Faculty of Food Engineering – Bachelor studies
Subject area code: 0721
Bachelor's Study programmes: **Food Engineering**, **Food Control and Expertise**, and **Consumer and Environmental Protection**
Field: Food Engineering (0721)
Level: Bachelor's (4 years)
Language of instruction: English

!!!!For the Food Engineering, Food Control and Expertise, and Consumer and Environmental Protection study programmes, the 1st and 2nd years of study are common (shared across these programs).

Code	***Discipline***	***ECTS***	***Semester W/S***	***Year of study***
Food Engineering, Food Control and Expertise, and Consumer and Environmental Protection – 1st and 2nd year of study				
IPA.01.F.DOB.1	Special mathematics	6	W	1
IPA.02.F.DOB.1	Physics (I)	4	W	1
IPA.05.S.DOB.1	Ecology and environmental protection	4	W	1
IPA.06.F.DOB.1	Applied Informatics (Applied Computer Science)	4	W	1
IPA.07.F.DOB.1	Inorganic and analytical chemistry (I)	3	W	1
IPA.09.C.DOB.1	Sport (I)	2	W	1
IPA.14.S.DOB.1	Elements of Electrical Engineering	4	W	1
IPA.16.C.DOB.1	English (I)	3	W	1
	Total credits	**30**		
IPA.03.F.DOB.2	Physics (II)	4	S	1
IPA.04.F.DOB.2	Organic chemistry I	4	S	1
IPA.08.F.DOB.2	Inorganic and Analytical Chemistry (II)	3	S	1
IPA.10.C.DOB.2	Sport (II)	2	S	1
IPA.11.F.DOB.2	Computer-Aided Graphics	4	S	1
IPA.12.F.DOB.2	Physical and Colloidal Chemistry	5	S	1
IPA.13.S.DOB.2	Food Chemistry	3	S	1
IPA.15.S.DOB.2	Elements of Mechanical Engineering	3	S	1
IPA.17.C.DOB.2	English (II)	2	S	1
	Total credits	**30**		
IPA.01.F.DOB.3	General Microbiology	4	W	2
IPA.02.S.DOB.3	Food Safety (I)	4	W	2
IPA.03.F.DOB.3	Organic chemistry (II)	4	W	2
IPA.04.S.DOB.3	Packaging, Labelling and Design in the Food Industry	4	W	2
IPA.06.S.DOB.3	Operations in the Food Industry (I)	5	W	2
IPA.19.S.DOP.3	Legislation in the Food Industry	3	W	2
IPA.20.S.DOP.3	Sensory Analysis	3	W	2
IPA.23.C.DFA.3	Sports (I)	3	W	2
	Total credits	**30**		

