Transilvania University of Braşov, Romania
Study program: Gastronomic Engineering (in English)

Faculty: Food and tourism
Study period: 2 years (master)

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Ethics and communication	EC	English	3	1	-	-	-

Course description (Syllabus): Ethics and communication; Scientific method, scientific thinking; Plagiarism and copyright. Databases. Academic writing (citation, paraphrasing, references); Argumentation and proof in technical and professional writing; Ethics and communication in food industry. Evolving paradigms; Technical and professional communication

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Psychology of human nutrition	PHN	English	5	2			2

Course description (Syllabus): human temperament and eating behaviour; correlations between introversion/extraversion and emotional stability/instability and the human eating behaviour; correlations between personality traits and eating behaviour; gender differences reflected in human nutrition; attachment patterns reflected within the human eating behaviour; emotions and eating behaviour; the somatotype and human nutrition; intelligence and creativity - correlations with the human eating behaviour; eating disorders; students self-testing and reflective writing tasks.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Gastronomic Techniques	GT	English	6	2	-	2	-

Course description (Syllabus): analyze the scientific principles behind gastronomic techniques; apply classic and modern techniques to create innovative dishes; use state-of-the-art equipment in gastronomy; integrate sustainability and health concepts into the culinary process; develop experimental menus based on current gastronomic trends.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Sensory Evaluation of Food and Beverages	SEFB	English	5	1	-	2	-

Course description (Syllabus): The courses are designed to provide students with the knowledge and skills to become an effective sensory professional in food and beverage production and quality control.By the end of this course, students should be able to develop the practical skills necessary to set up their own discrimination tests, create a test protocol, apply real test procedures and interpret what the results mean for different food products. Moreover, students will learn how to evaluate the sensory quality of food products using statistical descriptive analysis.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
European Union Food Policies and Strategies	EUFPS	English	5	2	1	-	-

Course description (Syllabus): The concept of food policy in the European Union; The institutional and legislative framework of the European Union in the food sector; The Common Agricultural Policy (CAP): evolution and components; The "Farm to Fork" Strategy; The European Green Deal and its relationship with the food sector; Food

safety and public health in the European Union; Policies for the sustainability of food production and consumption; Policies for reducing food waste; Labeling and traceability of food products; Innovation and digitalization in the European food sector; Implementation of food policies in the member states; Financing mechanisms and support instruments; Evaluation of food policy performance; Development of a national or regional food strategy

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Innovation in Food Additives and Ingredients	IFAI	English	5	2	-	2	-

Course description (Syllabus): Critical analysis of the functions of food additives in modern recipes. Selection of appropriate additives for various food products, considering market demands and legislative regulations. Development of innovative solutions to improve the quality of food products. Analysis of the functional and nutritional impact of ingredients on consumers. Utilization of advanced technologies to validate the efficiency of new food ingredients.

Course title	Code	Language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Planning and design of culinary spaces	PLA	English	5	2	-	-	2

Course description (Syllabus): – Introduction to architecture, planning and design – concepts, terminology, structure-style-symbol relationship in architecture and design; Vitruvian Attributes - Stabilitas/Firmitas (strength, safety, meanings) - Utilitas (function, meanings) - Venustas (expressiveness, beauty, harmony, kitsch; meanings) as applied to culinary spaces; elements of diagrammatic compositional analysis (line-plane-volume-module-landmark-rhythm-hierarchy) as applied to culinary spaces; low-tech / high-tech dichotomy: exploring the relationship of building materials/structural systems – purpose/function/ergonomics (kitchen, circulations, sanitary spaces, annexes, flows and circulations of specific equipment) – form/expression in design/architecture and applications in the planning and design of culinary spaces; furnishing principles, fundamentals of lighting and basic elements of color theory (relationships between the properties of light and the characteristics of color) as applied to the destination and characteristics of specific culinary spaces.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Gastronomy and the Art of Beverages	GAB	English	5	2	-	2	-

