledge to better understand your own fermentation processes and to perform them more confidently.

This course covers:

– Chemical and biological principles of fermentation

– Organisms and expression systems used for production

– Basics principles of bioreactor technologies: components and functions of a bioreactor

– Different fermentation modes (batch, fed-batch, continuous fermentation)

– Basic principles of process control: sensors and automation

– Performing simulation experiments on the virtual bioreactor

– Downstream processing: What comes after fermentation?

Course dates | venue:
on request
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:00 pm

Trainer:
Dr. Kristina Hoffmann-Astroth

Course fee:
EURO 1080,– (plus VAT)

Microbial High Cell Density Cultivation

Who should attend: Technicians and scientists who have a basic knowledge of microbiology, cultivation of microorganisms and molecular biology

We will work in small groups on High Cell Density Cultivations of *Escherichia coli* and *Pichia pastoris* at lab scale bioreactors. Different process strategies and projections for the supply of cells with the essential media components will be examined theoretically and demonstrated in the lab. The entire process chain from a customized expression system via directed information retrieval and evaluation with Design of Experiments tools to the point of the simulation of a cultivation in a virtual bioreactor will be activated, demonstrated or actively executed by the participants.

Key aspects will be the choice or construction of suitable expression systems, an efficient cultivation up to high cell densities (High Cell Density Cultivation – HCDC) with partly new cultivation strategies and the certain handling with different lab scale bioreactors. We will discuss the instrumentation of bioreactors, the design and analysis of experiments and the simulation of a cultivation.

Theoretical and practical aspects include:

– Cultivation and feeding strategies

– Composition of media for High Cell Density Cultivation

– Handling of bench scale bioreactors in HCDCs

– Advanced instrumentation of bioreactors

– Virtual bioreactor (simulation, process control)

– Oxygen demand and oxygen transfer

– Data acquisition and analysis, esign of experiments (DoE)

– Expression systems for *E. coli* und *P. pastoris*

Course date | venue:
28 – 30 August 2019 (English)
Hamburg, University of Applied Sciences

Course duration:
3 days

Start first day: 9:00 am
End last day: 3:00 pm

Trainers:
Prof. Dr. Gesine Cornelissen
Prof. Dr.-Ing. Volker C. Hass
Prof. Dr. Stephan Noll
Prof. Dr. Ernst A. Sanders

Course fee:
EURO 2530,– (plus VAT)

! Optimal ratio of one trainer to two participants, working together on a bioreactor

Basic Course Bioprocess Control

Who should attend: Technicians and scientists working in process development or production with a basic knowledge of fermentation and bioreactor technology.

This training delivers basic approaches for a practice-oriented control and automation of biotech processes. You will learn basic process control strategies in bioreactors and their application by using simulation experiments within a virtual bioreactor. *Saccharomyces cerevisiae* or animal cell cultures will be used as model organisms.

Topics:

– Basics of bioprocess control

– Dynamic behaviour of bioreactors

– Single-loop control

– P-, PI- and PID- controller settings

– Techniques and methods for adjusting P-, PI- and PID controllers

– Basics in process control of biological processes

Practical simulation experiments with the virtual training bioreactor:

– Temperature control

– Control of pO_2 | DO

– Sterilization cycle with control

– Process control of biological processes with several controllers

Course date | venue:
9 – 10 April 2019 (German)
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:00 pm

Trainer:
Prof. Dr. Volker C. Hass

Course fee:
EURO 1080,– (plus VAT)

Advanced Bioprocess Control

Who should attend: Technicians and scientists working in process development or production with knowledge in cell culture and bioreactor technology. Basic knowledge on bioprocess control is helpful, e. g. from basic course Bioprocess Control.

This training delivers theoretical and practical approaches for specific control of complex bioprocesses. You will learn advanced optimization and process control strategies as well as their application by using simulation experiments within a virtual bioreactor. Model organisms are *Saccharomyces cerevisiae* or animal cell culture.

