

Course name:**GENERAL FOOD TECHNOLOGY**

ECTS	6
Course status	optional
Course final assesement/evaluation of outcomes	exam
Prerequisites	basics of physics, chemistry

Main field of study:**FOOD TECHNOLOGY AND HUMAN NUTRITION**

Profile of study	academic
The code of studies (education level)	SI (bachelor)
Semester of studies	winter/summer
Language of instruction	English

Course offered by:

Name of faculty offering the course	Faculty of Food Technology
Name of department offering the course	Department of Biotechnology and General Technology of Food
Course coordinator	Prof. Krzysztof Surówka PhD. DSc. Eng.

Learning outcomes of the course:

Symbol of outcome	Description of learning outcome	Reference to	
		main field of study outcomes	discipline#

KNOWLEDGE – student knows and/or understands:

GFT_W1	physical, chemical, biochemical and microbiological processes occurring during food production and storage	TŻ1_W01 TŻ1_W03	RT
GFT_W2	basic methods, techniques, technologies, tools and materials allowing for the safe production and preservation of food	TŻ1_W02 TŻ1_W08 TŻ1_W10	RT

SKILLS – student is able to:

GFT_U1	perform in laboratory conditions some operations and processes typical for the food industry, is able to control and describe them; can apply basic analytical methods to evaluate operations and processes	TŻ1_U04 TŻ1_U10	RT
GFT_U2	give a mathematical form to the studied physical and chemical phenomena, present results in the form of tables, graphs and interpret them in writing or orally	TŻ1_U03	RT

SOCIAL COMPETENCE- student is ready to:

GFT_K1	continuous training and improvement of professional qualifications and personal development	TŻ1_K01 TŻ1_K04	RT
GFT_K2	starting cooperation in a team, organizing work in a group	TŻ1_K02	RT

Teaching contents:

Lectures	30	hours
Introduction. Postharvest handling and preparation of foods for processing		

Topics of the lectures	Mechanical processing (e.g., comminuting, blending)
	Thermal processing (e.g., heating, blanching)
	Diffusion processing (e.g., extraction, distillation)
	Physicochemical processing (e.g., emulsification, gelling)
	Chemical processes (e.g., hydrolysis, neutralization)
	Biotechnological processes (e.g., enzymatic processes and fermentation)
	Case study – new product development
	Thermal preservation (e.g., appertization, aseptic packaging)
	Freezing, chilling
	Concentration, drying
	New technologies in processing and preservation of foods

Accomplished learning outcomes	GFT_W1; GFT_W2
Verification methods, rules and criteria of outcome assessment	Written exam; a positive grade should be given at least 60% of correct answers to the questions asked. Participation in the final grade of the course - 50%. One of the conditions for passing the course is the presence of at least 80% of lectures

Classes	60	hours
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Topics of the classes	Foaming and emulsification
	Membrane operations
	Texturization
	Colour in food
	Extraction
	Concentration
	Food concentrates
	Virtual experiments in food processing – thermal processes
	Sterilization
	Virtual experiments in food processing – chilling processes
	Freezing
	Freeze-drying
	Chemical preservation
	Effect of storage conditions on food quality
Outdoor labs	

Accomplished learning outcomes	GFT_U1; GFT_U2; GFT_K1; GFT_K2
Verification methods, rules and criteria of outcome assessment	Grade based on written reports, activity and assessment of the ability to use laboratory equipment. Participation of the lab classes grade in the final evaluation of the module: 50%

References:

Basic	1. J.G. Brennan. <i>Food Processing Handbook</i> , Wiley-VCH, Weinheim, 2006. 2. O.R. Fennema. <i>Food Chemistry</i> , 3rd Ed., Marcel Dekker, N. York, Basel, Hong Kong, 1996. 3. E. Pijanowski, M. Dłużewski, A. Dłużewska, A. Jarczyk. <i>Ogólna Technologia Żywności</i> . WNT, Warszawa, 2004.
Supplementary	1. R.P. Singh, F. Erdogdu. <i>Virtual Experiments in Food Processing</i> . RAR Press, Davis, CA, 2004. 2. M. Adamczak, W. Bednarski, J. Fiedurek. <i>Podstawy biotechnologii przemysłowej</i> . Wydawnictwo Naukowe PWN, Warszawa, 2019. 3. E. Hajduk i wsp. <i>Ogólna Technologia Żywności – skrypt do ćwiczeń</i> . UR, Kraków, 2010.

Structure of learning outcomes:

Discipline: # R	6	ECTS**
Discipline: # (provide appropriate symbol - if the course relates to more than one academic discipline)	...	ECTS**

Structure of student activities:

Contact hours	94	hours	3.8	ECTS**
including:				
lectures	30	hours		
classes and seminars	60	hours		
consultations	2	hours		
participation in research	0	hours		
mandatory traineeships	0	hours		
participation in examinations	2	hours		
e-learning	0	hours	...	ECTS**
student own work	56	hours	2.2	ECTS**

Syllabus valid from the academic year 2021/2022

* where 10 hours of classes = 1 ECTS (in case of 15 h → 2 ECTS)

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes

academic discipline code: RZ - animal science and fishery, PB - biological sciences, etc.