IPA.05.S.DOB.4	Biochemistry	4	S	2
IPA.08.S.DOB.4	Special Microbiology	3	S	2
IPA.09.S.DOB.4	General Technologies in the Food Industry	6	S	2
IPA.10.S.DOB.4	Food Safety (II)	4	S	2
IPA.11.S.DOB.4	Human Nutrition	4	S	2
IPA.07.S.DOB.4	Operations in the food industry (II)	5	S	2
IPA.12.S.DOB.4	Internship	2	S	2
IPA.14.C.DOP.4	English	2	S	2
	Total credits	**30**		
Food Engineering - 3rd and 4th year of study				
IPA.01.S.DOB.5	Traditional and Ecological Products	2	W	3
IPA.02.S.DOB.5	Equipment in the Food Industry (I)	4	W	3
IPA.04.S.DOB.5	Milling Technology	6	W	3
IPA.06.S.DOB.5	Technology of Wine, Vinegar and Distilled Beverages	6	W	3
IPA.08.S.DOB.5	Technologies in the Meat Industry (I)	6	W	3
IPA.10.S.DOB.5	Technologies in the Dairy Industry (I)	6	W	3
	Total credits	**30**		
IPA.03.S.DOB.6	Equipment in the Food Industry (II)	5	S	3
IPA.05.S.DOB.6	Baking Technology	5	S	3
IPA.07.S.DOB.6	Technology of Oil and Margarine	5	S	3
IPA.09.S.DOB.6	Technologies in the Meat Industry (II)	4	S	3
IPA.11.S.DOB.6	Technologies in the Dairy Industry (II)	3	S	3
IPA.12.C.DOB.6	Ethics and Academic Integrity	2	S	3
IPA.13.S.DOB.6	Internship	2	S	3
IPA.17.S.DOP.6	Instrumental Analysis	2	S	3
IPA.18.S.DOP.6	Food Rheology	2	S	3
	Total credits	**30**		
IPA.01.S.DOB.7	Falsification and Authentication	5	W	4
IPA.02.S.DOB.7	Food Preservation	6	W	4
IPA.05.S.DOB.7	Food Additives and Ingredients	5	W	4
IPA.06.S.DOB.7	Food quality and food control (I)	5	W	4
IPA.11.S.DOB.7	Hygiene of Companies in the Food Industry	3	W	4
IPA.14.S.DOP.7	Automation in the food industry	3	W	4
IPA.16.C.DOP.7	Management	3	W	4
	Total credits	**30**		
IPA.03.S.DOB.8	Gastrotechnics and Catering	4	S	4
IPA.04.S.DOB.8	Consumer Behavior	5	S	4
IPA.07.S.DOB.8	Food quality and food control (II)	4	S	4
IPA.08.S.DOB.8	Cold storage installations	5	S	4
IPA.09.S.DOB.8	Special Biotechnologies	5	S	4
IPA.10.S.DOB.8	Global food safety policies and strategies	3	S	4
IPA.12.S.DOB.8	Internship for bachelor's diploma	4	S	4
	Total credits	**30**		
Food Control and Expertize - 3rd and 4th year of study				
CEPA.01.S.DOB.5	Hygiene of Companies in the Food Industry	4	W	3
CEPA.02.S.DOB.5	Functional Foods	4	W	3
CEPA.03.S.DOB.5	Equipment in the Food Industry (I)	4	W	3

CEPA.06.S.DOB.5	Mineral and Radioactive Contamination of Agri-Food Products	4	W	3
CEPA.08.S.DOB.5	Vegetal Food Technology (I)	5	W	3
CEPA.10.S.DOB.5	Animal Food Technology (I)	5	W	3
CEPA.13.S.DOB.5	Methods and Techniques of Instrumental Analysis	4	W	3
	Total credits	**30**		
CEPA.04.S.DOB.6	Equipment in the Food Industry (II)	5	S	3
CEPA.05.S.DOB.6	Quality Management	3	S	3
CEPA.07.S.DOB.6	Food Rheology	2	S	3
CEPA.09.S.DOB.6	Vegetal Food Technology (II)	4	S	3
CEPA.11.S.DOB.6	Animal Food Technology (II)	4	S	3
CEPA.12.S.DOB.6	Food Analysis	4	S	3
CEPA.14.C.DOB.6	Ethics and Academic Integrity	2	S	3
CEPA.15.C.DOB.6	Internship in food unit	2	S	3
CEPA.19.C.DOP.6	Career Counseling and Guidance	2	S	3
CEPA.20.S.DOP.6	Ethics in the Food Industry	2	S	3
	Total credits	**30**		
CEPA.01.S.DOB.7	Special Biotechnologies	6	W	4
CEPA.02.S.DOB.7	Food Preservation	6	W	4
CEPA.05.S.DOB.7	Food Additives and Ingredients	5	W	4
CEPA.06.S.DOB.7	Vegetal Food Control	5	W	4
CEPA.16.C.DOP.7	Management	4	W	4
CEPA.17.C.DOP.7	Marketing	4	W	4
	Total credits	**30**		
CEPA.03.S.DOB.8	Gastrotechnics and Catering	4	S	4
CEPA.04.S.DOB.8	Consumer Behavior	5	S	4
CEPA.07.S.DOB.8	Animal Food Control	5	S	4
CEPA.08.S.DOB.8	Food Merchandising	4	S	4
CEPA.09.S.DOB.8	Food Safety and Expertise	4	S	4
CEPA.10.S.DOB.8	Global food safety policies and strategies	2	S	4
CEPA.11.S.DOB.8	Inspection and Official Control in the Food Industry	2	S	4
CEPA.12.S.DOB.8	Internship for bachelor's diploma	4	S	4
	Total credits	**30**		
Consumer And Environmental Protection - 3rd And 4th Year Of Study				
PCM.01.S.DOB.5	Protection and Conservation of Biodiversity and Environment	5	W	3
PCM.02.S.DOB.5	Environmental Audit	5	W	3
PCM.03.S.DOB.5	Equipment in the Food Industry (I)	4	W	3
PCM.06.S.DOB.5	Techniques for Investigating Environmental Factors	3	W	3
PCM.08.S.DOB.5	Vegetal Food Technology (I)	5	W	3
PCM.10.S.DOB.5	Animal Food Technology (I)	5	W	3
PCM.13.S.DOB.5	Food Authentication and Detection of Adulteration	3	W	3
	Total credits	**30**		
PCM.04.S.DOB.6	Equipment in the Food Industry (II)	5	S	3
PCM.05.S.DOB.6	Quality Management	3	S	3

