



Lodz University
of Technology

Study programme

Faculty:	Faculty of Biotechnology and Food Sciences
Major:	Manager of Food and Nutrition
Level of study:	first-cycle programme (licencjat)
Form of study:	full-time studies
Academic year:	2026/27

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Basic information

Name of the field of study:	Manager of Food and Nutrition
Level of study:	first-cycle programme (licencjat)
Study profile:	practical
Form of studies:	full-time studies
Duration of studies (number of semesters):	7
The number of ECTS points required to complete studies:	210
Total number of hours of classes:	2675
The number of ECTS points a student obtains as part of classes conducted with the direct participation of academic teachers or other persons conducting classes:	107
Professional title awarded to graduates:	licencjat
ISCED code:	0721
Language of study:	polish

Assigning the course to the disciplines to which the learning outcomes relate

Discipline	Percentage share
Food technology and nutrition	60%
Management science and quality	40%

Learning outcomes (in relation to the PQF)

No.	Learning outcome code	Learning Outcome Content	Reference to the universal characteristics of the first level of PRK	Reference to the second-level characteristics of the PRK, taking into account the second-level characteristics enabling the acquisition of engineering competences
1	1MZZ1	Knows and understands at an advanced level selected theories in mathematics (including statistics), physics, chemistry, biology, and biochemistry, as required to explain the functions of food components, their metabolism and fundamental mechanisms of assimilation, as well as phenomena related to the production, processing, and storage of food and the impact of these processes on the natural environment.	P6U_W	P6S_WG
2	1MZZ2	Knows and understands the fundamental dilemmas of contemporary civilization, including challenges related to food safety, climate change, ethical issues in food production, and sustainable development. The graduate is able to assess the impact of these dilemmas on the professional activities of a food and nutrition manager.	P6U_W	P6S_WK
3	1MZZ3	Knows the basic principles of industrial property protection and copyright, as well as the ethical and legal conditions of professional activity related to the production, trade, and distribution of food. The graduate can identify key principles and regulations concerning food safety, producer responsibility, and consumer rights in this area.	P6U_W	P6S_WK
4	1MZZ4	Knows and understands the basic principles of establishing, managing, and developing enterprises in the HoReCa sector. The graduate can assess the development possibilities of various forms of entrepreneurship in HoReCa, taking into account innovation, sustainable development, production efficiency, and consumer needs.	P6U_W	P6S_WK
5	1MZZ5	Can formulate and solve complex, unusual problems in the field of food and nutrition by using appropriate information sources and conducting critical analysis and synthesis. The graduate applies advanced information and communication technologies as well as relevant methods and tools to design and carry out simple experiments and to implement systems or technological processes used in food production and nutrition, observing occupational safety principles, task division, and minimizing environmental risks, even under not fully predictable conditions, such as changes in legal regulations or shifting consumer preferences.	P6U_U	P6S_UW
6	1MZZ6	Can formulate and solve problems as well as perform tasks typical of professional activities in food and nutrition management. This includes planning and managing food production processes, quality control, developing and expanding marketing and logistics strategies in HoReCa enterprises, and managing teams in these areas.	P6U_U	P6S_UW
7	1MZZ7	Can communicate with both internal and external stakeholders, using specialized terminology related to food and nutrition. The graduate is also able to participate actively in industry debates, present and evaluate different viewpoints, and lead discussions on current challenges, innovations, and issues related to the food industry and public health, including in a foreign language at the B2 level of the Common European Framework of Reference for Languages.	P6U_U	P6S_UK

No.	Learning outcome code	Learning Outcome Content	Reference to the universal characteristics of the first level of PRK	Reference to the second-level characteristics of the PRK, taking into account the second-level characteristics enabling the acquisition of engineering competences
8	1MZZ8	Can plan and organize both individual and team work, cooperating effectively with others, including within interdisciplinary teams. The graduate possesses project management skills and can apply collaboration methods that facilitate the achievement of common goals. The graduate also plans and pursues lifelong learning independently, developing competencies essential in a dynamically changing professional environment.	P6U_U	P6S_UO, P6S_UU
9	1MZZ9	Is ready to critically evaluate the knowledge they possess and the information they receive regarding food and nutrition. The graduate recognizes the importance of this knowledge in solving both cognitive and practical problems, whether in daily professional activities or the context of societal challenges such as sustainable development or climate change. When encountering difficulties in independently resolving an issue, the graduate is willing to seek expert opinions. The graduate also engages in initiating activities for the public good by co-organizing initiatives related to public health, nutritional education, and responsible food production.	P6U_K	P6S_KK, P6S_KO
10	1MZZ10	Is prepared to assume responsibility for professional roles in the HoReCa industry, adhering to professional ethics and requiring the same from others. The graduate upholds the heritage and traditions of the food and nutrition manager's profession while actively supporting sustainable development. The graduate operates with respect for the environment, promoting innovative and eco-friendly solutions in the food sector.	P6U_K	P6S_KR

Matrix of course modules in relation to learning outcomes and curriculum content

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
1	Food Chemistry and Analysis	Food components: nutritional value, most important sources, importance in food technology, changes in content during technological processes, analytical methods used for their analysis. Basic definitions of commodity science, characteristics of food as a commodity, legal basis of food production conditions and its circulation to the extent necessary to ensure proper quality, basic methods of food quality assessment, classification of food products and their use in food production, food contamination, commodity characteristics of selected plant and animal raw materials in food preparation technology, marking the content of food components, commodity assessment of selected raw materials/food products, calculation of the content of food components in various products based on available data.	x		x		x		x			
2	Business Communication	The process and models of interpersonal communication, channels of communication, verbal and non-verbal communication and the impact of space and culture on the effectiveness of communication. Techniques supporting communication. Personal image, negotiation techniques, company's image on the international market.				x			x	x		x
3	Fundamentals of Management with Elements of Ethics	Management process. Organization and its place in the environment. Evolution of management sciences. Managerial roles and competencies. Planning in the organization. Business strategy. Organizing the activities of the enterprise. Types of organizational structures. Basics of employee motivation. Methods and tools for motivating personnel. Leadership and management styles. Control in the organization. Ethics and law. Sustainable development, corporate social responsibility, and enterprise reporting indicators. Artificial intelligence and social robots in business.		x		x		x		x		x
4	Food Microbiology	Microbiological safety of food. Characteristics of microorganisms occurring in food and in the environment. Beneficial and harmful microorganisms in food. The influence of physical and chemical factors on the development of microorganisms occurring in food. Microorganisms responsible for food spoilage and food poisoning. Studies of the hygienic and sanitary condition in a catering facility and analysis of the effectiveness of washing and disinfection.	x	x			x				x	
5	Fundamentals of Technology in the HoReCa Industry	Introduction to Technology in the HoReCa Industry – role and significance. Reading and understanding documentation. Fundamentals of thermodynamics. Heating equipment. Refrigeration equipment. Ventilation and air conditioning. Sanitary installations. Electrical installations. Principles of occupational safety and hygiene when operating technical equipment. Sustainable use of resources and energy in HoReCa facilities. Technical analysis of a selected HoReCa facility. Selection of catering equipment for a specific venue. Designing the technological layout in a restaurant/hotel. Developing a concept for an energy-efficient and sustainable technical system. Selection of catering equipment for a specific type of cuisine. Optimization of equipment layout for ergonomics and work efficiency. Energy-efficient kitchen. Mobile kitchen.	x			x	x	x				x
6	Practical Spreadsheet Applications	Use of selected mathematical functions and logical formulas. Data analysis and organization. Data visualization in the form of dashboards. Automation of repetitive processes. Application of spreadsheets in correlation and regression analysis. Use of spreadsheets in meal planning, financial and nutritional data analysis, inventory management, and budgeting.	x				x			x		

