1st semester

General & Analytical Chemistry

The aim of the course is to introduce students to selected teaching units covering the fundamentals of general inorganic and organic chemistry, as well as analytical chemistry. The course units are adapted to the study program, with emphasis on the basic structure of the atom, chemical bonds, the chemical structure of packaging materials, and the application of chemistry in the food industry. Students are also introduced to safe work practices in a chemical laboratory.

Basics of Biology

The aim of the course is to introduce students to selected teaching units in biology in such a way that the knowledge acquired in this fundamental subject can later be applied in the field of food technology. In addition, students will develop learning skills necessary for continuing their studies. The course covers the basics of cell biology and genetics, as well as the fundamentals of histology, anatomy, morphology, and physiology of plants and animals, and the basics of the systematics of the living world.

Basics of Nutrition

Familiarization with the basic principles and guidelines of proper nutrition, dietetic and anthropometric methods—that is, methods used in the application of nutritional science—and with dietary standards aimed at preventing deficiency diseases and the prevention of chronic diseases.

2nd semester

Basics of Biochemistry

To acquire fundamental knowledge of biochemistry necessary for understanding raw materials and comprehending the processes in food technology.

Nutritional Microbiology

The aim of the course is to familiarize students with fundamental knowledge of microbiology. Students will learn about the factors causing food spoilage, methods of prevention, protection, and preservation, as well as laboratory skills for performing basic microbiological analyses of food in accordance with the Regulation on Microbiological Food Safety and ISO standards.

Raw Materials for Food Industry

The objectives of the course are to familiarize students with raw materials of plant and animal origin, as well as their production, composition, and quality.

3th semester

Application of Microbes in Production and Protection of Authentic Food Products
To familiarize students with the role of microbes in the production of fermented and functional foods, as well as the selection criteria that microbes must meet to be classified as probiotics or functional starter cultures. Students will also be introduced to biochemical and molecular methods for the isolation and identification of beneficial microbes.

Food Quality and Safety Control

The aim of the course is to familiarize students with the basic legal regulations related to food quality and safety control, specific guidelines that ensure the safety and suitability of food at all stages of the food chain, and standards within the framework of food quality and safety management systems. The course also aims to introduce students to the principles of sampling, requirements for analytical methods for food analysis, the basics of sensory evaluation of food, and various analytical methods for determining the main components of food, such as water, total ash and individual minerals, proteins, carbohydrates, fats, and vitamins, as well as analytical methods for detecting undesirable substances and residues.

5th semester
Presentation and Promotion of Food Products

To create an encouraging environment that enables students to acquire diverse knowledge, skills, and abilities related to the modern multimedia society and the presentation of information using the latest technologies.

Food Legislation and Traceability in Food Chain

To familiarize students with the current legal regulations in the areas of food quality, hygiene, safety, and traceability within the food chain. Within the course, students will acquire the skills and competencies to apply these regulations in practice.

6th semester

Organic production of food products

The acquisition of knowledge and skills necessary for the independent management of organic production processes of cereals and their processing into finished products; organic production of grapes and wine; organic production of fruits and vegetables and their processing into finished products; organic production of honey and other bee products; organic production of meat and meat products; and organic production of milk and dairy products.

Elective Technologies Group
A – Technology of Animal and Milk Products

Technology of Milk Production and Processing

Acquiring knowledge about the influence of technology, biochemistry, and microbiology of milk on the characteristics and quality of dairy products, and gaining the ability to perform basic methods of analysis of milk and dairy products.

B – Technology of Plant Products
Technology of Fruits and Vegetables

The objectives of the course are to familiarize students with: (i) the basic chemical, biological, and nutritional characteristics of fruits and vegetables, their significance in nutrition, and their role in processing technologies; (ii) the application of basic technological processes for processing, preservation, shelf-life extension, etc., with the aim of retaining nutritional and dietary properties; (iii) technological processes for the production of jellied products; (iv) technological processes for juice production; (v) technological processes for the production of canned vegetables; and (vi) the legal regulations applicable to processing technologies for various categories of fruit and vegetable products.