Topics:

– Control of bioprocesses with P-, PI- and PID controllers

– Complex control loops

– Cascade control

– Complex control strategies for temperature, pO_2 | DO and pH in microbial processes or cell culture

– Specific process control strategies in microbial and cell culture processes

Practical simulation experiments with the virtual training bioreactor:

– Control of pO_2 | DO (PID)

– Control of pO_2 | DO by different controller settings

– pH value

– Fermentation | cultivation by multivariable control

Course date | venue:
11 – 12 April 2019 (German)
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:00 pm

Trainer:
Prof. Dr. Volker C. Hass

Course fee:
EURO 1080,– (plus VAT)

ambr® 15 Cell Culture Basic Training

Who should attend: Scientists and Technicians new to using ambr® 15 on a regular basis.

The primary focus of this course is to provide new users a comprehensive introduction to using the ambr® 15 software, in order that they can design and create their own experiments.

Attendees will be provided with the opportunity to learn about the general after-care of the system.

This course covers:

– Introduction to the ambr 15 cell culture system, labware and system care overview

– Experimental design, culture volume planning & process writing

– DoE tagging, pH offsets, inoculation steps, sampling

– Fault finding

– Data import, results functions, data management, proofreading

Course dates | venue:
15 – 17 January 2019 (English)
26 – 28 February 2019 (English)
2 – 4 April 2019 English)
21 – 23 May 2019 (English)
2 – 4 July 2019 (English)
6 – 8 August 2019 (English)
17 – 19 September 2019 (English)
22 – 24 October 2019 (English)
26 – 28 November 2019 (English)
10 – 12 December 2019 (English)
Sartorius Campus, Goettingen

Course duration:
3 days

Start first day: 9:00 am
End last day: 4:00 pm

Trainer:
ambr Application Specialist

Course fee:
Price on Application

Downstream Processing

Use of Crossflow Filtration in DSP (Part 1)

Who should attend: Technicians and scientists with or without previous knowledge in the field of crossflow filtration.

This course is designed to provide you with state-of-the-art knowledge about the use of crossflow filtration in the biopharmaceutical industry. It consists of two different parts which can be booked separately.

In Part 1 we will focus on the fundamentals of crossflow filtration and how to optimize crossflow filtration parameters for concentration and diafiltration.

Theoretical aspects include:

– Crossflow filtration theory

– Membrane characterization | membrane selection

– Factors influencing performance

– Operating conditions

– Cleaning-in-place (CIP)

– Applications in biotechnology

Practical exercises:

– Operational set-up of the systems

– Determination of clean water flux

– Cell retention by microfiltration (model solution)

– Concentration of a protein solution by ultrafiltration

– Removal of low-molecular weight contaminants by diafiltration

– Cleaning

Course dates | venue:
8 – 9 October 2019 (German)
3 – 4 December 2019 (English)
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:30 pm

Trainer:
Peter Schmidt
Tanja Rau

Course fee:
EURO 1080,– (plus VAT)

Use of Crossflow Filtration in DSP (Part 2)

Who should attend: Technicians and scientists with basic knowledge in the field of crossflow filtration.

Part 2 focuses on aspects of integrity testing of crossflow cassettes, steaming-in-place as well as high and effiecient product recovery.

Theoretical aspects include:

– Scale-up

– Integrity testing

– Optimal recovery process: Harvesting of product and draining of the system after filtration

– Multi-use vs. single-use

– Steaming-in-place (SIP) (optional)

– Use of cassettes and holders of different suppliers

Practical exercises:

– Integrity testing

– Efficient harvesting and draining of system

– Demonstration of Steaming-in-place (optional)

Course dates | venue:
10 October 2019 (German)
5 December 2019 (English)
Sartorius Campus, Goettingen

Course duration:
1 day

Start: 9:00 am
End: 4:30 pm

Trainer:
Peter Schmidt
Tanja Rau

Course fee:
EURO 675,– (plus VAT)

! Combination price, Part 1 and 2 Euro 1.550,– (plus VAT)

Single-use Process Systems

Who should attend: Technical staff with limited experience with single-use systems and consumables.

