



Getinge Applikon Academy

Fundamentals, Operation and Automation
in Bioreactor Systems

Course Summary

Fundamentals, Operation and Automation in Bioreactor Systems

Are you a graduate student, academic researcher or private industry professional? Are you interested in the management of Bioreactor Systems at laboratory or pilot scale, sensors and software for data acquisition and how to control your cultivation? This training is for you!

This theoretical-practical course aims to provide the necessary tools to achieve a proper scaling and control of biological processes using automated bioreactor systems and software. At the end of the course, attendees will be able to operate, care, clean and start up any biological process in a bioreactor, in addition to being familiar with the novel online monitoring technologies, data acquisition and control software used in bioreactor systems.

What is in it for you:

- Online training from any location on the world.
- A team of experts available for all your questions or challenges during the course.
- You will become an expert yourself when it comes to the fundamentals, operation and automation of bioreactor systems.
- A training certificate will be provided by Getinge staff and endorsed by the SMBB.

	Before August 6th	After August 6th
Professional Members	500 MXN	650 MXN
Student Members	300 MXN	400 MXN
Non-members	800 MXN	1000 MXN



»Deadline for registration: August 16th, 2021«

Registration

Registration takes place after payment. Payment by bank transfer to: Sociedad Mexicana de Biotecnología y Bioingeniería, A. C., CLABE: 012540001350010051, BBVA. Send your proof of transfer and full name of participant to: tesoreriaSMBB2020@gmail.com. For invoices, send your information to: facturacionSMBB2021@gmail.com

Program

10 hours of online training

August 31 2021	Subject	Description
08:00 - 08:10	Welcome	About Getinge and Getinge Applikon Academy program. (Spanish)
08:10 - 09:10	Fundamentals of screening and selection of microorganisms	Introduction to Bioprocesses, unit operations, isolation, selection and preservation of industrial interest microorganisms culture media design. (Spanish)
09:10 - 09:40	Hands-on (video) How to assemble a bioreactor	Assembly, disassembly, cleaning, bioreactor conditioning and sensor calibration. (English)
09:40 - 10:30	Hands-on (video) Sensor technologies	How to use different sensors / PAT technologies. (English)
September 07 2021	Subject	Description
08:00 - 08:45	Oxygen supply and demand in bioreactors	Description of volumetric oxygen transfer coefficient (kLa), OUR, OTR.
08:45 - 09:30	Hands-on (video) Gas transfer & kLa	Training on flow patterns and mixing times. Characterization of kLa at different agitation speeds. (English)
09:30 - 10:30	BioProjects	Case study on the process of supply, manufacture, validation and start-up of production scale bioreactors. (Spanish)
September 14 2021	Subject	Description
08:00 - 09:30	Control Loops and PID	Explanation of control loops in bioreactors, PID parameters, and cascade controls. (English)
09:30 - 10:30	Bioreactor Scale-up	Scale up, scale down and mixing. (English)
September 21 2021	Subject	Description
08:00 - 08:45	Advanced Culture Techniques	Process Automation, Batch, Fed-Batch and Continuous. (English)
08:45 - 09:30	Advanced Culture Techniques	Perfusion processes. (English)
09:30 - 10:15	Integrated Bioprocess Solutions	Applikon Innovations in Process Control, DoE/SCADA software, as well as process analytical technologies and autosampling achieve integrated platforms. (Spanish)
10:15 - 10:30	Course Evaluation	Quiz and course evaluation. (English)



Getinge is a global provider of innovative solutions for operating rooms, intensive care units, sterilization departments and for life science companies and institutions. Based on our firsthand experience and close partnerships with clinical experts, healthcare professionals and medtech specialists, we are improving everyday life for people – today and tomorrow.

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