

USKUDAR UNIVERSITY

HSVHS

FOOD TECHNOLOGY PROGRAM

2024-2025 COURSE CONTENTS

SEMESTER I

(Theory+Application+Credits+ECTS)

ATA103 Ataturk's Principles and History of Revolution I

(2+0), ECTS:2

Concepts define, description of course methods and resources, Industrial Revolution and the French Revolution, The Disintegration of the Ottoman Empire (XIX. Century), Tanzimat and Reform Edict, I and II. Constitutionalism, World War I, Tripoli and Balkan Wars, Armistice of Mudros, Wilson Principles, Paris Conference, M. Kemal's Departure to Samsun and the Situation in Anatolia, Amasya Circular, National Congresses, Opening of the Parliamentary Assembly, Establishment of the Turkish Grand National Assembly and Internal Revolts, Teşkilat-ı Esasi Law, Establishment of the Regular Army, I.II. Great Offensive with İnönü, Kütahya-Eskişehir and Sakarya Pitched Battles, treaties during the War of Independence, The Lausanne Peace Treaty, Abolition of the Sultanate

BIK101 Biochemistry

(2+0), ECTS:2

Subject of biochemistry, biomolecules and cell structure, Subject of biochemistry, biomolecules and cell structure, Properties of water and aqueous solutions, Amino acids, peptides and proteins, Proteins, Enzyme, Enzyme inhibition and regulation of enzyme activity, Enzyme inhibition and regulation of enzyme activity, Carbohydrates, Carbohydrates , Lipids , Nucleic acids, Vitamins

GTE113 Food Processing Principles

(3+0), ECTS:5

Basic Structure of Food, Principles of Food Processing General Introduction, Pre-Treatments in Food Production (Cleaning-Washing-Sorting-Classification), Basic Principles in Food Processing (Sieving-Size Reduction), Cooling Technology, Freezing Technology, Heat Treatments in Food Technology-1, in Food Technology Heat Treatments-2, Evaporation Technology, Drying Technology, Fermentation Technology, Filtration Technology, New Technologies in Food Industry: Irradiation Technology

GTE111 General Chemistry in Food Technology

(2+2), ECTS:5

Measurement, Unit Systems, Basic Laws of Chemistry (Application: Introduction of devices and equipment in the laboratory), Matter and physical chemical properties (Application: Preliminary information about laboratory safety and experiments to be performed), Compounds, Elements, Molecules (Application: Important Chemical Safety Symbols), Calculations based on Chemical Compounds and Chemical Reactions (Application: Unsaturated-Saturated-Saturated Solution), Mole Concept, Finding Chemical Formulas and Redox Reactions, Atom and atomic structure, (Application: Solution Preparation I :Molarity), Bohr Atomic Theory, Modern Atomic Theory, Periodic Table, Quantum Numbers (Application: Solution Preparation II :-Normality), Chemical Bonds, Formal Charge, Polarity of Bond, (Application: Separation Methods-Separation by Density Difference), Acid-Base Concept (Application: Measurement of pH Value in Acid and Base Solution I), Acid-Base Reactions and titration (Application: Measurement of pH Value in Acid and Base Solution II: Addition of Various

Indicators to Solutions), Solutions and concentration, Molarity, Normality, Molality, Mass and Volume percentage calculations, (Application: Acid-Base Titration), Buffer Solutions, pH, equilibrium constants, chemical equilibrium, (Application: Perfume Production), Calorie Calculation in Foods (Carbohydrate, Protein, Fat) (Application: Determination of Reaction Rate)

INGU103 English I

(2+0), ECTS:2

Meeting, verb to be, subject pronouns, demonstrative pronouns, countable/uncountable nouns, quantifying expressions, Simple present tense, adverbs of frequency, object pronouns, possessive adjectives, have got/has got, -mus,-mali,(must/mustn t) can, can(can/can t), Past tense(Simple Past Tense), Unit 1-7 repetition, Present tense, Conjunctions(and-but-so-because), Comparisons, Unit 9 -11 repetitions

RPSI209 Positive Psychology and Communication Skills

(2+0), ECTS:3

Definition of Positive Psychology and Learning the Basic Concepts, Learning the Theoretical Foundations of Positive Psychology, Learning the Brain Infrastructure of Social Behaviors, Emotional Intelligence, Emotional Intelligence in Adults, Children and Adolescents, Marriage and Business Life, Principles of Emotional Intelligence, Personality Development of Emotional Intelligence, Marriage and Work Life Learning Relationship, Learning Self-Knowledge and Awareness Concepts, Learning Others and Empathy Concepts, Learning Communication Skills, Learning Motivation and Planning Skills, Learning Problem Solving Skills, Learning Anger Control Skills, Learning Relationship Management Skills, Learning the Concept of Persistence and Impulse Control Skills Learning Healthy Decision Making Skills, Learning Compromise Concepts