This course is focused on single-use technologies in downstream processing. Through lectures with following practical sessions you will learn how multiple systems work together to form a single-use process solution.

Theoretical aspects and practical excercises:

– Bag assemblies: bag types and material, design options and handling (bag unpacking & insertion into tanks)

– Mixing technology and efficiency: magnetically coupled vs. levitate impeller

– Sensor technology (types, location, calibration, accuracy)

– Process automation and safety features, hands-on session with:
  – Automated pH regulation
  – Automated sterilizing filtration

– Integrity testing of filters and bag leakage testing in single use systems

– Aseptic connections and disconnections of tubing

– Aseptic transfer of product across cleanroom barriers

Course dates | venue:
on request
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:00 pm

Trainer:
Dr. Ralf Schneider

Course fee:
EURO 870,– (plus VAT)

Filtration

Sterilization and Integrity Testing of Membrane Filters

Who should attend: Technicians and scientists with little or no previous knowledge in the field of filtration.

In this training course, you will acquire the necessary knowledge and practical skills in handling the filters employed for sterilizing filtration.

The theoretical aspects include:

– Basic principles of filtration
  – Depth filters | membrane filters
  – Hydrophobic | hydrophilic filters
  – Retention mechanisms

– Integrity testing of membrane filters
  – Regulatory requirements
  – Integrity test methods

– Physical principles of the steam sterilization of filter lines

Practical exercises:

– Manual determination of bubble point | diffusion

– Automated integrity testing
  – Bubble point test | diffusion test
  – Integrity testing of hydrophobic filters using the water intrusion test (WIT)

– Trouble shooting

– Hands-on exercises for in-line steam sterilization of filter cartridges

Course date | venue:
5 – 6 November 2019 (German)
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:30 pm

Trainers:
Dr. Mathias Siebner

Course fee:
EURO 1080,– (plus VAT)

Filter Optimization and Scale-up

Who should attend: Technicians and scientists with little previous knowledge about the field of filtration.

There is always room for improvement in any process. Reducing costs per liter, improving yield and implementing efficient process times while increasing product and process reliability are the major success factors for any company. This course can help you to find the optimal process solution for your specific application.

Theoretical aspects include:

– Depth filters | membrane filters

– Construction and formats

– Filter clogging mechanisms

– Selection of pre- and final filter materials

– Evaluation of the test results

Practical exercises:

– Constant flow and constant pressure trials

– Pre- and final filter optimization trials

– Small scale filterability trials

– Confirmation of test results with small pleated filter elements

– Introduction to Zero-T software

– Scale-up calculations

Course date | venue:
17 September 2019 (German)
Sartorius Campus, Goettingen

Course duration:
1 day

Star: 9:00 am
End: 4:30 pm

Trainer:
Dr. Mathias Siebner

Course fee:
EURO 675,– (plus VAT)

Lab- | Quality Management

Balances as Inspection, Measuring and Test Equipment in the QM System

Who should attend: Lab managers, users and quality assurance staff working in production and control.

The incorporation of balances into quality assurance systems (e.g. DIN EN ISO 9000: 2000, GMP, GLP, ISO 17025) is of crucial importance for your company or lab. Balances used as inspection, measuring and test equipment must be tested at appropriate intervals to ensure their proper functioning and process capability. The test results must be documented in suitable form.

