

I. SEMESTER COURSE CONTENT

Course Code and Name	T	P	C	ECTS
TGT101 Food Science	2	0	2	3
Course Content Definition of food science, activities of the food industry. Factors that cause food spoilage and loss of value and their control. Physical, chemical, biochemical, and microbiological changes and deteriorations occurring in foods. Principles of the methods used to preserve foods and their introduction (cold and freezing preservation, drying and concentration, pasteurization and sterilization, chemicals, etc.) Raw material transportation and processing for each food group, packaging, storage, and distribution of food products. Fermentation, its types, definition of fermented food. Industrial foods. Definitions and principles of basic processes applied in the food industry (separation and classification, grinding, sieving, mixing and emulsification, filtration and membrane separation, centrifugation, drying, thickening, gas absorption and desorption, extraction and washing, distillation, crystallization, sedimentation, pressing, etc.).				

Course Code and Name	T	P	C	ECTS
TGT107 Food Processing Principles	2	0	2	3
Course Content Structure of foods, size reduction (grinding, shredding, slicing, etc.), mixing process, emulsification, centrifugators, heat treatment, methods of heating foods, cooling process (cold storage and frozen preservation, cooling systems). Food contaminants and spoilage agents, microbial contaminants and transmission routes, factors affecting and directing microbial development, microbial food spoilage, food preservation techniques and product safety, classification of food preservation methods according to their functions, barrier parameters used in food preservation, determination of specific processing techniques to be applied according to foods.				

Course Code and Name	T	P	C	ECTS
TGT110 Food Chemistry and Biochemistry	3	0	3	5
Course Content Chemical composition of foods, water, carbohydrates, proteins, lipids, vitamins, minerals, pigments in foods. Chemical transformations and transformation products in foods. Qualitative and quantitative analysis of carbohydrates, proteins, fats; Principles of quality control, quality control analyzes applied to various foodstuffs.				

Course Code and Name	T	P	C	ECTS
TGT111 General Microbiology	2	2	3	5
Course Content Definition of microbiology, the place of microorganisms among living things, classification of microorganisms, their distribution and functions in nature; interaction between microorganisms and host-parasite relationships, morphology and structure of microorganisms, life in microorganisms, the effect of the environment on bacteria, metabolism in microorganisms, antigens and antibodies and their reactions; fungi, yeasts and molds. Laboratory rules, aseptic technique, basic equipments used in microbiology laboratories, microscope and its use, sterilization, medium, microbiological sampling and culturing, bacterial morphology and staining of bacteria, negative staining methods and the presence of capsules in bacteria, bacterial endospores and spore staining, biochemical and physiological tests, identification of microorganisms, microbiological counting methods.				

T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

Course Code and Name	T	P	C	ECTS
TGT153 Basic Mathematics	2	0	2	3
Course Content Students will be able to use numbers, number sets and defined operations in solving problems, comprehend the idea of comparison-arrangement-sequencing and the main topics of the course; Concepts such as numbers, basic concepts, divisibility, ratio and proportion, exponents, functions and equations and inequalities.				

Course Code and Name	T	P	C	ECTS
AİT101 History of Atatürk's Principles and Revolutions -I	2	0	2	2
Course Content Basic concepts include the reforms made by the Ottoman Empire before the Turkish Revolution, the preparation period of the Turkish Revolution, and the Turkish War of Independence.				

Course Code and Name	T	U	K	AKTS
TRD101 Turkish Language -I	2	0	2	2
Course Content It covers the topics of language, languages and Turkish language, grammar, words and sentences, word types, elements of expression and types of expression, and the basic principles of smooth and effective speaking.				

Course Code and Name	T	P	C	ECTS
ENF101 Computer	1	2	2	2
Course Content The computer as a user (general definition and history of the computer system), principles of computer-based information systems (data entry, data evaluation, data output and storage phases, types of data entry processing phases, database applications and first steps), Microsoft Word, Microsoft Excel and Use of Microsoft Powerpoint.				

Course Code and Name	T	P	C	ECTS
YDİ131 Foreign Language-I	2	0	2	2
Course Content Basic grammar, adjectives, nouns, pronouns, basic tenses, clips, reading, writing, speaking, listening skills, vocabulary.				