MAT101 Basic Mathematics

(2+0), ECTS:3

Numbers; Classification of Numbers, Exponents, Radical Numbers, Absolute Value, Factorization, Proportion, Equations, 1st Degree Equations with 1 Unknown, 1st Degree Equations with 2 Unknowns, 2nd Degree Equations with 1 Unknown, Inequalities, Inequality Systems, Functions, Sets

MIK101 Basic Microbiology

(2+0), ECTS:2

Introduction to Medical Microbiology, Medical Bacteriology and Morphological Characteristics of Bacteria, Bacterial Metabolism and Reproduction, Bacterial Genetics, Bacterial Virulence Factors, Antimicrobial Substances, Medical Bacteriology, Medical Virology, Medical Parasitology, Medical Mycology, Microorganism Interrelationships and Microorganism Human Relationship, Sterilization, General Principles of Disinfection and Antisepsis, Basic Immunology, Laboratory Diagnosis

TURK103 Turkish Language I

(2+0), ECTS:2

What is language; world languages, the place of Turkish among these and its historical development, Oral presentation studies, The problems of Turkish today in the presence of current texts, The writing of "de", "ki" and "mi" in the accompaniment of current texts, The problems of writing Turkish words in the accompaniment of compiled texts (combined), Text analysis: Analysis of a scientific article, Applications about spelling rules and punctuation, Text analysis: Analysis of a column, Expression disorders, applications with pro-languages, Turkish as a scientific language with sample texts, Oral presentation studies

RKUL103 University Culture I

(0+2), ECTS:4

The student's awareness of the privilege of being a "university student" throughout his/her university life enables him/her to realize that the university is not only a place of lectures and vocational acquisition, but that it should be a participant and guide rather than understanding and interpreting what is going on in university life, in the world and its surroundings, rather than being a follower of these. In this context, it includes participation in seminars and conferences held within the university.

II. SEMESTER

(Theory+Application+Credits+ECTS)

ATA104 Ataturk's Principles and History of Revolution II

(2+0), ECTS:2

Lausanne Peace Treaty and Evaluation, Revolutions in the Political Field, Proclamation of the Republic and Abolition of the Caliphate, Trials of Transition to Multi-Party Political Life, Revolutions in the Field of Law, Revolutions in the Social Field, Revolutions in Education and Economy, Turkish Foreign Policy Between 1923-1938, Turkish Foreign Policy Between 1938-1950, Democratic Party Power and Adnan Menderes Period (1950 – 1960), 1960 Government Coup and Later Political Developments, 1980-2002 Period Turkish Domestic Politics, Basic Principles of the Turkish Revolution (Ataturk's Principles and Integrative Principles), Ataturk Revolutions, Rationalism and Scientific Thought; Republicanism and Populism, Nationalism and Statism; Secularism and Revolutionism

BES101 Nutrition Principles

(2+0), ECTS:3

Introduction to Nutrition, Nutritional Problems and Causes in Society, Nutrients – Carbohydrates, Nutrient Items – Proteins, Nutrient Items – Fats, Nutrient Items – Vitamins, Nutrient Items – Minerals, Food Groups, Functional Foods, Methods of Cooking and Storing Foods, Energy Needs and Energy Imbalance Problems, Nutrition in Special Situations

GTE116 Food Hygiene and Sanitation

(2+0), ECTS:4

Basic concepts, Relationship Between Microorganisms and Hygiene/Sanitization, The importance of controlling microorganisms in terms of hygiene, Food contamination sources - Sanitation practices in meat, dairy, fruit and vegetable businesses, Foodborne infections and intoxications, Water Hygiene, Water Hygiene -2, Personal Hygiene - Personnel Hygiene, Business Hygiene - Factors affecting hygiene in food businesses, Cleaning and disinfection applications -Tools and equipment used for cleaning and hygiene, Pest Control - IPM-integrated pest management, Waste Management, The role of HACCP (Hazard Analysis of Critical Control Points) in sanitation, Overview

GTE100 Food Additives

(2+0), ECTS:4

Ingredients, Amino Acids, Vitamins, Enzymes, Antimicrobials, Antioxidants, Acids and Chelates, Acids and Chelates, Emulsifiers and Polyols, Stabilizers and Starch, Sweeteners, Flavor Agents and Flavor Enhancers, Colorants and Phosphates