This course covers:

– Definition of terms, interpretation of metrological data

– Proper selection and the correct handling of balances as well as calibration weights

– Detecting and minimizing factors affecting balances and weighing samples

– Practical measurements on laboratory balances under supervision

– Inspection, measuring and test equipment monitoring; the specific requirements of DIN EN ISO 10012

– Equipment qualification DQ, IQ, OQ, PQ

– The use of non-automatic balances and balances in legal metrology

– Weights, weight testing and certification

– Calculating the measurement uncertainty on electronic balances according to EURAMT cg18

– Determination of the operating range and smallest desired net weight according to USP <41>

Course dates | venue:
26 – 27 February 2019 (German)
24 – 25 September 2019 (German)
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 8:30 am
End last day: 4:30 pm

Trainer:
Harald Kallenbach

Course fee:
EURO 905,- (plus VAT)

Calibrating Pipettes

Who should attend: Lab techs and staff responsible for quality assurance.

This course teaches practical knowledge on the subject of pipette calibration, weighing technology and volumetric measurement. After the course, participants will be able to calibrate piston-operated pipettes on their own. You can bring your own pipettes and calibrate them!
Gravimetric calibration of piston-operated pipettes within the scope of inspection, measuring and test equipment monitoring according to standards DIN EN ISO 8655, ISO 17025 and DKD-R 8-1.

This course covers:

– Basics of gravimetrical pipette calibration

– Criteria for inspection, measuring and test equipment monitoring

– DIN EN ISO 8655 – Implementing the standard

– Requirements according to ISO 17025 and DKD-R 8-1

– Selection and proper handling of balances as inspection, measuring and test equipment

– Setting up a calibration workplace, minimizing interference factors

– Practical preparation and performance of calibrations

– Working with calibration software

– Establishing test intervals, traceability, documentation

– Handling and cleaning pipettes

– Ergonomics and pipetting

Course dates | venue:
28 February 2019 (German)
26 September 2019 (German)
Sartorius Campus, Goettingen

Course duration:
1 day

Start: 8:30 am
End: 4:30 pm

Trainer:
Harald Kallenbach

Course fee:
EURO 650,- (plus VAT)

Practical Testing of Balances

Who should attend: Staff working in service and maintenance departments.

In this practice-related training course, you will learn how to test modern and older balances at the place of installation, how to optimize measured results and do your own trouble shooting. The knowledge gained will help you enhance the measuring accuracy and operability of your balances.

The theoretical and practical aspects include:

– Basics of weighing technology, the most important parameters of a balance

– Choosing and using the right calibration weights; calibration and adjustment procedures

– Detecting and minimizing impact factors and interference at the workplace

– Evaluating and optimizing weighing stations

– Adapting applications software and weighing operating systems on laboratory balances and industrial scales

– Error detection, first aid measures, practical tips

Course dates | venue:
25 February 2019 (German)
27 September 2019 (German)
Sartorius Campus, Goettingen

Course duration:
1 day

Start: 8:30 am
End: 4:30 pm

Trainer:
Harald Kallenbach

Course fee:
EURO 650,– (plus VAT)

Individual Training on Moisture Analysis (Thermogravimetry)

Who should attend: Laboratory managers and technical staff (with or without previous experience in thermogravimetry)

Individual training on the use of thermogravimetric methods for moisture analysis of different materials.

The course content can be adapted to provide an individual combination of subjects for a customized learning experience.

Suggested subjects:

– Definitions of material moisture

– The basics of thermogravimetry

– Reference methods

– Sample preparation

– Applications for individual areas

– Hands-on training

– Troubleshooting

Course dates:
on request

Language of Instruction:
Choice of English
or German

Course duration:
1 day

Seminar Taught by:
Sabrina Peisler
Harald Kallenbach

Course fee:
EURO 650,- (plus VAT)

Mass Metrology – How to work with weighing equipment in the field of high end mass determination

Who should attend: Metrologists of Mass Calibration Labs, Mass Calibration Lab managers, employees of Mass Calibration Labs

Calibration of weights (standards) requires a high degree of knowledge in weighing technology especially of Mass Comparators, as well as a profound knowledge on requirements of OIML R 111 and ISO 10012

You will gain knowledge about:

– Definition of terms, interpretation of metrological data

– Proper selection and the correct handling of high resolution balances and Mass comparators

– Practical measurements on high resolution balances under supervision

– Detecting and minimizing factors affecting Mass comparators

– Specific requirements of DIN EN ISO 10012

– International recommendation for mass determination: OIML R 111

  – e. g. ABA, ABBA methods

  – Magnetic properties of weights

– Software: ScalesNet

– Practical work

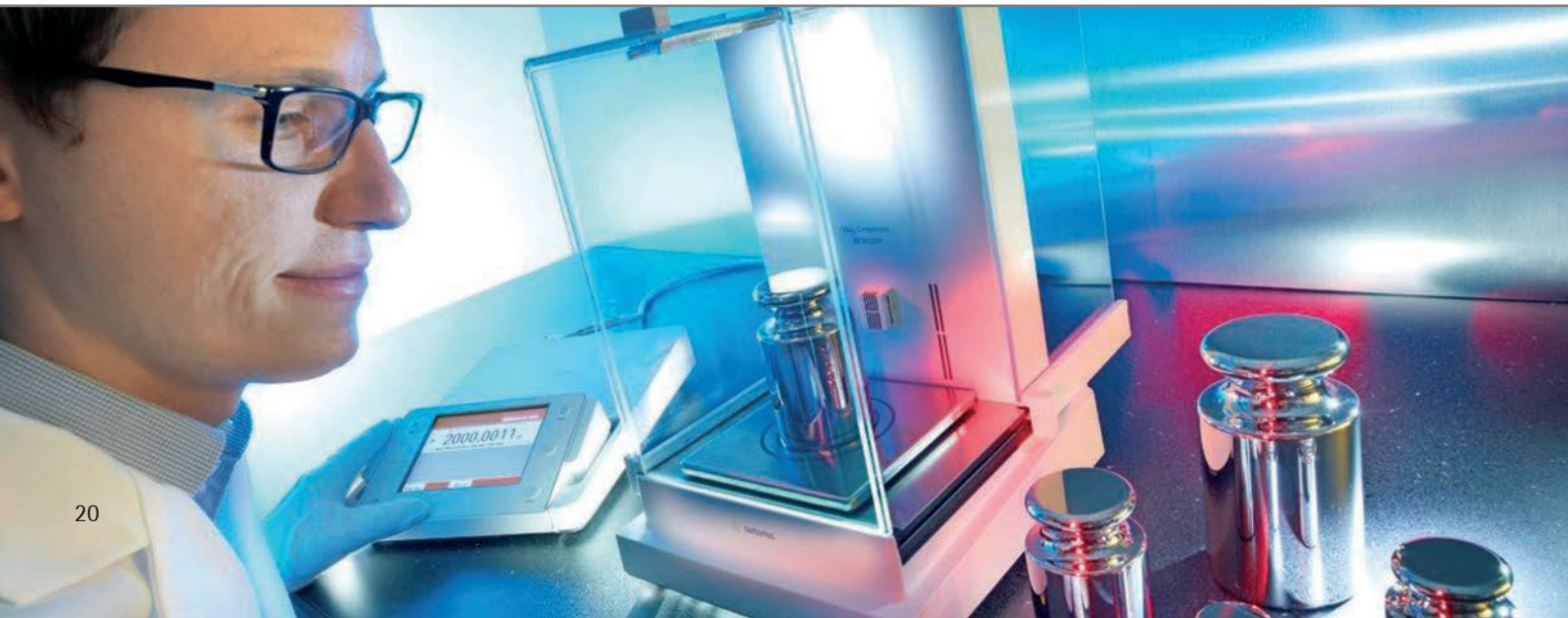
Course date | venue:
20 – 21 March 2019 (English)
Sartorius Campus, Goettingen

Course duration:
2 days

Start first day: 9:00 am
End last day: 4:30 pm

Trainer:
Harald Kallenbach
Tony Kowalski
Thomas Fehling

Course fee:
EURO 905,– (plus VAT)



Process Automation & Software

Basic Course BioPAT® MFCS | win User Training

Who should attend: Users who start to work with BioPAT® MFCS | win and who want to use it for daily business.