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
7	Catering Project	Discussion of the basic premises of a catering establishment and the principles of connecting the technological chain and communication between premises and technological stages. Discussion of devices used in catering production of various types and sizes. Preparation of a catering project of a selected type and size of catering establishment, taking into account the specifics of the offer.	x				x	x		x	x	
8	English B2 module I	First part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
9	Fundamentals of Food Technology	Unit processes, branch technologies. Basic calculations in food technology, e.g. process yields, balances (raw materials, mass, energy), formulation construction including percentages. Food additives.	x	x				x			x	
10	Management of Food Production Systems	Basics of food production systems design. The waste of food production and storage. Infrastructure management in the food and catering industry. Packaging in food production processes. Production management versus food and nutrition safety management systems. Risk management in food and nutrition production. Supply chain in food production.	x	x				x				x
11	Commercial Companies Law	General provisions. Corporate documents. Merger, division and transformation of companies.			x	x					x	
12	Ethical Aspects in Food Production	Ethics in the food industry Impact of agriculture on the environment. The role of consumers.		x	x				x		x	x
13	English B2+ module I	First part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
14	Human Nutrition	Food ingredients and their digestion and absorption, structure and physiology of the digestive system, nutrient requirements, human microbiota, selected anthropometric indicators, balancing collective diets, methods of diet assessment in group nutrition.	x				x				x	
15	English C1 module I	First part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
16	Brand Creation in the HoReCa sector	The process of creating, managing and developing brands in the HoReCa sector. The essence of the brand and its importance in the HoReCa industry, brand elements, building brand identity, brand strategies in the HoReCa market and brand communication. Creating a coherent brand strategy tailored to the specifics of the HoReCa sector and the expectations of modern consumers.		x				x				x

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
17	Clean Label	Clean label Main categories of additives replaced in products meeting the clean label criterion in different food categories. Additives obtained in biotechnological processes. Legal requirements, trends resulting from the needs of producers and consumer opinions.		x	x			x	x			
18	Information Technology	Advanced text editor functions. Creating multimedia presentations. Computer networks. IT tools for group work. Cybersecurity. Artificial intelligence. Creating websites. Algorithmization and programming.	x				x			x	x	
19	German B2 module I								x	x	x	
20	Basics of Marketing	Product and its importance in influencing recipients. Market segmentation, targeting and product positioning. The marketing research process and its stages.		x		x		x			x	x
21	Economics	Basic concepts of economics. Fundamentals of consumer theory . Fundamentals of enterprise theory . Basic issues of macroeconomics .				x		x	x			
22	Employee Behavior	Systemic approach to human behavior in an organization. Typology of organizational behavior. Factors influencing organizational behavior in gastronomy Behavior typical of the gastronomy industry. Ways of shaping employee behavior.		x		x		x		x		x
23	Food Law	Food law at global, EU and national level. Sources of food law.	x	x	x			x			x	
24	English B2 module II	Second part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
25	Food Pigments	Plant pigments. Commercial use of natural plant pigments. Stability and transformation of plant pigments under the influence of physical and chemical factors. Health-promoting properties of plant pigments.	x				x					
26	English B2+ module II	Second part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
27	Designing New HoReCa Products	Designing an offer tailored to the specifics of the hotel, restaurant and catering industry. Stages of product creation - from idea to market introduction. Developing innovative and competitive products that meet customer expectations and stand out on the HoReCa market.			x	x		x		x		x
28	Macro and Micronutrients in Food	Macro- and microelements in food - sources, physiological functions, deficiencies and excesses, interactions between nutrients, supplementation and enrichment of food. Analysis of the content of macro- and microelements in food. Influence of technological processing on the content of minerals. Current nutritional standards.	x						x			

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
29	Human Resource Management	The essence and basic concepts of human resource management. Determinants of the HRM process. HR in the era of artificial intelligence and digital transformation. Personnel selection in the HoReCa sector. Employee evaluation. Instruments for building motivation and engagement. Employee rights. Costs of staff employment. KPI for HR in the HoReCa sector.		x		x		x		x		x
30	Forms of Financial Support for the Catering Business	Traditional and modern sources of financing of business activities divided by internal and external sources. Design of a business enterprise in gastronomy using several different sources of financing.				x	x			x		
31	Sales Techniques	Professional food service salesperson: The customer relationship management process. Preparing the salesperson for relational selling. Interpersonal communication and customer loyalty. Sales techniques with examples of their application in the food service industry. Techniques for overcoming customer objections and closing the sale of food services. Actively advising customers.		x		x		x	x		x	
32	English C1 module II	Second part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
33	Organic Food Production	Organic farming – legal regulations. Organic food – raw materials, production technology and production management, processing, certification and labeling, food market, innovations. , Ecology and food quality. Impact of organic production on the environment.	x	x			x		x			x
34	Managerial Accounting	Management accounting, External and internal reporting. Financial statement. Classification of costs. Profit.	x			x		x		x		
35	Food in Culture	Migration and advancing globalization and culinary culture. Religion and food in visual media, literature and art. Feast culture. Food as a source of cultural identification in Polish society (festive table). Intangible Cultural Heritage. UNESCO Lists of the Intangible Cultural Heritage of Humanity.		x			x		x	x		
36	Market Research for Food Services	Preparing students to design and implement their own research in catering services, using secondary and/or primary data): from design to preparation of the research report.				x		x				x
37	German B2 module II								x	x	x	
38	Management Systems	Food quality and safety management systems. Management of health and safety at work. Fundamentals of standardisation. Environmental systems.		x	x			x		x	x	
39	Antioxydants in Food	Radical formation in the environment, redox balance, imbalance, potential health risk, antioxidants, division, types and functions, durability in food, redox potential of food and water, design of a product with antioxidant properties, type and occurrence of antioxidants and methods for determining antioxidant activity and antioxidant content in food. Design of a food product with high antioxidant activity.	x	x			x		x			

