

**Course name:****GENERAL FOOD TECHNOLOGY**

ECTS	6
Course status	optional
Course final assessment/evaluation of outcomes	exam
Prerequisites	no prerequisites

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

Profile of study	academic
The code of studies (education level)	SI/SM (bachelor/master)
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 #
<b>KNOWLEDGE – student knows and/or understands:</b>			
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_W12	RT
<b>SKILLS – student is able to:</b>			
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
<b>SOCIAL COMPETENCE- student is ready to:</b>			
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:**

<b>Lectures</b>		<b>30</b>	<b>hours</b>
Topics of the lectures	Introduction. Postharvest handling and preparation of foods for processing		
	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 (test); to obtain a positive grade, it is necessary to provide at least 50% correct answers to the questions asked. Participation in the final grade of the course - 50%.		
<b>Classes</b>		<b>60</b>	<b>hours</b>
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. P.J. Fellows. <i>Fellows' Food Processing Technology. Principles and Practice. Fifth Edition</i> , Elsevier Science Publishing, 2022. 3. N. N. Potter and J. H. Hotchkiss. <i>Food Science</i> , Chapman & Hall, New York, 1995.
Supplementary	1. R.P. Singh, F. Erdogdu. <i>Virtual Experiments in Food Processing</i> . RAR Press, Davis, CA, 2004. 2. P. Zeuthen & L. Bøgh-Sørensen. <i>Food Preservation Techniques</i> . Woodhead Publishing, 2003. 3. E. Hajduk et al. <i>General Food Technology – lab exercises handbook</i> . UR, Kraków, 2010 (in Polish).

**Structure of learning outcomes:**

Discipline: nutrition and food technology	6	ECTS**
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**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**

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

# academic discipline code: RT nutrition and food technology