

## Overview of pedagogical activities and achieved results in educational activities

### Lectures

Subject	Period	Number of semesters	Number of hours per week
Process Optimization	05/2013 – 07/2016	2	2
Introduction to Process Dynamics and Control	10/2013 – 02/2017	4	2
Process Performance Optimization	10/2013 – 02/2017	4	3/4
Introduction to Process Control	02/2018 – 06/2018	1	2
Selected Topics from the Theory of Automatic Control	02/2021 – 06/2023	2	2
Computer-based simulation	02/2021 – 06/2023	1	2
Dynamic Systems	02/2021 – 06/2026	4	2
Identification	02/2021 – 06/2026	4	2
Modeling in the Process Industry	09/2023 – 02/2026	3	2
Modeling and Control of Biotechnological Processes	02/2023 – 06/2025	2	2
Advanced Modeling and Simulations	02/2023 – 06/2026	1	2

### Seminars and laboratory exercises

Subject	Period	Number of semesters	Number of hours per week
Predictive Control	02/2010 – 05/2010	1	3
Batch Process Operations	10/2012 – 02/2013	1	1
Automatic Control Theory I	09/2017 – 02/2021	2	3
Automatic Control Theory II	02/2018 – 05/2018	1	3
Laboratory exercises on the basics of automation	02/2009 – 05/2009	1	4
Integrated management in the process industry	09/2009 – 12/2009	1	4
Informatization and Industrial Information Systems II	09/2010 – 12/2010	1	2
Operating systems	02/2011 – 05/2011	1	2

### Providing subjects with study materials

Subject	Stupeň	Typ materiálu
Process Optimization	Ing.	E-learning lectures and exercises
Introduction to Process Dynamics and Control	Bc.	E-learning lectures
Process Performance Optimization	Ing.	E-learning lectures
Predictive management	Ing.	Exercise instructions
Informatization and Industrial Information Systems II	Ing.	Exercise instructions
Operating systems	Bc.	Exercise instructions
Computer simulation	Bc.	E-learning lectures and exercises
Dynamic systems	Bc.	E-learning lectures and exercises

Identification	Ing.	E-learning lectures
Modeling in the process industry	Ing.	E-learning lectures

Period	Student	Title of work
2020 – 2023	Mojto Martin	Data-driven Design of Linear Soft Sensors
2023 –	Fáber Rastislav	Hybrid modeling and real-time optimization of processes
2024 –	Trautenberger Rudolf	Robust design of optimal experiments
2025 –	Lohani Ananya	Development of reliable and explainable models for industrial monitoring, optimization and control

### Supervised final diploma theses (14)

Period	Student	Title of work
2010	Černá Katarína	Creating a graphical user interface for global optimization
2010	Repčíková Ivana	Global and Dynamic Optimization of Processes
2010	Turayová Eva	Optimal management of liquid reservoirs
2019	Boroš Daniel	Two-level optimization methods
2020	Kintler Matej	Guaranteed identification and its use for hybrid modeling
2021	Gömöry Martin	Modeling and optimization of laboratory membrane separation operations
2021	Križan Darko	Software Sensors for Industry
2021	Mateáš Michal	Optimal design of dynamic experiments
2023	Bujdáková Martina	Data-based Input-output System Identification
2023	Mészárosová Tímea	Advanced Control of a Laboratory Distillation Column
2023	Mošková Zuzana	Optimization of RFID Chip Placement in a Tire
2024	Bíreš Martin	Modeling and Optimal Operation of an Alkylation Unit
2024	Ružička Matej	Modeling and Optimal Operation of a Forward Osmosis Process
2025	Micherda Marko	Advanced Control of a Laboratory Distillation Column

### Supervised final bachelor theses (7)

Period	Student	Title of work
2010	Jelemenský Martin	Optimal process control
2010	Petáková Lívia	Optimal process control
2018	Šatura Lukáš	Modeling and Optimization of Membrane Process Operation
2020	Smetana Mikuláš	Modeling laboratory membrane separation
2021	Mészárosová Tímea	Modeling a laboratory distillation column in gPROMS ModelBuilder
2023	Kruhliak Kateryna	Modeling and design of process control in the gPROMS ModelBuilder environment
2024	Gaborčík Jakub	Experimental operation of the membrane process

In Bratislava, on 31. 1. 2026

prof. Ing. Miroslav Fikar, DrSc.

.....  
name and signature of the institute director

.....  
signature of the applicant

prof. Ing. Lucia Bírošová, PhD.

.....  
name and signature of the vice-dean  
for pedagogical activities