This training is primarily directed towards users starting with a new BioPAT® MFCS | win system. The target of the training is to convey handling with the Batch-Management, Sample-Data-Management, Plots and creation of fermentation documentation. The participants will have notebooks for hands-on training.

Topics included:

– Introduction into SCADA-System BioPAT® MFCS | win

– Shell and Service Control Program

– Data storing and Batch Management

– Process Visualization with Operator Service

– Batch Start, Batch Setup and Initialize defined Batch

– Process automation with S88 Recipes (Using and Modification)

– Off-line Data Management

– Evaluation by Plotting

– Reporting of Batches and Data export

– Help Documentation

Course dates:
on request

Language of Instruction:
Choice of English
or German

Course duration:
3 days

Trainer:
Mathias Reymann

Course fee:
EURO 2100,– (plus VAT)

Advanced BioPAT® MFCS | win

Who should attend: Experienced users of BioPAT® MFCS | win who want to generate their own programs and calculation.

This advanced training is primarily directed towards power users who want to create own control and feeding strategies inside BioPAT® MFCS | win with recipes and calculations. The target of the training is focused on extended and individualized functionality of BioPAT® MFCS | win, e. g. creation of event dependent processes by using the S88 recipe together with complex calculations in BioPAT® MFCS | win.

Topics included:

– Integration, Differentiation

– MIN, MAX Determination

– Moving Average, Timers

– If then Else Structures

– OUR, CER, RQ Calculation

– Exponential Feed

– PID Controllers and MFCS PID Control

– pO_2 Cascade Control (DO Control)

– Gravimetric Flow Control

– Fedbatch Fermentation with Gravimetric Flow Controllers

– Continuous Fermentation with Gravimetric Flow Controllers

– DO-Stat | pH-Stat

– k_La | Determination of k_La

Course dates:
on request

Language of Instruction:
Choice of English
or German

Course duration:
3 days

Trainer:
Mathias Reymann

Course fee:
EURO 2100,– (plus VAT)

BioPAT® MFCS 4 User Training

This training covers the basics to get started with the new SCADA software BioPAT® MFCS 4.

This training covers the basics to get started with the new SCADA software BioPAT® MFCS 4. During the first part you will learn to use the software for your daily work with focus on reliable data acquisition and the use of advanced capabilities to facilitate visualization and comparison of live and historical process data. During the training you will add and visualize offline process data and it will be demonstrated how to access non-directly measureable quantities to gain more insight into your process.
The aim of the second part of the training is to convey configuration and use of ISA-88 compliant recipes to implement sophisticated event based automation for reproducible processes. The concept of operations, phases and conditions will be explained in detail to let you make use of recipe automation in the most effective way.

Topics covered:

Getting started with BioPAT® MFCS 4

– Configuration of devices and units

– Process data acquisition and visualization

– Creation of new variables, online and offline calculations

– Visualization of calculated values and offline variables

– Charting of live and historical data

– Introduction into process automation with the Recipe Control Module

– Creation and modification of ISA-88 compliant recipes

– Operations and Phases | Branches and conditions

– Event and time-based transitions

– Execution of recipe controlled batch processes

Course dates:
on request

Language of Instruction:
Choice of English
or German

Course duration:
2 days

Trainer:
Mathias Reymann

Course fee:
EURO 1400,– (plus VAT)

BioPAT® MFCS | win – Manager Training

Who should attend: Users who are experienced users of BioPAT®MFCS | win or who are admininstrators.

This training is primarily directed towards administrators and experienced users of existing BioPAT® MFCS | win systems. The focus of this advanced training is on extended functionality of the software, e. g. creation of event dependent processes by using the S88 recipe approach. Furthermore comprehensive configuration of the system including integration into network environments is provided. The participants will have notebooks for hands-on training.