Course description (Syllabus): Fermented alcoholic beverages worldwide; The basics of wine making: the process of white, red, rosé, sparkling wines; The basics of wine tasting and serving; The use of wines in gastronomic preparations: rules of use, pairing with dishes, recipes; The basics of beer making: primary fermentation, secondary fermentation, craft beer making; The basics of beer tasting and serving; The use of beer in gastronomic preparations: rules of use, pairing with dishes, recipes; The basics of making spirits: vodka, whiskey, gin, rum, tequila, brandy; The basics of tasting and serving spirits; The use of spirits in gastronomic dishes: rules of use, pairing with dishes, recipes; Preparing and serving liqueurs; Preparing and serving alcoholic cocktails

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Dietary Food Chains	IFAI	English	4	1	-	1	-

Course description (Syllabus): Dietary food chains; The differences and challenges of Kosher and Halal foods in accessing international markets; Introduction to the concept and practice of Kosher and Halal; The dilemma and concepts of safe food for Halal; Halal and Kosher slaughter procedures; Standards and their application to the production, manufacturing and storage of Halal food; The concept and meaning of the Halal traceability system; Sensory principles and techniques for evaluating the quality of Halal foods; Good Practices: Design and

Implementation of Halal Food Supply Chain; Intrinsic and extrinsic factors related to the shelf life of halal food; Halal meat production using the HACCP system; Comparison of Kosher and Halal food; Basic Halachic Concepts in Kashrus

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Food waste management	FWM	English	5	2	-	2	-

Course description (Syllabus): The course main objective is the student to understanding the problems regarding the recovery of waste and by-products that result in the technological processes of obtaining food products. The studied chapters will help to understand the importance of the recovery of waste and by-products resulting in a significant proportion in food technological processes. Understanding the role of the technologist in the food industry in managing technological operations as well as monitoring technological parameters. Knowledge of the processes that are the basis for obtaining the food products. Interpretation of technological schemes and description of technologies for processing the by-products resulting from the technological processes of food products. Characterization of finished products. Understanding the role and importance of the recovery of by-products in the food industry.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Circular economy in gastronomy and hospitality	CEG	English	5	2	-	2	-

Course description (Syllabus): Waste reduction: Implement composting and recycling programs in hotels, restaurants, and other tourism establishments. Reduce the use of single-use plastic. Promote sustainable and reusable products for tourists. Resource efficiency: Efficient use of water and energy in tourist establishments. Use of renewable energy sources. Reducing food waste. Sustainable transport: Promote public transport, walking and cycling for tourists. Support airlines and tour operators using low carbon fuels. Offsetting carbon emissions from tourist travel. Encouraging tourists to adopt sustainable practices during their travels. Work with the tourism industry to promote the circular economy.

Course title	Code	language of instruction	No. of credits	Number of hours (total)
Professional practice I		English	5	140

Course description (Syllabus): Introduction to nutrition and dietetics (training & practice); Occupational health and hygiene practices (training & practice).

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Strategic management and marketing	SMM	English	5	1	-	-	2

Course description (Syllabus): Trends in food marketing (Collaborative economy. Circular economy. The experience economy); Food consumer psychology and behaviour (Generational theory. Profile of the modern food consumer. Factors influencing the food consumer behaviour); The basic trinomial model within the strategic marketing: segmentation-targeting-positioning (Market segmentation strategies for food products. Classic segmentation variables. Psychographic segmentation variables. Behavioural segmentation variables. Designing strategic segmentation models); Targeting and positioning strategies in the food market; Human resources management strategies; Strategic models that can be used in food marketing (Matrix Threats, Opportunities, Weaknesses, Strengths. Ansoff Matrix. Boston Consulting Matrix 1. Boston Consulting Matrix 2. General Electric Matrix).

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Marketing communications and consumer culture	MCCC	English	5	1	-	-	2

Course description (Syllabus): Marketing research (Classification of marketing research. Marketing research design. Qualitative research methods. Design techniques. Trends in hospitality research); Promotion of food products, of food and gastronomy businesses. Promotion sub-mix (advertising techniques, sales promotion, public relations, professional selling); Branding and brand promotion in the food and gastronomy sector (Phases in branding. Brand architecture. Brand promotion - emotional resonance with the consumer); The basic trinomial model within the strategic marketing: segmentation-targeting-positioning (Market segmentation strategies for food products. Classic segmentation variables. Psychographic segmentation variables. Behavioural segmentation variables. Designing strategic segmentation. Targeting and positioning strategies in the food market. Designing strategic positioning models).