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
40	English B2 module III	Third part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
41	Business Plan	Rules of creating a business plan. Development of a business plan project based on data from a food industry enterprise				x		x		x	x	
42	Sustainable Marketing in the HoReCa Industry	Determinants of the design of a company's market activities within the framework of sustainable instrumental marketing strategies. Ecological aspects of product and price in the HoReCa industry. Brand management in the context of sustainable development. Marketing communication of the HoReCa enterprise with the environment focused on social responsibility. Distribution of the offer in the HoReCa industry taking into account the principles of sustainable development.		x		x		x				x
43	Entrepreneurship	Determinants of the design of a company's market activities within the framework of sustainable instrumental marketing strategies. Ecological aspects of product and price in the HoReCa industry. Brand management in the context of sustainable development. Marketing communication of the HoReCa enterprise with the environment focused on social responsibility. Distribution of the offer in the HoReCa industry taking into account the principles of sustainable development.				x		x	x			x
44	Probiotics, Prebiotics, Postbiotics	Characteristics and properties of probiotics, prebiotics, synbiotics, postbiotics. Mechanisms of action and their role in shaping human health. Examples of their use in food and nutrition. Project of new products with the participation of probiotics, prebiotics, postbiotics.	x						x		x	
45	English B2+ module III	Third part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
46	Marketing Communications	Essence, functions and types of marketing communications in enterprise management. Determinants of marketing communications in an enterprise. Tools of marketing communications. Stages of building effective marketing communications of an enterprise. Creative techniques in designing marketing communications in an enterprise. Designing the marketing communications activities of a selected enterprise using creative techniques and issues related to computer advertising design.			x		x	x	x			
47	English C1 module III	Third part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
48	Visualization in the HoReCa Industry	The concept of space, visualization, perception, composition, color, contrast and sign. Elements of space subject to analysis. Shaping space using visual means. Visualization of shaping the selected space with particular emphasis on: color information, safety, ergonomics, psychophysiological aspects, marketing and promotional activities.					x	x				

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
49	Craft Alcoholic Beverages	Restaurant breweries, raw materials in beer production, beer production process and its control, chemical composition of beer, quality control of malt, wort and beer. Ciders, fruit wines, meads, spirits - craft production.	x				x	x				
50	Sustainable Food Production in the HoReCa Industry	Pro-ecological concept of a company's market activity. The use of renewable, recyclable, or biodegradable materials; analysis and extension of the product life cycle. Utilization of raw materials. Carbon footprint. Water footprint. Basic concepts in ecology and environmental protection. Models of water and wastewater management in the food industry.	x	x		x	x		x			x
51	German B2 module III	Third part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
52	Instrumental and Sensory Analysis of Food Products	Introduction to instrumental food analysis – basics and division of methods. Instrumental techniques in microbiological analysis and identification of microorganisms in food products. Diagnostics of the ability of microorganisms present in food. Physicochemical analysis of food. Nutritional value of food. Sensory evaluation – physiological aspects, recognition of tastes and smells. Instrumental and traditional methods used in the sensory analysis laboratory and in consumer research.	x				x	x				
53	Trends in Food	Factors shaping the food market. New ingredients and plant and animal raw materials. Trends in food production. New technologies for processing and preserving food. Characteristics of traditional and modern culinary techniques. Shaping the organoleptic characteristics and nutritional value of dishes using new culinary techniques. The importance of the culinary techniques learned as an innovative tool in the development of the HoReCa industry and their impact on the environment.	x				x		x	x		
54	Building and Organising Staff Teams	The nature and typologies of teams. Roles and attitudes in a team. Characteristics of an effective team. Sociopsychological phenomena and processes accompanying team work. Benefits and challenges resulting from diversity in a team. Team management. The role of the team leader. Organizing team work. Assigning goals and tasks. Preventing employee overload. Dysfunctions in the team management process. Using sociometry for the purposes of building effective teams.				x		x		x		x
55	English B2 module IV	Fourth part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
56	Technology and Analysis of Selected Plant-based and Animal-based Products	Characteristics and technological suitability of plant raw materials. Modified starches. By-products of the fruit and vegetable industry. Nutritional and technological value of meat, Technological processes in the production of meat products, functional additives used in the meat industry, methods for preserving meat and meat products.		x			x	x	x			
57	English B2+ module IV	Fourth part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
58	Digital Marketing	Concept of a company's marketing activities within the digital environment, addressing the development of technology, shifting consumer behaviour as well as the tools and strategies for effective online communication. Trends, analytical tools and methods used to build brand value in the digital ecosystem.			x	x		x		x		
59	Biological Risk Analysis in Food Production	Food safety management. Components of risk analysis. Risk analysis and food law requirements. Risk analysis in food quality and safety management systems. Quantitative and qualitative risk assessment tools. Risk analysis application in food technology. Estimation of risk associated with specific technological processes. Risk minimization methods.		x	x		x				x	
60	English C1 module IV	Fourth part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
61	Engineering Calculations	Practical approach to process analysis and optimization. Solving equations by graphical method. Iterative solution of nonlinear equations. Numerical calculation of definite integrals using methods: rectangles, trapezoids, and Simpson's rule. Graphical data analysis. Identifying and forecasting trends using correlation and regression in a spreadsheet.	x				x					
62	Innovation and Intellectual Property Protection in the HoReCa Industry	Innovation ecosystem. Opportunities for development or implementation of innovations. Determinants of technology development and methods of assessing technology readiness for commercialization. Models of technology transfer, risks in technology transfer, financing the process of technology transfer and commercialization. Protection of intellectual property in terms of copyright and industrial property rights. Strategic dimension of intellectual property protection. Legal issues of marketing and advertising, protection of personal data.			x	x	x		x			x
63	Food and Beverages of the World	World food diversity – regional cuisines, oriental food, culinary traditions of different cultures. Non-alcoholic beverages as part of culinary heritage. Food of the world on a plate – analysis of ingredients, tastes, nutritional value and production methods. Characteristics of alcoholic beverages – raw materials, production methods, regional variations, fermentation and distillation techniques, chemical and sensory characteristics, quality requirements, technological aspects, and process control systems.	x				x		x		x	
64	Dietetics	Analysis of cases in terms of meal planning, analysis of one's own diet, composing individual diets considering preferences and dietary restrictions, nutrition in civilisational diseases.	x				x		x		x	
65	German B2 module IV	Fourth part of a business language course with elements of industry-specific terminology; development of all language skills; development and improvement of soft skills oriented around the future working environment of the university graduate.							x	x	x	
66	Managerial Workshops	Development of managerial competences, effective communication and team motivation. Operational planning, cost control and process optimization. Management of service quality, building relationships with customers and creating a brand image. Resolving conflicts, making decisions under pressure and crisis management. Negotiations with suppliers, marketing strategies and implementation of modern technologies. Personal development of a manager, building a personal brand and preparation for running your own business.				x		x		x	x	