Topics included:

– Overview about BioPAT® MFCS | win and its basic functions (Operator Service Program, Data Management, Configuration options)

– Configuration of Process Units and Control Units

– PID Control and Applications

– User Management, 21 CFR Part 11 and Audit Trail

– Configuration Reports

– Update Configuration and Backup Copy

– Maintenance, System Recovery and System Utilities

– Processes automation with S88 Recipes

– Installation and Uninstallation of BioPAT® MFCS | win Server | Workstation

– BioPAT® MFCS | win Network Structure and Settings

– Security Settings

– Help-Documentation

Course dates:
on request

Language of Instruction:
Choice of English
or German

Course duration:
3 days

Trainer:
Mathias Reymann

Course fee:
EURO 2100,– (plus VAT)

BioPAT® MFCS | win – Crossflow Training

Who should attend: Users who start to work with BioPAT® MFCS | win and who want to use it for daily business.

This training is primarily directed towards users starting with a new BioPAT® MFCS | win system or using BioPAT® MFCS | win for their daily work with Crossflow systems. The target of the training is to convey handling with the Batch-Management, Sample-Management, Plots and creation of filtration documentation. Furthermore training for creation of calculations, profiles and using of recipes will be provided. For practical exercises the participants will have training notebooks for direct use.

Topics included:

– Crossflow filtration, filtration parameters

– Transmembrane pressure, Reynolds number, yield

– Introduction into SCADA-System BioPAT® MFCS | win

– Shell, Service Control Program

– Data storing and batch management

– Process visualization with Operator Service Program

– Off-line data management

– Evaluation by plotting

– Reporting of batches and data export

– Configuration of variables, controllers and calculations

– DCU sequences for filtration processes

– Configuration of equipment phases

– Update configuration und backup copy

– Automatization of filtration processes with S88 recipes

Course dates:
on request

Language of Instruction:
Choice of English
or German

Course duration:
2 days

Trainer:
Mathias Reymann

Course fee:
EURO 1400,– (plus VAT)

Inhouse Training

We'll be happy to hold any of our on-going training courses and seminars inhouse at your own
facilities. Of course, we can also put together complete new training courses for you! Let us know how we can help you to develop and implement a training concept that is right for you.

The benefits of our inhouse training include:

1. You get personalized training courses – designed according to your wishes and tailored to meet your needs.

2. You choose the dates and times for your training courses and seminars that suit.

3. A group of several colleagues can take part in the courses – all at the same time, without any added travel expenses.

4. The courses will be held using your own equipment and materials (e.g. cell lines). The knowledge gained can be put right into practice - on site!

Sartorius Stedim Biotech GmbH
Training Center
August-Spindler-Strasse 11
37079 Goettingen, Germany

Phone +49.551.308.4531

tc-europe@sartorius.com
or on the web at
www.sartorius.com

Training Laboratories

Training Center I, Technicum

Training Center I, Laboratory

Training Center II, Cell Culture

Training Center II, Molecular Biology

Trainers

Prof. Gesine Cornelissen studied biotechnology and is Professor of bioprocess development at the University of Applied Science in Hamburg. Her main research focus is on development, automation and optimization of bioprocesses.

Dr. Claudia Goldmann studied Biology at the University of Göttingen, worked in Academia and biopharmaceutical industry. She is a certified trainer.

Prof. Dr. Volker C. Hass studied process and biochemical engineering and worked at the Technical University of Hamburg- Harburg in the field of biological process engineering and control technology. From 2001 until 2012 he was professor of process engineering and systems dynamics at the Institute for Environmental and Biotechnology at the University of Bremen. Since 2012, he is professor of bioprocess engineering at the Furtwangen University of Applied Sciences.