Course Code and Name	T	P	C	ECTS
KİM101.1. General Chemistry	2	0	2	3
Course Content Properties of elements starting from the atom, which is the smallest structural element of matter, basic laws regarding the formation of compounds, solid, liquid and gaseous states of matter and some properties of their mixtures. Explaining the basic concepts of chemistry and their applications to students, which will form the basis for the analyzes they will use in their professional lives.				

T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

II. SEMESTER COURSE CONTENT

Course Code and Name	T	P	C	ECTS
TGT102 Nutrition Principles	2	0	2	3
Course Content Definition and importance of nutrition, components of food and functions of nutrients, energy in terms of nutrition, energy sources and calculations, carbohydrates, proteins, fats, vitamins, water, mineral substances, nutrition, nutrition styles and habits, food forms, healthy nutrition.				

Course Code and Name	T	P	C	ECTS
TGT103 Laboratory Techniques	2	2	3	5
Course Content Definition of laboratory, importance of laboratory applications. Features that should be present in laboratories (types of laboratories, tools and equipment used and analyzes performed in these laboratories). Rules to be followed in laboratories, laboratory accidents and precautions to be taken. Introduction and importance of tools and equipment used in food laboratories. Physical, chemical, microbiological analyses. The importance of analyzes in Food Technology. Solution, solution types, solution preparation. Molarity, normality and molality. Preparing ppm solutions. Preparation of solution by mass and volume. General laboratory analyses.				

Course Code and Name	T	P	C	ECTS
TGT104.1 Business Hygiene and Sanitation	2	0	2	2
Course Content Definition and importance of hygiene and sanitation, microorganisms and sanitation, foodborne health risks, contamination sources, water hygiene, cleaning and detergents, cleaning methods, disinfection and disinfectants, personnel hygiene, business design and sanitation, sanitation of tools and equipment, air and sanitation, pests and control methods in food businesses, food industry wastes, environmental problems and treatment methods.				

Course Code and Name	T	P	C	ECTS
TGT106 Food Microbiology	2	2	3	4
Course Content In this context, introduction to microbiology, terminology, classification, general characteristics of microorganism groups. Microorganisms and antimicrobial agents that are important in the production of food, food poisoning, microbiological spoilage in meat and meat products, milk and dairy products, eggs and products, spoilage in fruits and vegetables and their products, microbiological spoilage in canned and fermented foods. Determination of microorganism load in foods, microorganism, mold and yeast counts; Microbiological analysis and compliance with standards in foods of animal and plant origin and canned foods.				

Course Code and Name	T	P	C	ECTS
TGT112 Occupational Health and Safety	2	0	2	2
Course Content Safe working principles in food processing facilities, research and development and quality control laboratories, emergency measures and first aid to be taken in case of accidents that may occur there. The importance of domestic water and disinfectants in food processing facilities in terms of occupational health and safety. Safe use of machinery, devices and equipment used in food processing facilities and laboratories and the safety precautions to be taken.				

T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

Course Code and Name	T	P	C	ECTS
TGT108 Food Processing Principles II	2	0	2	3
Course Content General principles of concepts and practices fundamental to food processing. Mixing and blending, tanks in the food industry, heating techniques, separation, classification and grinding systems and other basic preservation methods.				

Course Code and Name	T	U	K	AKTS
TRD102 Turkish Language -II	2	0	2	2
Course Content To be able to explain the types of written expression in daily life, to understand the importance of punctuation in written expression, to understand the importance of correct expression in personal and social communication, and to be able to apply research, reading and information skills.				

Course Code and Name	T	P	C	ECTS
AİT102 History of Atatürk's Principles and Revolutions -II	2	0	2	2
Course Content Explaining the Atatürk Revolutions that established the Republic of Turkey, the principles of the foreign policy of the Republic of Turkey during Atatürk's period, Atatürk's principles and the reasons for the birth of these principles.				