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
67	Food Storage	Food storage, packaging, nutritional and health claims, customer communication through packaging, food labeling systems.	x	x	x			x				
68	Internship 1.1	Develop skills and competences through practical application of knowledge acquired during studies in the conditions of real functioning of a catering company. Familiarize student with the organization and functioning of a catering company: planning technological processes of preparing meals based on nutritional standards, control of raw materials and semi-finished products, supervision of the heat treatment process and distribution, optimization of logistics of collective catering, analysis of technological efficiency.							x	x	x	x
69	Career Management	Determinants of the modern labor market. Work and professional development. Managing employee development in an organization. Building career paths. Career - types and models of careers. Career planning. Managing competencies in an organization. Building competency models and matrices. Talent management in an organization. Coaching and mentoring in career building. Career management in the digital age. Professional image and personal branding.						x	x	x		x
70	Product and Process Design in the HoReCa Industry	Fundamentals of the project management. Development of a product concept for the HoReCa industry and a technological line and process, including the product life cycle. Creation of a product prototype. Development of the implementation of the production of the designed product and preparation of the assumption of a business plan, taking into account the stages of establishing a company in the HoReCa industry and based on the market rules of the company's operation. Development of a strategy for introducing and maintaining the product on the market, including the path of intellectual property protection.	x	x	x		x	x		x	x	x
71	Produkcja żywności prozdrowotnej	Characteristics of bioactive food components and their impact on human health. Health-promoting food in the prevention of lifestyle diseases. Raw materials and technology of health-promoting food, modern methods of their processing and preservation. Health-promoting food in the light of legal standards. Nutritional and health claims. Project of new food products with bioactive components.	x						x		x	
72	Internship 1.2	Develop skills and competences through practical application of knowledge acquired during studies in the conditions of real functioning of a catering company. Familiarize student with the organization and functioning of a catering company: planning technological processes of preparing meals based on nutritional standards, control of raw materials and semi-finished products, supervision of the heat treatment process and distribution, optimization of logistics of collective catering, analysis of technological efficiency.							x	x	x	x
73	Innovations in HoReCa: Zero Waste as a Challenge and Opportunity	Innovation ecosystem. Opportunities for development or implementation of innovations. Determinants of technology development and methods of assessing technology readiness for commercialization. Models of technology transfer, risks in technology transfer, financing the process of technology transfer and commercialization. Protection of intellectual property in terms of copyright and industrial property rights. Strategic dimension of intellectual property protection. Legal issues of marketing and advertising, protection of personal data.	x			x			x	x		

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
74	Multilingual Communication in the HoReCa Industry	Multilingualism and its importance in the HoReCa sector. The specificity of industry terminology in different languages. Communication with clients. Etiquette in the HoReCa industry. Practical language skills. Problem-solving in communication. Case analysis and market experiences.							x	x	x	
75	Designing Your Own Business	The principles of starting and running a business in Poland, business environment analysis and the development of relationships with customers and suppliers; accounting and tax settlements, including income tax and VAT; employment of workers and individuals under civil law contracts, payroll calculation, social security (ZUS) contributions, and reporting obligations to tax authorities and ZUS.				x		x		x		x
76	Undesirable Food Components	Undesirable substances naturally occurring in food, including food allergens; compounds formed in food during manufacture, processing, storage, transport, preparation for consumption of food.	x	x	x		x					
77	Social Media Marketing in the HoReCa Sector	The use of social media in the marketing strategy of a HoReCa enterprise. The use of various platforms available on the Internet and the development of skills related to running virtual brand communities in a way that increases consumer engagement. Social media and their classification. Characteristics of the different types in the context of use in marketing.						x	x			
78	Internships 2.1	Develop skills and competences through practical application of knowledge acquired during studies through practical training on the activities of institutions related to food quality control and assessment. The internship allows the student to become familiar with the structure and functioning of units of the institutional environment of the food industry, such as food testing laboratories or offices supervising its safety. The student deepens knowledge and skills on food quality control and safety methods, learns the principles of functioning of food safety systems (e.g. HACCP, GHP, GMP) in enterprises, and also becomes familiar with the scope of duties at various job positions in these units.						x	x	x	x	x
79	Internships 2.2	Develop skills and competences through practical application of knowledge acquired during studies in the real-life conditions of a HoReCa company. Familiarize student with operational management of catering activities - planning and coordination of deliveries, inventory control, cost and margin analysis, management of a team of kitchen and service employees. Learning about quality management systems and customer service, participation in the preparation of offers, optimization of staff work. Analysis of operational efficiency, co-creation of work schedules, response to crisis situations.						x	x	x	x	x
80	Final Project	Analysis of the current state of knowledge in the field of the thesis topic. Development of the work concept, formulation of the main goal and scope of the work. Conducting research and analyzing the research results. Preparation of the content of the bachelor's thesis according to the guidelines of the academic supervisor.					x			x	x	
81	Diploma Seminar	Presentation of the current state of knowledge related to the topic of the diploma thesis, proposal of a research schedule and applied analytical methods, discussion and discussion of the obtained research results. Discussion of the rules of the competency exam, "trial" competency exam.					x		x		x	

No.	Course name	Program content	1MZZ1	1MZZ2	1MZZ3	1MZZ4	1MZZ5	1MZZ6	1MZZ7	1MZZ8	1MZZ9	1MZZ10
82	PBL Project	Interdisciplinary product and process design in the HoReCa industry in semester VI, in the field of food technology, management and related. Integration of various aspects related to the design of products and processes in the HoReCa industry, identification of consumer needs, design and planning the implementation of innovative solutions aimed at improving the quality of services and products, marketing and promotion of products.	x	x		x	x	x		x	x	