Course title	Code	language of instruction	No. of credits	Number of hours (total)
Professional practice II		English	5	140

Course description (Syllabus): Asset and inventory management (training & practice); Culinary techniques (training & practice).

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Project Management in Gastronomy	PMG	English	6	2	-	-	2

Course description (Syllabus): Project Management principles; Problem identification and needs analysis in the field of gastronomic engineering; Project life cycle and Project Management processes; Cost estimation and budgeting for gastronomic engineering projects; Identifying funding resources for projects in the field of gastronomic engineering; Human resources management; Risk management; Monitoring, evaluation, project closure**;** Development of a project in the field of gastronomic engineering

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Digitalisation of Gastronomic Design	DGD	English	6	2	-	2	-

Course description (Syllabus): Familiarization with equipment and software used in the digitalization of gastronomic design. Analysis of data obtained using measurement devices for food product quality control. Application of 3D modeling and food printing technologies for dish customization. Use of graphic and design software for conceptualizing and presenting gastronomic products. Optimization of recipes and culinary processes through digital ingredient analysis. Development of interdisciplinary projects that combine food engineering with computer-aided design.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Novel Gastronomic Techniques and Equipment	NGTE	English	6	2	-	2	-

Course description (Syllabus): Understanding the fundamental principles of modern gastronomic techniques: students will study technologies such as sous-vide, low-temperature cooking, the use of liquid nitrogen, food dehydration, and other innovative methods. The ability to select the right equipment according to the preparation: Participants will learn to correctly identify and use equipment such as rotavap, thermocirculators, dehydration systems, vacuum equipment and other specialized devices. Exploring molecular gastronomy: Processes such as spherification, emulsification, gelling and foaming will be studied, along with their creative application in innovative menus. Development of sustainable gastronomic preparations: Students will learn how to integrate modern techniques to minimize food waste and make full use of ingredients. Enforcement of food safety rules: The discipline will include modules on hygiene and safety in the use of modern cooking equipment, as well as on preserving the quality of processed foods.

Analysis of the impact of modern technologies on nutritional value: Students will learn how different techniques and equipment influence the nutritional and organoleptic properties of preparations.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Business strategy and entrepreneurship	BSE	English	6	2			2

Course description (Syllabus): Creating an integrative and entrepreneurial vision of businesses; Development of the innovative and creative spirit of businesses; Developing the ability to analyse and synthetise in an entrepreneurial context; Developing the ability to forecast and control economic processes; Carrying out business plans in specific field; Acquiring specific methods and techniques for business evaluation and management.

Course title	Code	language of instruction	No. of credits	Number of hours per week			
				course	seminar	laboratory	project
Investment and project analysis	INV	English	6	2	-	-	2

Course description (Syllabus): – Creating an integrative and entrepreneurial vision of investments; Development of the innovative and creative spirit of business; Developing the ability to analyse and synthetise in an entrepreneurial context; Developing the ability to forecast and control economic processes; Carrying out investment plans in specific field; Acquiring specific methods and techniques for investments evaluation and management.

Course title	Code	language of instruction	No. of credits	Number of hours (total)
Professional practice III		English	5	140

Course description (Syllabus): Menu creation and cost control (training & practice); Culinary techniques II (training & practice).

Course title	Code	language of instruction	No. of credits	Number of hours (total)
Professional practice IV		English	10	140

Course description (Syllabus): Gastronomic trends and innovation (training & practice); Advanced culinary techniques (training & practice); Stewarding and food & beverage service (training & practice).

Course title	Code	language of instruction	No. of credits	Number of hours (total)
Professional practice for dissertation drafting		English	10	84

Course description (Syllabus): Field documentation at the gastronomic establishment where the case study has been planned; Identification of methods and solutions which prepare for the practical implementation of the case study; Documentation on electronic platforms/library.