Course Code and Name	T	P	C	ECTS
YDİ132 Foreign Language-II	2	0	2	2
Course Content Ability to accurately understand what is intended to be expressed in writing or verbally in a foreign language, to be able to write clearly using the appropriate writing technique, and to be able to express what is intended to be explained verbally in an understandable manner.				

Course Code and Name	T	P	C	ECTS
TGT116 Food Quality Control	2	0	2	2
Course Content Quality concept and food quality criteria, basic concepts in quality assurance and related definitions (ISO, GMP, HACCP, GAP), quality assurance organization and tasks, quality control cards and interpretation, color, texture and rheological properties in foods, sensory properties of foods and sensory analysis methods, national and international standards regarding food quality, quality change in foods, control criteria and shelf life, types of defects in foods and their determination.				

T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

III. SEMESTER COURSE CONTENT

Course Code and Name	T	P	C	ECTS
TGT201 Fruit and Vegetable Processing Technology	2	2	3	5
Course Content Some biological, physical, and chemical properties of fruits and vegetables, Food preservation methods and basic principles; Cold storage of fruits and vegetables, freezing and drying preservation methods. Canned food production technology. Production technologies of fruit juice, nectar, and beverages. Jam and marmalade production technologies.				

Course Code and Name	T	P	C	ECTS
TGT203 Meat and Meat Products Technology	2	2	3	5
Course Content Physical, chemical, microbiological and histological structure of meat; Biochemical reactions occurring after slaughter. Storage methods of meat, soudjouk, salami, sausage, pastrami, smoked meat and canning technologies and flow charts. Hygiene and sanitation in the meat industry. Sensory, physical and chemical analyzes of meat and its products, quality of meat products according to standards.				

Course Code and Name	T	P	C	ECTS
TGT208 Milk and Dairy Products Technology	2	2	3	5
Course Content Definition of milk (albuminous milks, colostrum milk, raw milk), composition of milk, tools and equipment, processes applied to milk, production technologies and process flow charts of various dairy products, milk by-product technologies, distribution of milk and its acceptance in the industry. Business hygiene and sanitation. Evaluation of analyzes to be carried out under the leadership of quality control, standards and food regulations in milk and its products				

Course Code and Name	T	P	C	ECTS
TGT209 Fermented Foods Technology	2	0	2	3
Course Content Basic principles of fermentation and fermenters. Production of fermented dairy products. Production of fermented meat products. Production of fermented grain products. Production of fermented fruit and vegetable products. Production of wine and beer from alcoholic beverages.				

Course Code and Name	T	P	C	ECTS
TGT213 Food Analysis	2	2	3	5
Course Content The importance of quality control and consumer safety in foods. Basic physical, chemical, microbiological and sensory analyzes applied to foods. Analysis of milk and its products, meat and its products, aquatic products, analysis of flour and bakery products, analysis of drinking and potable water, analysis of edible oils, analysis of honey; Evaluation of the analyzes carried out. Residue and contribution analyses.				

T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

Course Code and Name	T	P	C	ECTS
GİR222+1 Entrepreneurship	2	0	2	2
Course Content Entrepreneur, entrepreneurship, basic concepts related to entrepreneurship Fundamentals of entrepreneurial thinking, Testing of entrepreneurial personality Entrepreneurship process / Business idea development and creativity / Creative problem solving techniques / Innovation Business plan concept and business plan elements (market research) Market research using primary and secondary sources , identification of customers, their current and future needs Business plan concept and business plan elements (marketing plan) Marketing mix within the marketing plan examination (product, price, distribution, promotion) Business plan concept and business plan elements (production (manufacturing/service) plan) Production planning Business plan concept and business plan elements (management plan) Human Resources Management Business plan concept and business plan elements (financial plan) Finding financial resources, investment planning, preparation of financial statements and financial management elements. Accounting (budget and cash flow) Business Plan Preparation and Presentation.				

Course Code and Name	T	P	C	ECTS
TGT205 Packaging in the Food Industry	2	0	2	3
Course Content Fundamental principles of packaging for the food industry, focusing on food quality and durability. Properties, applications and packaging technologies of different packaging materials used in the food industry (paper, metal, plastic, glass, wood packaging), plastic-based packaging, preservation methods, Food packaging interactions – sorption and migration. Food shelf life and affecting parameters.				