PCM.07.S.DOB.6	Atmosphere and Environmental Quality	2	S	3
PCM.09.S.DOB.6	Vegetal Food Technology (II)	4	S	3
PCM.11.S.DOB.6	Animal Food Technology (II)	4	S	3
PCM.12.S.DOB.6	Food Analysis	4	S	3
PCM.14.C.DOB.6	Ethics and Academic Integrity	2	S	3
PCM.19.S.DOP.6	Environmental Inspection and Legislation	2	S	3
PCM.20.S.DOP.6	Operative Control Methods in Consumer Protection	2	S	3
PCM.21.C.DOP.6	Career Counseling and Guidance	2	S	3
	Total credits	**30**		
PCM.01.S.DOB.7	Biotechnology for Recycling Residual Products	4	W	4
PCM.02.S.DOB.7	Food Preservation	6	W	4
PCM.05.S.DOB.7	Food Additives and Ingredients	5	W	4
PCM.06.S.DOB.7	Food quality and food control (I)	5	W	4
PCM.08.S.DOB.7	Protective Factors in the Food Industry	4	W	4
PCM.14.S.DOP.7	Polluting Agents and Their Impact on the Environment and the Consumer	3	W	4
PCM.16.C.DOP.7	Management	3	W	4
	Total credits	**30**		
PCM.03.S.DOB.8	Food Merchandizing	4	S	4
PCM.04.S.DOB.8	Consumer Behaviour	5	S	4
PCM.07.S.DOB.8	Food Quality and Control (II)	5	S	4
PCM.09.S.DOB.8	Food Safety and Security in Consumer Protection	6	S	4
PCM.10.S.DOB.8	Global food safety policies and strategies	2	S	4
PCM.11.S.DOB.8	Waste Management and Circular Economy	4	S	4
PCM.12.S.DOB.8	Internship for bachelor's diploma	4	S	4
	Total credits	**30**		

Programme Description:

Bachelor Study Programmes: Food Engineering, Food Control and Expertise, Consumer and Environmental Protection

All three bachelor programmes share a **common core in Years 1–2**, then branch into three specialisations in **Years 3–4**.

Structure and credits

- Duration: 4 academic years (8 semesters)
- Total per year: 60 ECTS
- Each semester: 30 ECTS
- Teaching format: courses, seminars and tutoring; a mix of compulsory and optional components
- Assessment: mainly written/oral exams, plus colloquium-type evaluation for research/leadership components

Years 1–2 – Common Core (all programmes)
In the first two years, students build a solid background in:

- **Basic sciences and engineering:** Special Mathematics, Physics I–II, Inorganic, Organic, Physical and Colloidal Chemistry, Elements of Electrical and Mechanical Engineering, Applied Informatics, Computer-Aided Graphics.
- **Food and life sciences:** Ecology and Environmental Protection, Food Chemistry, General and Special Microbiology, Biochemistry, Human Nutrition.
- **Introductory food technology and safety:** Operations in the Food Industry I–II, General Technologies in the Food Industry, Food Safety I–II, Packaging and Labelling, Sensory Analysis, Legislation in the Food Industry.
- **Transversal skills:** English (I–II), Sports, and an initial **internship**.

This common trunk prepares students for any of the three specialisations by combining scientific fundamentals with introductory food technology, safety and law.

Food Engineering – Years 3–4
Food Engineering focuses on **food processing technologies and equipment** across major sectors:

- Technologies and equipment in milling, baking, oil and margarine, wine and beverages, meat and dairy industries.
- Traditional and ecological products, food preservation, additives and ingredients, refrigeration and cold storage, special biotechnologies.
- Quality and control of food, hygiene of food companies, automation and management.
- Courses in gastrotechnics and catering, consumer behaviour, global food safety policies and strategies.



Food Control and Expertise – Years 3–4

Food Control and Expertise emphasises **food analysis, inspection and official control**:

- Vegetal and animal food technologies, then **vegetal and animal food control**.
- Food analysis, rheology, methods and techniques of instrumental analysis, functional foods.
- Mineral and radioactive contamination of agri-food products.
- Food preservation, additives and ingredients, food safety and expertise, global food safety policies.
- Quality management, hygiene of food companies, marketing and management, ethics in the food industry.
- Strong practical component through **internships in food units and inspection/official control courses**.



Consumer and Environmental Protection – Years 3–4

Consumer and Environmental Protection integrates **food systems, environment and consumer safety**:

- Protection and conservation of biodiversity and the environment, environmental audit, atmosphere and environmental quality.
- Techniques for investigating environmental factors, environmental inspection and legislation.
- Vegetal and animal food technologies, food analysis and authentication, detection of adulteration.
- Food quality and control, food safety and security in consumer protection, global food safety policies.
- Operative control methods in consumer protection, polluting agents and their impact, protective factors in the food industry.
- Waste management and circular economy, biotechnology for recycling residual products, food preservation, additives and ingredients, management and consumer behaviour, food merchandising.



Faculty of Food Engineering – Master studies

Subject area code: 0721

Master's Programme Consumer Protection and Food Safety Auditing
Host faculty: Faculty of Food Engineering
Field: Food Engineering (0721)
Level: Master's (2 years)
Language of instruction: English

Programme overview

The Master's programme "Consumer Protection and Food Safety Auditing" provides advanced, practice-oriented training in how to protect consumers and ensure food safety along the entire food chain. It combines scientific and technical aspects of food safety with auditing, legislation, communication, and management skills.

Students learn to understand and manage microbiological, chemical, technological, and organizational risks in food systems; to apply and audit food safety management standards; and to address consumer rights, communication, and ethical issues in the food sector. A strong research component (three consecutive "Research planning and leadership" modules) prepares students for independent work, projects, and the master's dissertation.

The programme is suitable for students interested in careers in food companies, retail, certification bodies, control and inspection authorities, and consumer protection organizations.

Structure and credits

- Duration: 2 academic years (4 semesters)
- Total per year: 60 ECTS
- Each semester: 30 ECTS
- Teaching format: courses and seminars; a mix of compulsory and optional components
- Assessment: mainly written/oral exams, plus colloquium-type evaluation for research/leadership components

Code	***Discipline***	***ECTS***	***Semester W/S***	***Year of study***
CPFSA.01.F.DOB.1	Sustainability of Food Systems	4	W	1
CPFSA.02.F.DOB.1	Traceability and Risk Assessment in the Food Industry	4	W	1
CPFSA.03.S.DOB.1	Consumer Complaints and Food Incident Management	4	W	1
CPFSA.04.S.DOB.1	Food Safety Management Systems (ISO 22000, BRC, IFS, FSSC 22000)	6	W	1
CPFSA.05.S.DOB.1	Research planning and leadership 1	8	W	1
CPFSA.11.S.DOP.1	Innovation in Food Safety Technologies	4	W	1
	Total credits	**30**		
CPFSA.06.S.DOB.2	Emerging and Global Challenges in Food Safety	6	S	1
CPFSA.07.S.DOB.2	Crisis Management and Rapid Alert Systems in Food Safety	6	S	1
CPFSA.08.S.DOB.2	Consumer Perception and Communication in Food Safety	6	S	1

CPFSA.09.S.DOB.2	Research planning and leadership 2	8	S	1
CPFSA.13.S.DOP.2	Food Law and Consumer Protection	4	S	1
	Total credits	**30**		
CPFSA.01.S.DOB.3	Food Fraud Prevention and Authentication Methods	5	W	2
CPFSA.02.S.DOB.3	Audit of Food Safety Management Systems	6	W	2
CPFSA.03.S.DOB.3	Quality Control in Novel and Functional Foods	6	W	2
CPFSA.04.S.DOB.3	Consumer Rights and Ethical Food Marketing	3	W	2
CPFSA.05.S.DOB.3	Research planning and leadership 3	8	W	2
CPFSA.06.C.DOB.3	Ethics and academic integrity	2	W	2
	Total credits	**30**		

Year 1 – Winter Semester (W, Year 1) – 30 ECTS

1. **CPFSA.01.F.DOB.1 - Sustainability of Food Systems (4 ECTS)**
   Focuses on sustainability principles applied to food systems. The course addresses how resource use, environmental impact, and social and economic aspects influence food production, processing, distribution, and consumption. Students are introduced to sustainable practices and approaches for making food chains more resilient and responsible.
2. **CPFSA.02.F.DOB.1 - Traceability and Risk Assessment in the Food Industry (4 ECTS)**
   Introduces traceability concepts and tools used to follow food products and ingredients along the supply chain. Students learn basic methods of risk assessment in the food industry and how traceability supports risk management, incident response, and regulatory compliance.
3. **CPFSA.03.S.DOB.1 - Consumer Complaints and Food Incident Management (4 ECTS)**
   Covers the organization and handling of consumer complaints, and the management of food safety incidents. Emphasis is placed on procedures for receiving, analyzing, and responding to complaints, as well as internal and external communication and corrective actions when safety incidents occur.
4. **CPFSA.04.S.DOB.1 - Food Safety Management Systems (ISO 22000, BRC, IFS, FSSC 22000) (6 ECTS)**
   Provides an in-depth overview of major international food safety management system standards and schemes, including ISO 22000, BRC, IFS, and FSSC 22000. Students become familiar with core requirements (e.g. hazard analysis, prerequisite programmes, documentation, verification and validation) and how these systems are implemented and maintained in food businesses. The course forms the basis for later audit-oriented subjects.
5. **CPFSA.05.S.DOB.1 - Research Planning and Leadership 1 (8 ECTS)**
   The first module in a three-part research and leadership sequence. It introduces the fundamentals of planning research projects in food safety and consumer protection, including defining objectives, choosing methodologies, and organizing work. Elements of leadership and teamwork in research settings are also addressed.
6. **CPFSA.11.S.DOP.1 - Innovation in Food Safety Technologies (4 ECTS)**
   Explores current and emerging technological solutions for improving food safety (e.g. new processing methods, detection and monitoring techniques, preservation strategies). The focus is on how innovations can reduce risk, increase shelf life, and better protect consumers, and how they can be integrated into existing food safety systems.

