



Course catalogue

TTF-PB301 Principles of Food Engineering and Biotechnology

Programme	Food Technology and Biotechnology
Level	Bachelor's programme
Academic year	III year
Semester	Autumn Semester
ECTS credits	6 credits
Lecturers	Ass. Prof. Daniela Nikolovska Nedelkoska, PhD
Language	Macedonian
Objective	With this course, the student will be able to handle and gain an understanding of the general concepts and tools available in Food Engineering and Biotechnology.
Content	Engineering properties of foods: rheological and thermal properties. Heat and mass transfer in food processing. Mass and energy balances in food processing. Introduction to Biotechnology. Basic scheme of biotechnological process (upstream, bioprocess, downstream). Microbial processes. Cultivation of microorganisms. Microbial growth, basic kinetics. Medium (composition, preparation and sterilization). Bioreactor. Aeration and mixing in fermentation. Operations after fermentation. Enzyme processes. Properties of enzymes as biocatalysts. Basic kinetics. Immobilization of biocatalysts. Industrial application. Selected examples of microbial and enzymatic processes.
Learning materials	Reading from the primary literature are referenced in class and posted to the course website.