ECTS - subjects

No.	Course name	ECTS	Subjects in the field of humanities and social sciences	Elective subjects	Profile items	Classes in a foreign language
1	Food Chemistry and Analysis	7			7	
2	Business Communication	5	5		5	
3	Fundamentals of Management with Elements of Ethics	6	6		6	
4	Food Microbiology	5			5	
5	Fundamentals of Technology in the HoReCa Industry	4			4	
6	Practical Spreadsheet Applications	3			3	
7	Catering Project	2		2		
8	English B2 module I	2		2		
9	Fundamentals of Food Technology	7			7	
10	Management of Food Production Systems	2		2		
11	Commercial Companies Law	2		2		
12	Ethical Aspects in Food Production	2		2		
13	English B2+ module I	2		2		
14	Human Nutrition	4				
15	English C1 module I	2		2		
16	Brand Creation in the HoReCa sector	2		2		
17	Clean Label	2		2		
18	Information Technology	4			4	
19	German B2 module I	2		2		
20	Basics of Marketing	5	5			

No.	Course name	ECTS	Subjects in the field of humanities and social sciences	Elective subjects	Profile items	Classes in a foreign language
21	Economics	4	4			
22	Employee Behavior	2		2		
23	Food Law	6				
24	English B2 module II	2		2		
25	Food Pigments	2		2		
26	English B2+ module II	2		2		
27	Designing New HoReCa Products	2		2		
28	Macro and Micronutrients in Food	2		2		
29	Human Resource Management	7	7		7	
30	Forms of Financial Support for the Catering Business	2		2		
31	Sales Techniques	4	4		4	
32	English C1 module II	2		2		
33	Organic Food Production	2		2		
34	Managerial Accounting	2	2		2	
35	Food in Culture	2		2		
36	Market Research for Food Services	2		2		
37	German B2 module II	2		2		
38	Management Systems	5	5		5	
39	Antioxydants in Food	3		3		
40	English B2 module III	2		2		
41	Business Plan	4	4		4	

No.	Course name	ECTS	Subjects in the field of humanities and social sciences	Elective subjects	Profile items	Classes in a foreign language
42	Sustainable Marketing in the HoReCa Industry	3		3		
43	Entrepreneurship	3		3		
44	Probiotics, Prebiotics, Postbiotics	3		3		
45	English B2+ module III	2		2		
46	Marketing Communications	4	4		4	
47	English C1 module III	2		2		
48	Visualization in the HoReCa Industry	3		3		
49	Craft Alcoholic Beverages	3		3		
50	Sustainable Food Production in the HoReCa Industry	5				
51	German B2 module III	2		2		
52	Instrumental and Sensory Snalysis of Food Products	6			6	
53	Trends in Food	3				
54	Building and Organising Staff Teams	5	5			
55	English B2 module IV	3		3		
56	Technology and Analysis of Selected Plant-based and Animal-based Products	3		3		
57	English B2+ module IV	3		3		
58	Digital Marketing	4	4		4	
59	Biological Risk Analysis in Food Production	3		3		
60	English C1 module IV	3		3		
61	Engineering Calculations	3		3		
62	Innovation and Intellectual Property Protection in the HoReCa Industry	3			3	

No.	Course name	ECTS	Subjects in the field of humanities and social sciences	Elective subjects	Profile items	Classes in a foreign language
63	Food and Beverages of the World	3		3		
64	Dietetics	4				
65	German B2 module IV	3		3		
66	Managerial Workshops	3			3	
67	Food Storage	5			5	
68	Internship 1.1	12		12	12	
69	Career Management	4		4		
70	Product and Process Design in the HoReCa Industry	8		8	8	
71	Produkcja żywności prozdrowotnej	4		4		
72	Internship 1.2	12		12	12	
73	Innovations in HoReCa: Zero Waste as a Challenge and Opportunity	2				2
74	Multilingual Communication in the HoReCa Industry	4		4		
75	Designing Your Own Business	4		4		
76	Undesirable Food Components	4		4		
77	Social Media Marketing in the HoReCa Sector	4		4		
78	Internships 2.1	12		12	12	
79	Internships 2.2	12		12	12	
80	Final Project	10		10	10	
81	Diploma Seminar	5				
82	PBL Project	3			3	

ECTS indicators

Name	Value
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Methods of verifying and assessing learning outcomes

Verification of the achieved learning outcomes requires the use of diverse forms of student assessment, appropriate to the categories of knowledge, skills and social competences to which these outcomes relate. The selection of appropriate tools also depends on the specifics of the subject and the form of conducting courses and is described in each case in the cards of individual subjects.

Achievement of the required learning outcomes will be verified by:

- written works (exams, colloquia, reports, essays, projects, posters, diploma thesis, etc.),
- oral statements (oral knowledge tests, public appearances, e.g. delivering a paper, presentation, etc.),
- practical and/or project tasks (team and individual),
- observation and assessment of students' activity during classes,
- self-assessment and peer assessment of students (especially in the case of team projects),
- competency exam and diploma exam.

Verification may be formative (partial, repeatedly during course) and/or summative (final grade).

The final result of the verification will be given in the applicable grading scale in accordance with the Lodz University of Technology Study Regulations.

The above-mentioned methods and techniques for verifying subject-specific learning outcomes will be used both during courses at the university and in companies during study visits, internships, projects and the implementation of diploma theses. In practice, the subject manager and the team implementing the subject are responsible for verifying subject-specific learning outcomes.

A subject card is developed for each subject specified in the study plan, containing, among others:

- subject-specific learning outcomes, depending on the form of classes conducted, include knowledge/skills/social competences,
- methods for verifying subject-specific learning outcomes adapted to the category of the learning outcome,
- subject-specific learning outcomes, knowledge/skills/social competences defined for the entire field of study, the achievement of which is achieved through subject-specific outcomes,
- forms and conditions for passing the subject.

In addition to the information included in the subject card, in accordance with § 14 section 2 of the Study Regulations at the Lodz University of Technology, each teacher will be obliged to discuss the content of the subject card during the first class and present students the card of the conditions for implementing the subject, which includes the conditions for passing and prerequisites.

The element that will allow for the verification of the student's achievement of the course-specific learning outcomes will also be a competency exam conducted in diploma semester. The aim of this exam is to verify the knowledge and skills of students in all three areas described in Bloom's taxonomy, which creates a holistic form of education.

The competency exam will be based on a case study and will be conducted by a committee appointed by the Vice-Dean for Student Affairs. The result of the competency exam becomes part of the grade for studies, in accordance with the Lodz University of Technology Study Regulations. Learning outcomes are also verified in the diploma thesis, which is an integral part of the study program.

Professional internships

During the 6th and 7th semesters, students are required to complete a minimum 6-month internship. Internships are held in industrial workplaces specializing in food production and catering organization, in gastronomy or hotel industry. Their aim is to introduce the scope of the unit's activities, its organizational and legal structure, methods of operation and production process to students. Interns are to familiarize themselves with and comply with the regulations, occupational health and safety regulations; get to know the scope of duties, basic procedures and work methods implemented at individual positions; improve their skills in organizing and planning their own work and cooperating with a team of employees. After completing the internship, students prepare a written report on the tasks assigned in the company/plant. The number of ECTS points assigned to the professional internship is 24. The internship is divided into two semesters.

