COURSE OUTLINE

of the class 2025-2027

Transilvania University of Brașov

Master's degree study programme	**GASTRONOMIC ENGINEERING (IN ENGLISH)**
Fundamental field	**Engineering Sciences**
Master's degree study field	**Food Engineering**
Faculty	**Food and Tourism**
Duration of studies	**2 years**
Form of education:	**Full-time (IF)**
Type of master's study programme:	**professional**

1. EDUCATIONAL OBJECTIVES AND COMPETENCES

The general objective of the master's degree program entitled "Gastronomic Engineering" (in English) is designed to provide skills and competencies for a professional and research career in the field of Food Engineering (based on the following accredited bachelor's degree programs: Food Engineering, and Food Control and Expertise). "Gastronomic Engineering" master's program (in English) represents the connecting step (on the Bachelor's – Master's – Doctorate line) between Bachelor's degree that trains good performers and the specialized doctoral school that trains students to innovate. In this context, the master's degree program has as its general objective the training and development of the master's students' knowledge capacity, but also of critical and innovative thinking, for the very current field of gastronomy, a border area between food, hospitality and tourism. The master's program also aims to train master's students, through in-depth study, skills, both for production activities at the highest level and for research of excellence in a leading activity.

The master's degree program Gastronomic Engineering (in English) is the first master's degree program in Romania that offers graduates a solid foundation such as: Management, Engineering and Practice. Thus, the overall objective of this master's program is to provide graduates with the advanced knowledge, skills and competencies necessary to creatively and confidently innovate food production in gastronomy, in line with current trends in food and hospitality. The study program is an innovative one, stimulating a complex understanding of the food and beverage sector, while providing a leadership perspective on the key issues facing the gastronomy and hospitality industry.

The duration of the program is 2 years (4 semesters). The language of instruction is English.

Major group 2145 COR/ISCO-08 code:

214514 - food industry engineer

214516 - food product designer engineer

214538 - food technology specialist.

The skills profile developed in accordance with the needs identified on the labor market and with the national qualifications framework, as well as the learning outcomes associated with these skills are presented synthetically below. Their detailed presentation can be found in the subject sheets of the curriculum.

Professional competences and learning outcomes

P.C.1 Performs detailed food processing operations

Upon completion of the master's program, the graduate will be able to:

Competencies

L.O. 1.1 Know precise food processing operations, paying special attention to all stages of creating a quality product.

L.O. 1.2 Understand the process of monitoring parameters related to food processing operations

L.O. 1.3 Know specific regulations related to the manufacture of food and beverages

Skills

L.O. 1.4 Perform precise food processing operations, paying special attention to all stages of creating a quality product.

L.O. 1.5 Filter liquid foods to eliminate any solid residue.

L.O. 1.6 Insert filtered liquid foods into different containers.

L.O. 1.7 Monitor parameters during the food and beverage manufacturing process

L.O. 1.8 Apply specific regulations regarding the manufacture of food and beverages

Responsibilities and autonomy

L.O. 1.9 Assume responsibility and accountability for his/her own professional decisions and actions or those delegated to others in the food preparation process.

L.O. 1.10 Demonstrate willingness to immediately assume tasks resulting from professional activities.

L.O. 1.11 Plan and implement sustainable strategies to improve production performance, integrating innovative solutions;

P.C. 2 Check the quality of raw materials

Upon completion of the master's program, the graduate will be able to:

Competencies

L.O. 2.1 Know the quality elements of raw materials used in gastronomic processes.

L.O. 2.2 Identify the factors that influence the quality of raw materials used in gastronomic processes.

L.O. 2.3 Understand concepts related to quality assurance during food processing operations

L.O. 2.4 Know national, international and domestic regulations mentioned in standards, regulations and other specifications related to raw materials used in gastronomic processes.

Skills

L.O. 2.5 Evaluate the quality of raw materials used in gastronomic processes.

L.O. 2.6 Recommend possible improvements and comparisons with other products.

L.O. 2.7 Ensure the quality of all factors that influence the quality of raw materials used in gastronomic processes.

L.O. 2.8 Apply national, international and domestic regulations mentioned in standards, regulations and other specifications relating to raw materials used in gastronomic processes.

Responsibilities and autonomy

L.O. 2.9 Plan and supervise the implementation of quality standards relating to raw materials in gastronomic processes.

L.O. 2.10 Organize and coordinate the quality assurance process of raw materials in gastronomic processes.

L.O. 2.11 Ensure the necessary framework for carrying out quality inspections and tests in gastronomic processes.

