Food Safety and Quality Management – Course Descriptions (Winter Semester)

Food Toxicology – 4 ECTS - Lectures, Laboratories

Food Toxicology introduces students to harmful substances in food, including natural toxins, contaminants, additives, and residues. The course covers mechanisms of toxic action, dose-response relationships, and principles of toxicokinetics. Students learn how to assess toxicological risks, interpret safety data, and understand legal limits for food toxicants. Emphasis is placed on current issues such as mycotoxins, acrylamide, heavy metals, and foodborne toxic hazards. The course supports understanding of food safety regulations and consumer protection.

Standardization, Harmonization and Certification of Food – 2 ECTS - Lectures, Exercises

Standardization, Harmonization and Certification of Food provides students with knowledge of food quality standards, certification systems, and international harmonization efforts. The course covers ISO standards, Codex Alimentarius guidelines, and certification schemes such as GHP, GMP, HACCP, BRC, IFS, and Global G.A.P. Students learn about conformity assessment, audit procedures, and the legal framework for product labeling and certification. Emphasis is placed on the role of standardization in food safety, trade, and consumer trust.

Trends in Food Preservation – 4 ECTS - Lectures, Exercises, Laboratories

Trends in Food Preservation explores modern and emerging methods used to extend the shelf life of food while maintaining its quality and safety. The course covers advanced technologies such as high-pressure processing (HPP), pulsed electric fields (PEF), cold plasma, irradiation, and intelligent packaging. Students analyze the effectiveness, advantages, and regulatory aspects of novel preservation techniques. Emphasis is placed on sustainable, consumeracceptable solutions and current trends in the food industry.

Quality and Food Safety Management – 4 ECTS - Lectures, Exercises, Laboratories

Quality and Food Safety Management focuses on systems and strategies used to ensure the quality and safety of food across the supply chain. The course introduces key management tools, including Good Manufacturing Practice (GMP), Hazard Analysis and Critical Control Points (HACCP), ISO 9001, ISO 22000, and Total Quality Management (TQM). Students learn how to implement, monitor, and improve food safety systems in compliance with legal and industry requirements. Case studies illustrate practical applications in food production and distribution.

Organic Raw Materials and Products – 4 ECTS - Lectures, Laboratories

Organic Raw Materials and Products introduces students to the characteristics, production methods, and certification requirements of organic food. The course covers principles of organic farming, permitted inputs, and differences between organic and conventional raw materials. Students learn to evaluate the quality, labeling, and nutritional aspects of organic products, as well as current consumer trends and market challenges. Emphasis is placed on sustainability, traceability, and regulatory compliance in the organic sector.

Control and Certification Systems in Organic Farming – 4 ECTS - Lectures, Laboratories

Control and Certification Systems in Organic Farming focuses on legal, organizational, and practical aspects of ensuring compliance with organic production standards. Students learn about EU regulations, national control authorities, and the role of certification bodies. The course covers audit procedures, documentation requirements, and traceability systems. Emphasis is placed on the process of obtaining and maintaining organic certification, as well as the integrity and credibility of organic labels in the food market.

By-products in the Agri-food Industry – 4 ECTS - Lectures, Exercises

By-products in the Agri-food Industry examines the origin, composition, and potential applications of by-products generated during food production. The course focuses on sustainable utilization strategies, including valorization into food ingredients, animal feed, bioenergy, and bioplastics. Students analyze technological, economic, and environmental aspects of by-product management. Emphasis is placed on circular economy principles and innovations that reduce waste and increase resource efficiency in the food sector.

Animal-based Food Raw Materials – 4 ECTS - Lectures, Laboratories

Animal-based Food Raw Materials provides students with knowledge of the origin, classification, and quality assessment of raw materials of animal origin, such as meat, milk, eggs, and fish. The course covers factors affecting raw material composition, technological suitability, and microbiological safety. Students learn about handling, storage, and preliminary processing methods, as well as legal and hygienic requirements. Emphasis is placed on quality criteria, traceability, and the role of animal-based raw materials in food production.