Specializations/degree paths offered within the study program

Characteristics of the course

Graduate profile

Manager of Food and Nutrition is implemented in cooperation with two faculties of the Lodz University of Technology: The Faculty of Biotechnology and Food Sciences and the Faculty of Organization and Management. The indicated cooperation allows for the implementation in the study program of assumptions relating to both specialist knowledge and skills regarding food and nutrition as well as competences in the field of management and marketing in production, distribution and services related to food and nutrition.

A Food and Nutrition Manager has an interdisciplinary education covering competences in the field of nutrition, production technology and food quality assessment as well as production management and service marketing. A graduate is prepared to work as a manager specializing in food production and organization of nutrition, mainly working in individual, network and specialist catering as well as hotel and agritourism, etc. This is a professional who is able to combine practical skills and creativity with knowledge of modern food production techniques, knowledge of ingredients and principles of nutrition and trends in their development with real knowledge of the principles of this market. The graduate knows and understands the challenges of sustainable development and has a solid technical foundation, as well as interpersonal and digital skills and the ability to think strategically, creatively and critically. The graduate is prepared to lead a team of employees, understands the principles of economics and marketing of services related to food and human nutrition. The graduate language competences in the fields of science and scientific disciplines appropriate to the field of study, in accordance with the requirements specified for level B2 of the Common European Framework of Reference for Languages.

The graduate understands the need for continuous expansion of professional competences, is able to increase the potential of their activities through cooperation in a professional group and with the environment, demonstrates responsibility for managing human potential and for the quality of manufactured products in connection with the impact on health and the environment. As part of the studies, graduates acquire skills that allow them to plan, organize and implement projects in the food sector, in particular:

- modern food production based on quality control systems,
- designing diets in accordance with nutritional and dietary recommendations,
- managing a company in the food industry, in particular catering, hotel, agritourism, etc.,
- developing action plans, development and investment of the company,
- preparing a commercial offer for various groups of recipients,
- promotional and marketing activities,
- managing a team of employees,
- running one's own business and creating and implementing innovations.

Food and Nutrition Manager is a specialist with practical training and professional competences that enable him to take up employment in various fields related to food and nutrition, including production companies, food and beverages, individual, network and specialist catering enterprises, hotel industry, leisure and sports centers and recreation centers, organizations and institutions dealing with food and nutrition control and consumer protection, research and consulting units in the field of food market, institutions dealing with nutritional education.

Graduates can develop their professional competences and also continue their education in second-cycle studies at the Faculty of Biotechnology and Food Sciences or the Faculty of Organization and Management of the Lodz University of Technology, or at other universities and related fields within and outside the university.

The relationship between the field of study and the university's strategy

Education in the field of Food and Nutrition Manager is consistent with the mission of the Lodz University of Technology formulated in the University strategy for 2025-2030:

- it ensures freedom of research and discussion by conducting educational and research activities, including interdisciplinary ones, aimed at improving the quality of life of society. For this purpose, it uses the most modern analytical equipment and technological devices, in connection with the high research and development potential of the region and the developed food sector, focused on innovative production and distribution of food, meeting the expectations of modern consumers;
 - it offers modern education in the combined area of technical, agricultural and economic sciences, which is focused on teaching at the highest level and educating students as future staff for the development of the economy, science and administration based on knowledge and innovation;
 - it develops local and global cooperation by promoting the values and patterns of national culture.
- At the same time, the field of Food and Nutrition Manager is the implementation of the goal set out in the TUL strategy in the

field of Sustainability, as it supports conducting scientific research and educating staff who support the achievement of sustainable development goals.

Educational objectives and employment and continuing education opportunities

The Food and Nutrition Manager study program has been modified to address current and future socio-economic challenges. Its main goal is to educate specialists who can combine interdisciplinary knowledge in the field of food, nutrition and management, thus responding to the growing needs of the labor market. The educational objectives in the modified study program focus on providing students with both theoretical knowledge and practical skills in the field of food production technology, marketing, quality management, process control and sustainable development. Graduates of the Food and Nutrition Manager program will gain analytical, technical and managerial competences that will allow them to make effective decisions in a dynamically changing work environment. Another important aspect is the development of skills necessary in modern organizational structures and in the context of the complexity of food systems, which include teamwork, communication, the ability to adapt to new conditions, critical thinking and problem-solving. Graduates will acquire the above skills during project classes, exercises and mandatory internships. Graduates will be prepared to analyze data and reflect on the activities performed, which is crucial in the face of constantly changing legal regulations concerning food, the development of new production technologies and growing quality requirements.

The learning program in the field of Food and Nutrition Manager is also adapted to meet the challenges related to green and digital transformation. Since the food industry and HoReCa are constantly evolving, facing challenges such as climate change, market globalization, as well as changing consumer preferences and expectations regarding food quality and safety, the study program responds to the needs related to environmental protection and modern management technologies. The program has introduced subjects related to ecology, sustainable food production and innovations in the HoReCa industry, which will allow graduates to prepare ready to take conscious actions in such dynamic conditions in which the economy currently operates. The modified program also considers current digital trends - students will gain knowledge in the field of information management, data analysis and the use of digital tools in the process of food production and marketing. Such preparation of graduates will give them a competitive advantage on the labor market, particularly in the context of the growing role of technology in the food industry, which is a central focus of the program. The curriculum also includes the development of language competencies, especially English language proficiency at the B2 level, which enables graduates to operate effectively in an international professional environment.

Employment opportunities for graduates of the Food and Nutrition Manager program are diverse and span various sectors of the economy. Graduates can find employment in food industry enterprises in departments such as production and quality, marketing, or logistics. They are also well-prepared to work in the HoReCa sector, consulting firms, control and research institutions, as well as in public administration. Thanks to the extensive practical component of the program (e.g., professional internships in the 6th and 7th semesters), students gain hands-on work experience, which often leads to employment with the companies they collaborated with during their studies.

Further education after completing a bachelor's degree in Food and Nutrition Manager is possible in related fields within food and nutrition sciences, as well as in master's programs in management, nutrition innovation, or food technology. The interdisciplinary training also enables the pursuit of an academic career—students may participate in research projects and pursue doctoral studies at academic institutions both in Poland and abroad.

The study program in Food and Nutrition Manager is a well-designed and modern educational path that responds to the real needs of the labor market and prepares graduates to take on responsible professional roles in a changing world. Its comprehensive structure and diverse teaching methods ensure a high standard of education and real opportunities for both professional and academic career development.

Description of the process and outcome of consultations on the proposed study program with the socio-economic environment

During the process of modifying the study program for the Food and Nutrition Manager degree, extensive consultations were conducted with representatives of the socio-economic environment. This included labor market analysis, enterprise surveys, as well as the establishment and active involvement of a Business Council. A review of current job offers in the HoReCa sector and the food industry helped identify key competencies and skills sought by employers, such as quality management systems, knowledge of food law, organizational and leadership skills, teamwork and communication abilities, proficiency in English, and the use of digital and analytical tools.

The results of the surveys conducted among entrepreneurs in the HoReCa and food industry sectors highlighted the need for students to develop expertise in areas such as food law, cost analysis, project management, creativity, stress resilience, sales techniques, and quality systems. A Business Council was also established at the Faculty of Biotechnology and Food Sciences specifically for the Food and

Nutrition Manager program. Its members provided a detailed assessment of the revised curriculum, emphasizing its interdisciplinary nature and alignment with labor market needs, its strong focus on practical student training, the inclusion of sustainable development principles and modern technologies, as well as the need to further enhance students' digital competencies and practical skills.

A key component of the curriculum revision process also involved consultations with students, who expressed the need to increase the number of practical classes, organize meetings with industry professionals, better tailor internship opportunities to the program's profile, strengthen IT competencies (e.g., a more practical approach to Excel rather than Python), and offer more remedial classes in core subjects. These consultations revealed the need for a stronger connection between the academic program and economic practice, the development of future-oriented skills (such as digitalization, analytics, and career flexibility), and the enhancement of classes involving industry practitioners.

The feedback from the socio-economic environment was incorporated into the revised curriculum, thereby increasing graduates' chances of successfully entering the labor market.

Description of competencies expected from a candidate applying for admission to studies

Admission to the first-cycle (bachelor's) degree program in Food and Nutrition Manager is carried out through a qualification procedure based on the results of the secondary school-leaving examination (Matura) or an equivalent certificate obtained outside the Polish education system. The required subjects considered in the qualification process include mathematics, a foreign language, and one of the following subjects chosen by the candidate: physics, chemistry, or biology.

Admission within the standard recruitment process is based on a ranking list (excluding winners and finalists of national Olympiads and competitions), prepared by the University Admissions Committee. The ranking is determined by converting the examination results from the required subjects into points according to the criteria specific to this program.

Admission to the first-cycle degree program in Food and Nutrition Manager—which is included on the list of programs eligible for recognition of prior learning—is also possible through the recognition of learning outcomes procedure. In this case, admission is granted following a qualification process based on a formal decision confirming the learning outcomes acquired outside the formal education system.

The unit organizing education

Faculty of Biotechnology and Food Sciences

Education program

Semester 1

Course	Number of hours	ECTS points	Form of verification	Obligatory
Food Chemistry and Analysis	Tutorials: 15 Laboratory classes: 60 Lecture: 30	7	Exam	Obligatory
Business Communication	Tutorials: 60 Lecture: 15	5	Graded assignment	Obligatory
Fundamentals of Management with Elements of Ethics	Tutorials: 30 Project work: 15 Lecture: 30	6	Exam	Obligatory
Food Microbiology	Laboratory classes: 45 Lecture: 30	5	Graded assignment	Obligatory
Fundamentals of Technology in the HoReCa Industry	Project work: 45 Lecture: 10	4	Graded assignment	Obligatory
Practical Spreadsheet Applications	Project work: 45	3	Graded assignment	Obligatory
Sum	430	30		

Semester 2

Course	Number of hours	ECTS points	Form of verification	Obligatory
Fundamentals of Food Technology	Tutorials: 10 Laboratory classes: 60 Lecture: 30	7	Exam	Obligatory
Human Nutrition	Laboratory classes: 10 Project work: 15 Lecture: 30	4	Graded assignment	Obligatory

Course	Number of hours	ECTS points	Form of verification	Obligatory
Information Technology	Laboratory classes: 45 E-learning: 30	4	Graded assignment	Obligatory
Basics of Marketing	Tutorials: 15 Project work: 30 Lecture: 15	5	Exam	Obligatory
Economics	Tutorials: 30 Lecture: 30	4	Graded assignment	Obligatory
Foreign Language Module 1		2	Graded assignment	Obligatory group
The student chooses one module from the group.				
English B2 module I	Tutorials: 30	2	Graded assignment	Optional
English B2+ module I	Tutorials: 30	2	Graded assignment	Optional
English C1 module I	Tutorials: 30	2	Graded assignment	Optional
German B2 module I	Tutorials: 30	2	Graded assignment	Optional
Elective Courses 1		2	Graded assignment	Obligatory group
The student chooses 1 subject.				
Catering Project	Project work: 20	2	Graded assignment	Optional
Ethical Aspects in Food Production	Project work: 20	2	Graded assignment	Optional
Clean Label	Project work: 10 Lecture: 10	2	Graded assignment	Optional
Elective Courses 2		2	Graded assignment	Obligatory group
The student chooses 1 subject.				
Management of Food Production Systems	Project work: 10 Lecture: 10	2	Graded assignment	Optional
Commercial Companies Law	Project work: 10 Lecture: 10	2	Graded assignment	Optional
Brand Creation in the HoReCa sector	Project work: 10 Lecture: 10	2	Graded assignment	Optional

Course	Number of hours	ECTS points	Form of verification	Obligatory
Physical Education 1	Tutorials: 30	0	Pass	Obligatory
Sum	450	30		

Semester 3

Course	Number of hours	ECTS points	Form of verification	Obligatory
Food Law	Project work: 45 Lecture: 45	6	Exam	Obligatory
Human Resource Management	Tutorials: 15 Project work: 30 Lecture: 30	7	Exam	Obligatory
Sales Techniques	Tutorials: 30 Project work: 15 Lecture: 15	4	Graded assignment	Obligatory
Managerial Accounting	Tutorials: 30	2	Graded assignment	Obligatory
Management Systems	Tutorials: 30 Project work: 15 Lecture: 30	5	Graded assignment	Obligatory
Foreign Language Module 2		2	Graded assignment	Obligatory group
The student chooses one module from the group.				
English B2 module II	Tutorials: 30	2	Graded assignment	Optional
English B2+ module II	Tutorials: 30	2	Graded assignment	Optional
English C1 module II	Tutorials: 30	2	Graded assignment	Optional
German B2 module II	Tutorials: 30	2	Graded assignment	Optional
Elective Courses 3		2	Graded assignment	Obligatory group
The student chooses 1 subject.				