GTE112 Food Microbiology

(2+2), ECTS:4

General biology (Classification, cell structure and functions) (Application: Important bacterial species in the food industry (Application: Introduction of parts of the microscope), important yeast and mould species in the food industry (Application: Examination of ready-made preparations under the microscope) , Introduction to food microbiology, Classification of microorganisms in foods (Application: Cell Concept), General characteristics of bacteria and fungi, Important Bacteria and Fungi in Food (Application: Microscopic examination of molds most commonly seen in foods), Sources of Microbial Contamination in Foods and Factors Affecting Microbial Growth (Application: Simple

Staining), Microbial Deterioration of Food - 1 (Application: Simple Staining), Microbial Deterioration of Food - 2 (Application: Gram Staining), Indicator Microorganisms in Food (Application: Gram stain), Foodborne Infectious Diseases (Application: Microbiological Sample from Foods) intake), Foodborne Toxic Infections and Intoxications (Application: Preparation of Dilution), Microbiology of Fermented Foods (Application: Sowing into Solid Medium), Controlling Microorganisms in Food (Application: Isolation in Solid Medium-Line Sowing Method), HACCP Applications (Application: Using Autoclave and Sterilization)

GTE118 Food Health Safety and Food Legislation

(2+0), ECTS:5

Principles in Quality Control Application-Quality Concept, Food Legislation and Food Codex in our country, Quality in Food, Industrial Importance of Food Quality Control, Effect of Additives on Quality, Food Safety and Consumer Expectations in this Subject, HACCP Planning and ISO Concept in Food Industry, Food-Related Regulations, Organizations, The Concept of Safe Food, Food Deterioration and Causes of Deterioration, Food Hygiene-Personnel Hygiene-Business Hygiene, Quality Factors in Food Processing I, Quality Factors in Food Processing II, Sensory Properties in Foods

INGU104 English II

(2+0), ECTS:2

Demonstrative Pronouns, Possessive Pronouns, Past Continuous Tense, Reading and word practice (Simple Past Tense & Past Continuous Tense), Preposition of Time and Place, Present Perfect Tense, 1-5. Repetition of units, Possessive "s", Adverbs of manner, Future Tense, Making Suggestions&Requests, Gerunds – Infinitives, Modals (must,should,have to,don't have to,may), repetition of units 7-12

TURK104 Turkish Language II

(2+0), ECTS:2

What is language; world languages, the place of Turkish among these and its historical development, Oral presentation studies, The problems of Turkish today in the presence of current texts, The writing of "de", "ki" and "mi" in the accompaniment of current texts, The problems of writing Turkish words in the accompaniment of compiled texts (combined), Text analysis: Analysis of a scientific article, Applications related to spelling rules and punctuation, Text analysis: Analysis of a column, Expression disorders, language errors and applications, Turkish as a scientific language with sample texts, Oral presentation studies

RKUL104 University Culture II

(0+2), ECTS:4

The student's awareness of the privilege of being a "university student" throughout his/her university life enables him/her to realize that the university is not only a place of lectures and vocational acquisition, but that it should be a participant and guide rather than understanding and interpreting what is going on in university life, in the world and its surroundings, rather than being a follower of these. In this context, it includes participation in seminars and conferences held within the university.

III. SEMESTER

(Theory+Application+Credits+ECTS)

GTE235 Meat Products Technology

(2+0), ECTS:5

Introduction to Meat Products Technology, Definition of Meat and Its Place in Human Nutrition, Meat Structure, Components and Properties of Components, Meat Sources as Food, Meat Quality of Butchery Animals, Microbial Quality and Analysis in Meat and Meat Products, Preservation Methods of Meat and Meat Products, Poultry Meat Processing Technology, Fish Processing Technology, Meat and Meat Products Technologies Examples – Presentations

GTE221 Food Analysis Applications I**(0+4) ECTS:6**

Introduction of laboratory equipments, Preliminary information about laboratory safety and experiments, Solution Preparation Subject Description, Preparation of solutions by weight and volume percent, Preparation of molar and normal solutions, Use of pH Meter, Physical and chemical analyzes in sausage, Determination of specific gravity in milk and dairy products , Determination of the amount of acid in milk and dairy products, Weigh a thousand grains in wheat, Physical analysis of red meat, Use of Spectrophotometer, Theoretical calculations for laboratory, Make-up Experiments, General Review and Discussion

GTE231 Food Preservation and Packaging Techniques**(2+0), ECTS:2**

Advances in Food Preservation, Basic Principles in Food Preservation, Effect of Environmental Factors on Microbial Growth, Food Deterioration, Food Preservation by Cold and Freezing Methods, Food Preservation by Heat Treatments, Preservation of Foods with Chemical Preservatives, Preservation of Foods with Chemical Preservatives, Food Preservation in Inert Atmosphere, