

Course title:	Biofilm in food technology
Course title in Polish:	Biofilm w technologii żywności
Course for discipline:	food technology and nutrition

Semester:	3	Status of course:	faculty	Language:	english
Academic year:	2026/27	Catalog number:	96/2025/26		

Coordinator of course:	dr hab. Monika Trzaskowska, prof. SGGW
Lecturer od course:	dr hab. Monika Trzaskowska, prof. SGGW
Executing unit:	Department of Food Gastronomy and Food Hygiene
Ordering unit:	Doctoral School SGGW
Assumptions, goals and description of the course:	The aim of the course is to provide in-depth knowledge of the mechanisms of formation, structure, and functioning of microbial biofilms in the food industry environment, and to develop skills in identifying, monitoring, and limiting their occurrence in technological processes.
Didactic form, number of hours:	15 hours
Teaching methods:	The course is delivered through methodological workshops, laboratory project work, case study analysis, and seminar discussions. Students prepare analytical reports using systematic review and/or expert knowledge elicitation methods, then present the results and critically analyse them.
Limit of people in the group:	12

#### Learning outcomes

KNOWLEDGE - the graduate knows and understands:	SKILLS - the graduate is able to:	COMPETENCES - the graduate is ready to:
To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Critically evaluate the achievements in the field/discipline represented
Major general development trends in the field/discipline		Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect
		Support the ethos of scientific circles and conduct independent research
The method of verification of learning outcomes:	Assessment of work during classes, assessment of the project and exam.	
Form of documentation of achieved learning outcomes:	Final grade: reports on tasks performed in class – 30%, Project evaluation (documentation) – 40%, exam – 30%	
Elements and weights of the final grade:	Teaching room and laboratory.	
Place of the course:	12	

#### Basic and supplementary literature

Literatura podstawowa:	1. Pometto, Anthony L., and Ali Demirci, red. 2015. Biofilms in the Food Environment. II. Chicago: John Wiley & Sons, Ltd. 2. Ximenes, Eduardo, Lori Hoagland, Seockmo Ku, Xuan Li, and Michael Ladisch. 2017. „Human Pathogens in Plant Biofilms: Formation, Physiology, and Detection”. Biotechnology and Bioengineering 114 (7): 1403–18. <a href="https://doi.org/10.1002/bit.26247">https://doi.org/10.1002/bit.26247</a> .
Literatura uzupełniająca:	1. Čabarkapa, Ivana, Radmilo Čolović, Olivera Đuragić, Sanja Popović, Bojana Kokić, Dubravka Milanov, i Lato Pezo. 2019. „Anti-biofilm activities of essential oils rich in carvacrol and thymol against Salmonella Enteritidis”. Biofouling 35 (3): 361–75. <a href="https://doi.org/10.1080/08927014.2019.1610169">https://doi.org/10.1080/08927014.2019.1610169</a> . 2. Mørsetrø, Trond, Helge Fanebust, Annette Fagerlund, and Solveig Langsrud. 2019. „Whole room disinfection with hydrogen peroxide mist to control Listeria monocytogenes in food industry related environments”. International Journal of Food Microbiology 292 (March): 118–25. <a href="https://doi.org/10.1016/j.ijfoodmicro.2018.12.015">https://doi.org/10.1016/j.ijfoodmicro.2018.12.015</a> . 3. Trmcic, Aljosa, Huihui Chen, Monika Trzaskowska, Sandeep Tamber, and Siyun Wang. 2018. „Biofilm-Forming Capacity of Five Salmonella Strains and Their Fate on Postharvest Mini Cucumbers”. Journal of Food Protection 81 (11): 1871–79. <a href="https://doi.org/10.4315/0362-028X.JFP-18-180">https://doi.org/10.4315/0362-028X.JFP-18-180</a> .
Comments:	No comments.

Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:	20
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Learning outcomes reference to the second degree characteristics of the National Qualification Framework (level 8) covering doctoral competences:		
Symbol:	Learning outcomes:	8 level NQF
SD1_KW01	To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	P8S_WG
SD1_KW02	Major general development trends in the field/discipline	P8S_WG
SD1_KU05	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	P8S_UW
SD1_KK01	Critically evaluate the achievements in the field/discipline represented	P8S_KK
SD1_KK03	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect	P8S_KK
SD1_KK08	Support the ethos of scientific circles and conduct independent research	P8S_KR