Course Code and Name	T	P	C	ECTS
TGT215 Catering Technology	2	0	2	2
Course Content Introduction and classification of the ready-made food industry. Balanced nutrition, menu planning in the preparation of ready-made meals, kitchen design and equipment, kitchen organization, storage, transportation and service techniques, hygiene and sanitation in mass catering systems, quality assurance practices.				

Course Code and Name	T	P	C	ECTS
GÖN101 Volunteering Activities	1	2	2	2
Course Content In the course, they will briefly see the working procedures and principles of non-governmental organizations in today's world, especially volunteering activities and civil society activities, their activities, and their strategies for expressing themselves to the society in the context of promotion and public relations. In addition, there will be sharing of experiences of various non-governmental organizations sharing their activities.				

T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

IV. SEMESTER COURSE CONTENT

Course Code and Name	T	P	C	ECTS
TGT206 Vegetable Oil Technology	2	2	3	5
Course Content Composition and general structures of vegetable and animal fats and oils, oil raw materials, obtaining crude oil from olives and oilseeds, obtaining animal oil, fish oil technology, refining of oils, hardening of oils and margarine production, degradation of oils and increasing resistance to spoilage. Taking samples from oils and preparing them for analysis, qualitative analysis of oils, external properties, solubility, heating experiment, saponification experiment, investigation of clouding substances, quantitative analysis, determination of volatile substances, determination of insoluble foreign substances, determination of mineral acids, acid number, soap amount, saponification. number, peroxide number, iodine number, refraction coefficient, unsaponifiable matter, specific gravity, lovibond color measurement.				

Course Code and Name	T	P	C	ECTS
TGT204 Specialty Foods Technology	2	0	2	3
Course Content Edible Oils, Sugar and Confectionery, Tea Technology, Snack Foods, Diet Foods, Diabetic Foods, Chocolate Making, Turkish Delight Making, Tahini Halva Production, Tarhana Making etc.				

Course Code and Name	T	P	C	ECTS
TGT210 Food Legislation and Professional Ethics	2	0	2	3
Course Content Food Legislation: It is a set of rules that determine the minimum quality and hygiene criteria that foodstuffs must meet. The main purpose of preparing food legislation is to protect the consumer in hygienic and economic terms by ensuring food safety. In addition, food legislation provides positive contributions such as preventing unfair competition in the food sector, contributing to the development of the sector, and ensuring the reputation of the country. In this context, Turkish Food Legislation Regulations are examined.				

Course Code and Name	T	P	C	ECTS
TGT211 Grain Processing Technology	2	2	3	5
Course Content Definition, production and types of grains, structure and composition of wheat, quality criteria. Storage of cereal products. Basic processes of grinding technology. Flour yield and flour quality. Bread technology; properties, composition, nutritional value and staling. Processing of other cereal products.				

Course Code and Name	T	P	C	ECTS
TGT212 Cooling Techniques and Storage	2	0	2	3
Course Content Storage of raw materials and processed seafood, factors affecting storage. Warehouse and storage methods, determination of shelf life, storage calculations, factors affecting food preservation.				



T.C.
MUNZUR UNIVERSITY
TUNCELI VOCATIONAL SCHOOL
FOOD PROCESSING DEPARTMENT
FOOD TECHNOLOGY PROGRAM COURSE CONTENTS

Course Code and Name	T	P	C	ECTS
TGT220 Research Techniques and Seminar	2	0	2	4
Course Content Completing the deficiencies of students with different formations in the basic subjects they need by focusing on laboratory studies, providing them with knowledge and skills, and ensuring homogeneity within the department.				

Course Code and Name	T	P	C	ECTS
TGT202.1 Food Additives	2	0	2	3
Course Content Definition and classification of food additives, definition, properties, usage methods and places of use of colorants, taste and fragrance substances, antimicrobial and antioxidant substances, chelates, acids, phosphates, artificial sweeteners, emulsifiers and stabilizers used as additives, points to be considered in their use, human relations and toxicology.				