Dr. Kristina Hoffmann-Astroth studied biology and biotechnology at the university of Münster and did her PhD at the Forschungszentrum Jülich focusing on microbial biotechnology. She has worked as a sales representative for a provider for clinical diagnostics. She joined the Sartorius Global Training Team as a trainer in 2016.

Harald Kallenbach has been employed with Sartorius for many years. He is responsible for training courses on weighing technologies.

Prof. Dr. Stephan Noll studied Microbiology at the University of Frankfurt, Gießen and Vancouver/Canada. After working in biotech and pharmaceutical industry he is professor for applied microbiology at HAW Hamburg since 2016. His focus area is molecular microbiology.

Sabrina Peisler works as specialist for determination of moisture content at Sartorius performing individual measurements and application optimization for customers. She is also a trainer for internal colleagues and customers.

Tanja Rau studied Biotechnology at the University of Cooperative Education in Riesa. During this period she was also working on several projects in the Sartorius Stedim Biotech Research and Development department. Afterwards she provided technical support for customers in the field as an application specialist for Purification Technologies over a period of 8 years.

Mathias Reymann is application specialist for MFCS and has been with Sartorius Stedim Biotech for many years.

Prof. Dr. Ernst A. Sanders studied chemistry in Hanover, earned his doctorate in Oldenburg and is professor for biological process engineering at the University of Applied Science in Hamburg. His main research focus is on fermentation and bioreactor technologies.

Peter Schmidt is an application specialist in crossflow filtration and has been with Sartorius for many years.

Dr. Ralf Schneider studied biotechnology at the University of Applied Sciences Weihenstephan and received a PhD in biochemistry from the University of Oxford. After four years of academic research at the Max-Planck-Institute in Dortmund he joined Sartorius in 2013. His focus is on single-use technologies and processes.

Dr. Mathias Siebner completed his chemistry studies at the Technical University of Braunschweig. Since 1997, he has been working for the Sartorius group in various positions in sales, marketing and product management. He is currently application specialist for static filtration and filter optimization.

How to find Sartorius

1. Sartorius Campus Headquarters
   Otto-Brenner-Strasse 20
   37079 Göttingen

P Sartorius Parking Lot
Access via Willi-Eichler-Strasse 28
Parking for visitors and employees

2. Sartorius Stedim Plastics GmbH
   Karl-Arnold-Strasse 21
   37079 Göttingen

3. Sartorius Application Center
   Marie-Curie-Strasse 7
   37079 Göttingen

4. Sartorius Service Center CE
   Distribo
   Groner Siekanger 1
   37081 Göttingen

5. Sartorius Off-Campus Site
   Telekom Building
   Philipp-Reis-Strasse 2A
   37075 Göttingen

Contact
Phone +49.551.308.0

Email
empfang.campus@sartorius.com

For more information about Sartorius, please visit
www.sartorius.com

Where to stay
1. Hotel Freizeit In
2. Hotel Rennschuh
3. Best Western Parkhotel Ropeter
4. Park Inn by Radisson
5. Intercity-Hotel
6. Gebhards Hotel
7. Eden-Hotel
8. Best Western Hotel am Papenberg

Registration

sartorius

Course Participant:

Name

Institute | Company

Street & House Number

City

State

Phone

E-mail:

Invoice Address (if different from the one above):

Name

Institute | Company

Street & House Number

City

State

I hereby register for the following seminar | seminars.
My registration is binding:

Title of First seminar

Course No. | Date | Venue

Title of Second Seminar

Course No. | Date | Venue

Title of Third Seminar

Course No. | Date | Venue

Areas of Interest | Questions | Remarks

Date | Signature

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Cancellations will be accepted if made in writing up to 30 workdays prior to the beginning of the course. After this time, the course fee is payable in full. However, registered participants always have the option to name a substitute attendee.

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Registrations must be submitted in writing. A written confirmation of the booking will follow. The fees will be invoiced after completion of the seminar.

Cancellations

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