Course	Number of hours	ECTS points	Form of verification	Obligatory
Food Pigments	Laboratory classes: 20 Lecture: 10	2	Graded assignment	Optional
Macro and Micronutrients in Food	Tutorials: 10 Laboratory classes: 10 Lecture: 10	2	Graded assignment	Optional
Organic Food Production	Project work: 20 Lecture: 10	2	Graded assignment	Optional
Food in Culture	Project work: 20 Lecture: 10	2	Graded assignment	Optional
Elective Courses 4		2	Graded assignment	Obligatory group
The student chooses 1 subject.				
Employee Behavior	Project work: 20 Lecture: 10	2	Graded assignment	Optional
Designing New HoReCa Products	Project work: 20 Lecture: 10	2	Graded assignment	Optional
Forms of Financial Support for the Catering Business	Project work: 20 Lecture: 10	2	Graded assignment	Optional
Market Research for Food Services	Tutorials: 15 Lecture: 15	2	Graded assignment	Optional
Physical Education 2	Tutorials: 30	0	Pass	Obligatory
Sum	450	30		

Semester 4

Course	Number of hours	ECTS points	Form of verification	Obligatory
Business Plan	Project work: 30 Lecture: 30	4	Graded assignment	Obligatory

Course	Number of hours	ECTS points	Form of verification	Obligatory
Marketing Communications	Tutorials: 15 Project work: 15 Lecture: 15	4	Exam	Obligatory
Sustainable Food Production in the HoReCa Industry	Tutorials: 15 Project work: 15 Lecture: 30	5	Graded assignment	Obligatory
Instrumental and Sensory Snalysis of Food Products	Laboratory classes: 60 Lecture: 30	6	Exam	Obligatory
Trends in Food	Project work: 15 Lecture: 30	3	Graded assignment	Obligatory
Foreign Language Module 3		2	Graded assignment	Obligatory group
The student chooses one module from the group.				
English B2 module III	Tutorials: 30	2	Graded assignment	Optional
English B2+ module III	Tutorials: 30	2	Graded assignment	Optional
English C1 module III	Tutorials: 30	2	Graded assignment	Optional
German B2 module III	Tutorials: 30	2	Graded assignment	Optional
Elective Course 5		3	Graded assignment	Obligatory group
The student chooses 1 subject.				
Antioxydants in Food	Laboratory classes: 15 Project work: 20 Lecture: 10	3	Graded assignment	Optional
Probiotics, Prebiotics, Postbiotics	Project work: 30 Lecture: 15	3	Graded assignment	Optional
Craft Alcoholic Beverages	Laboratory classes: 30 Lecture: 15	3	Graded assignment	Optional
Elective Courses 6		3	Graded assignment	Obligatory group
The student chooses 1 subject.				
Sustainable Marketing in the HoReCa Industry	Project work: 45	3	Graded assignment	Optional

Course	Number of hours	ECTS points	Form of verification	Obligatory
Entrepreneurship	Project work: 45	3	Graded assignment	Optional
Visualization in the HoReCa Industry	Project work: 45	3	Graded assignment	Optional
Physical Education 3	Tutorials: 30	0	Pass	Obligatory
Sum	450	30		

Semester 5

Course	Number of hours	ECTS points	Form of verification	Obligatory
Building and Organising Staff Teams	Tutorials: 15 Project work: 15 Lecture: 30	5	Graded assignment	Obligatory
Digital Marketing	Tutorials: 30 Project work: 15 Lecture: 15	4	Graded assignment	Obligatory
Innovation and Intellectual Property Protection in the HoReCa Industry	Project work: 30 Lecture: 15	3	Graded assignment	Obligatory
Dietetics	Project work: 30 Lecture: 30	4	Graded assignment	Obligatory
Managerial Workshops	Project work: 45	3	Graded assignment	Obligatory
Food Storage	Laboratory classes: 30 Project work: 15 Lecture: 30	5	Exam	Obligatory
Foreign Language Module 4		3	Exam	Obligatory group
The student chooses one module from the group.				
English B2 module IV	Tutorials: 30	3	Exam	Optional
English B2+ module IV	Tutorials: 30	3	Exam	Optional
English C1 module IV	Tutorials: 30	3	Exam	Optional

Course	Number of hours	ECTS points	Form of verification	Obligatory
German B2 module IV	Tutorials: 30	3	Exam	Optional
Elective Courses 7		3	Graded assignment	Obligatory group
The student chooses 1 subject.				
Technology and Analysis of Selected Plant-based and Animal-based Products	Laboratory classes: 30 Lecture: 15	3	Graded assignment	Optional
Biological Risk Analysis in Food Production	Laboratory classes: 15 Project work: 20 Lecture: 10	3	Graded assignment	Optional
Engineering Calculations	Tutorials: 30 Project work: 15	3	Graded assignment	Optional
Food and Beverages of the World	Laboratory classes: 20 Project work: 5 Lecture: 20	3	Graded assignment	Optional
Sum	420	30		

Semester 6

Course	Number of hours	ECTS points	Form of verification	Obligatory
Product and Process Design in the HoReCa Industry	Project work: 120	8	Graded assignment	Obligatory subjects to choose from
Innovations in HoReCa: Zero Waste as a Challenge and Opportunity	E-learning: 30	2	Graded assignment	Obligatory
Elective Courses 8		4	Graded assignment	Obligatory group
The student chooses 1 subject.				
Produkcja żywności prozdrowotnej	Project work: 45 Lecture: 15	4	Graded assignment	Optional
Multilingual Communication in the HoReCa Industry	Tutorials: 60	4	Graded assignment	Optional

Course	Number of hours	ECTS points	Form of verification	Obligatory
Undesirable Food Components	Laboratory classes: 45 Lecture: 15	4	Graded assignment	Optional
Elective Courses 9		4	Graded assignment	Obligatory group
The student chooses 1 subject.				
Career Management	Project work: 60	4	Graded assignment	Optional
Designing Your Own Business	Project work: 60	4	Graded assignment	Optional
Social Media Marketing in the HoReCa Sector	Project work: 60	4	Graded assignment	Optional
Obieralne praktyki studenckie 1		12	Pass	Obligatory group
The student chooses 1 subject.				
Internship 1.1	Internship: 0	12	Pass	Optional
Internship 1.2	Internship: 0	12	Pass	Optional
Sum	270	30		

Semester 7

Course	Number of hours	ECTS points	Form of verification	Obligatory
Obieralne praktyki studenckie 2		12	Pass	Obligatory group
The student chooses 1 subject.				
Internships 2.1	Internship: 0	12	Pass	Optional
Internships 2.2	Internship: 0	12	Pass	Optional
Final Project	Diploma Thesis: 0	10	Pass	Obligatory subjects to choose from
Diploma Seminar	Seminar: 60	5	Graded assignment + exam	Obligatory
PBL Project	Project work: 45	3	Graded assignment	Obligatory
Sum	105	30		