



Course catalogue

TTF-PB310 Automation and Control Systems

Programme	Food Technology and Biotechnology
Level	Bachelor's programme
Academic year	III year
Semester	Spring Semester
ECTS credits	5 credits
Lecturers	Assoc. Prof. Dr.sc Vesna Knights
Language	Macedonian/English

Objective	<ul style="list-style-type: none">• The course objectives are for the student to have knowledge of the evaluation of the basic concepts of automation and control of technical systems and structural forms of management (program, feedback and pre-connection).• Validate the simulation of system dynamics in the manufacturing process in the food industry.• Distinguish linear systems by using transfer functions of basic technological operations in the food industry.
Content	<ul style="list-style-type: none">• Introduction to the automation and industrial control systems. The meaning and classification size in the control system. The dynamics of the system 1st and 2nd degree. The poles of the transfer function. Features management with two common types of automation: Feedback Control and Sequence Control. Introduction to algorithms tuning PID controller parameters in industrial drives, and use of computer programs for the analysis and simulation of the system.
Learning materials	Reading from the primary literature are referenced in class and posted to the course website. <ol style="list-style-type: none">4. Bill Cox, Understanding Engineering Mathematics, 2001, ISBN: 0-7506-5098-25. Thomas, G. B.: Thomas' Calculus, Part 2, Pearson Addison-Wesley.6. Kreyszig, E.: Advanced Engineering Mathematics, John Wiley & Sons.