P.C.3 Develop processes and techniques for food production or food preservation. Involved in the design, development, construction and operation of industrial processes and techniques for food production. Upon completion of the master's program, the graduate will be able to:

Knowledge

L.O. 3.1 Know the principles and innovative technologies applicable to the production of high-quality food for the gastronomic industry;

L.O. 3.2 Identify ecological methods and technologies for food preservation, including cold chain logistics and advanced packaging technologies;

L.O. 3.3 Explain ways to integrate sustainable and local sourcing into food production systems, with the aim of reducing waste;

L.O. 3.4 Know the principles of design and optimization of workflows in gastronomic units;

L.O. 3.5 Know modern solutions for flexible space layout for gastronomic production Skills

L.O. 3.6 Develop and implement innovative processes and techniques for obtaining gastronomic products, ensuring their efficiency and coherence;

L.O. 3.7 Design and use ecological and energy-efficient preservation methods, adapted to the specifics of the gastronomic industry;

L.O. 3.8 Design and manage food production systems based on sustainable sourcing and waste reduction;

L.O. 3.9 Optimize workflows in the gastronomic industry, to reduce losses;

L.O. 3.10 Create and adapt the design of flexible arrangements for processes in the gastronomic industry Responsibilities and autonomy

L.O. 3.11 Ensure the optimal and sustainable functioning of food production processes in gastronomic units;

L.O. 3.12 Organize and coordinate the design, implementation and evaluation activities of preservation and production techniques;

L.O. 3.13 Assume responsibility for the creation of gastronomic concepts and innovative serving spaces that combine quality, sustainability and exclusivity.

P.C. 4 Performs sensory evaluation of food products

Upon completion of the master's program, the graduate will be able to:

Competencies

L.O. 4.1 Identify the specific elements for evaluating the sensory quality of a certain type of food or beverage.

L.O. 4.2 Understand the methods and techniques of sensory analysis of gastronomic products.

L.O. 4.3 Know the stages of sensory analysis using descriptive statistical analysis

Skills

L.O. 4.4 Evaluate the quality of a certain type of food or beverage, depending on its sensory characteristics.

L.O. 4.5 Develop their own discrimination tests and apply real procedures for testing gastronomic products.

L.O. 4.6 Plan the organization of a sensory analysis session, including the choice of the tasting panel.

L.O. 4.7 Analyze the results of the sensory analysis in order to improve the quality of future gastronomic products.

Responsibilities and autonomy

L.O. 4.8 Organize and coordinate a sensory analysis session of gastronomic products.

L.O. 4.9 Make decisions regarding the organization of a sensory analysis panel and the tests used.

L.O. 4.10 Make decisions regarding changes to the gastronomic process based on the results of a sensory analysis.

P.C.5 Performs quality control on food processing

Upon completion of the master's program, the graduate will be able to:

Competencies

L.O. 5.1 Understand the specific concepts of quality management and food safety in gastronomy

L.O. 5.2 Know the methods and procedures of systematic testing and analysis for the evaluation of gastronomic products

L.O. 5.3 Understand the quality criteria specific to food processing and the feedback mechanisms associated with them;

L.O. 5.4 Know the assortments of culinary preparations and understand the transformations undergone by foods during primary and thermal processing.

Skills

L.O. 5.5 Perform standard tests and analyzes to evaluate the quality of gastronomic products

L.O. 5.6 Inspect and monitor production processes and gastronomic flows to identify non-conformities and opportunities for improvement;

L.O. 5.7 Verify the conformity of gastronomy processes and products

Responsibilities and autonomy

L.O. 5.8 Ensure the necessary framework for conducting quality inspections and tests in gastronomic units

L.O. 5.9 Organize and coordinate the monitoring and control activities of gastronomic processes and products

L.O. 5.10 Plan and supervise the implementation of culinary, safety and sustainability standards in gastronomic units

L.O. 5.11 Assume responsibility for the final validation of the quality of gastronomic products

2. STRUCTURE PER WEEKS OF THE ACADEMIC YEAR

Number of semesters: 4 semesters.

Number of credits per semester: 30 credits

Number of hours of teaching activities /week: 14-16

Number of weeks: 28

	Teaching activities		Exam sessions			Holidays		
	Sem. I	Sem. II	Winter	Summer	Retakes	Winter	Spring	Summer
Year I	14	14	3	4	2	3	1	10
Year II	14	14	3	3	2	3	1	-

3. PROVISION OF EDUCATION FLEXIBILITY. CONDITIONINGS

The flexibilization of the study programme is ensured by optional disciplines and facultative disciplines.

The optional disciplines are proposed for the semesters 2-4, through packages of specialized disciplines.

4. CONDITIONS OF ENROLLMENT IN THE FOLLOWING STUDY YEAR. CONDITIONS FOR PASSING A STUDY YEAR

Enrollment in the following year is conditional on meeting the conditions for passing contained in the *Regulations on students' professional activity*.

5. CONDITIONS FOR ATTENDING THE FACULTATIVE DISCIPLINES

This Course Outline includes, in addition to the **compulsory** and **at choice** (**optional**) disciplines, several **facultative disciplines.**

6. REQUIREMENTS FOR OBTAINING THE MASTER'S DEGREE DIPLOMA

The conditions for taking the dissertation exam are presented in the *Methodology for the academic studies final examination*, approved by the Senate of the University. According to this methodology, in order to enter the dissertation exam, all disciplines laid down in the course outline must have been passed.

DISSERTATION EXAM

1 Period of drafting the dissertation: **semesters 3 – 4;**
2 Period of completing the dissertation: **the last 3 weeks of the terminal year;**
3. Period of defending the dissertation exam: july
4. Number of credits for defending the dissertation: 10 credits.

Transilvania University of Braşov — Ministry of Education and Research
Faculty of Food Industry and Tourism — Valid in the academic year 2025-2026
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Master's degree field: Engineering of Food Products
Duration of studies: 2 years
Form of education: full time
Type of master's degree programme: professional

YEAR I

No.	Compulsory disciplines	C1**	C2**	Semester I								Semester II							
				C	S	L	P	SI	Pr	V	Cr	C	S	L	P	SI	Pr	V	Cr
1	Ethics and Academic Integrity II	DC	DI	1			0	76		V	3								
2	Psychology of Human Nutrition	DS	DI	2			2	94		E	5								
3	Gastronomic Techniques	DF	DI	2		2	0	124		E	6								
4	Sensory Evaluation of Food and Beverages	DS	DI	1		2	0	108		E	5								
5	European Union Food Policies and Strategies	DS	DI	2	1			108		V	5								
6	Professional Practice I	PS	DI			12		12		V	6								
7	Innovation in Food Additives and Ingredients	DS	DI									2		2		94		E	5
8	Planning and Design of Culinary Spaces	DS	DI									2			2	94		E	5
9	Gastronomy and the Art of Beverages	DS	DI									2		2		94		E	5
10	Dietary Food Chains	DS	DI									1		1		92		E	4
11	Professional Practice II	PS	DI											12		12		V	6
Total hours compulsory disciplines				**8**	**1**	**16**	**2**	**522**		**E C V 3 3**	**30**	**7**		**17**	**2**	**386**		**E C V 4 1**	**25**
				27								**26**							

No.	Optional disciplines	C1**	C2**	Semestrul I								Semestrul II								
				C	S	L	P	SI	Pr	V	Cr	C	S	L	P	SI	Pr	V		Cr
1	Food Waste Management	DS	DO									2	2			94		E		5
	Circular Economy in Gastronomy and Hospitality	DS	DO									2	2			94		E		5
Total hours optional disciplines per week										E / C / V		2	2			94		E / C / V		5
																		1		
Total				0								4								

No.	Facultative disciplines	Type	Semester I						Semester II							
			C	S	L	P	Ver.	Cr.	C	S	L	P	Pr	SI	V	Cr
1.	Advanced English	DA							2	2	0	0	0	94	V	5
Total facultative hours per week									2	2	0	0	0	94	1	5
			Total:						4				1			5

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Faculty of Food Industry and Tourism
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YEAR II

No.	Compulsory disciplines	C1**	C2**	Semester I								Semester II							
				C	S	L	P	SI	Pr	V	Cr	C	S	L	P	SI	Pr	V	Cr
1	Project Management in Gastronomy	DS	DI	2			2	124		E	6								
2	Digitalisation of Gastronomic Design	DS	DI	2		2		124		E	6								
3	Novel Gastronomic Techniques and Equipment	DS	DI	2		2		124		E	6								
4	Professional Practice III	PS	DI			10		40		V	6								
5	Professional Practice IV	PS	DI											10		160		V	10
6	Professional Practice for Dissertation Drafting	PLD	DI											7		202		V	10
7	Dissertation drafting	PLD	DI											10		160		V	10
Total hours compulsory disciplines				6		14	2	412		E: 3, C: , V: 1	24			27		522		E: , C: , V: 3	30
				22								27							

No.	Optional disciplines	$C1^{**}$	$C2^{**}$	Semestrul I								Semestrul II							
				C	S	L	P	SI	Pr	V	Cr	C	S	L	P	SI	Pr	V	Cr
1	Business Strategy and Entrepreneurship	DC	DO	2			2	124		E	6								
	Investment and Project Analysis	DC	DO	2			2	124		E	6								
Total hours optional disciplines per week				2			2	124		E: 1, C: 0, V: 0	6							E: , C: , V:	
Total				4								0							

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GENERAL BALANCE SHEET I

No.	Discipline	No. of hours		Total	
		Year I	Year II	hours	%
1	Compulsory	742	686	1428	92.73
2	Optional	56	56	112	7.27
	TOTAL	798	742	1540	100.00
3	Facultative	56	0	56	

GENERAL BALANCE SHEET II

No	Discipline	No. of hours		Total	
		Year I	Year II	Hours	%
1	Specialized practice	336	280	616	44.00
2	Practice for drafting the dissertation	0	98	98	7,00
3	Fundamental disciplines	56	0	56	4,00
4	Specialization disciplines	392	168	560	40,00
5	Complementary disciplines	14	56	70	5,00
	TOTAL	798	602	1400	100

GENERAL BALANCE SHEET III

No.	Discipline	No. of hours		Total	
		Year I	Year II	hours	%
1	Specialized practice	336	280	616	86,27
2	Practice for drafting the dissertation	0	98	98	13,73
	TOTAL	336	378	714	100.00

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