Total: **30 ECTS**

Year 1 – Summer Semester (S, Year 1) – 30 ECTS

1. **CPFSA.06.S.DOB.2 - Emerging and Global Challenges in Food Safety (6 ECTS)** Examines new and global issues affecting food safety, such as emerging hazards, globalization of supply chains, climate-related impacts, and new production and distribution models. Students learn to recognize and discuss current and future challenges and to link them with risk management and policy.
2. **CPFSA.07.S.DOB.2 – Crisis Management and Rapid Alert Systems in Food Safety (6 ECTS)**
   Deals with organization and procedures for managing food safety crises, including recall and withdrawal of products. The course addresses rapid alert systems and networks used to exchange information on threats and incidents, and how authorities and companies coordinate their actions during crises.
3. **CPFSA.08.S.DOB.2 - Consumer Perception and Communication in Food Safety (6 ECTS)** Focuses on how consumers perceive food safety risks and how this influences their behavior and trust. Students learn principles of risk communication, message design, and the role of media and public information in food safety. The course links technical risk assessment with effective, transparent communication to consumers.
4. **CPFSA.09.S.DOB.2 - Research Planning and Leadership 2 (8 ECTS)**
   Continues the research and leadership sequence, going deeper into research design, data collection, project management, and critical literature analysis. Students further develop their ability to plan and lead research activities, preparing them for independent work and the final dissertation.
5. **CPFSA.13.S.DOP.2 - Food Law and Consumer Protection (4 ECTS)** Introduces the legal framework relevant to food safety and consumer rights. Topics include core food law principles, responsibilities of food business operators, labelling and information to consumers, and mechanisms of consumer protection. The course links legal requirements to practical implementation and enforcement.

Total: **30 ECTS**

Year 2 - Winter Semester (W, Year 2) - 30 ECTS

1. **CPFSA.01.S.DOB.3 - Food Fraud Prevention and Authentication Methods (5 ECTS)** Addresses intentional violations such as food fraud (e.g. adulteration, mislabelling, substitution) and the methods used to detect and prevent them. Students are introduced to authentication techniques and strategies that organizations can use to protect consumers and maintain product integrity.
2. **CPFSA.02.S.DOB.3 - Audit of Food Safety Management Systems (6 ECTS)** Focuses on the planning and execution of internal and external audits of food safety management systems. Students learn audit principles, preparation of checklists, on-site activities, reporting of non-conformities, and follow-up actions. The course builds directly on the standards covered in earlier semesters.
3. **CPFSA.03.S.DOB.3 - Quality Control in Novel and Functional Foods (6 ECTS)** Deals with quality and safety control specific to novel and functional foods. Students explore particular aspects such as new ingredients, health-related claims, and additional testing needs, and how these are integrated into existing quality and safety frameworks.
4. **CPFSA.04.S.DOB.3 - Consumer Rights and Ethical Food Marketing (3 ECTS)** Examines consumer rights in the context of food products and the ethical dimensions of food

marketing and communication. Topics include fairness, transparency, avoidance of misleading practices, and alignment of marketing strategies with regulatory and ethical expectations.

5. **CPFSA.05.S.DOB.3 - Research Planning and Leadership 3 (8 ECTS)** Final component of the research and leadership sequence. It consolidates students' ability to design, lead, and communicate a research project. This module is closely linked to the preparation of the master's dissertation, encouraging integration of scientific, methodological, and leadership skills.
6. **CPFSA.06.C.DOB.3 - Ethics and Academic Integrity (2 ECTS)** Introduces ethical principles in academic work and research, with attention to integrity, honesty, proper referencing, avoidance of plagiarism, and responsible conduct of research. This forms an important basis for the dissertation and any future professional or academic activities.

Total: **30 ECTS**

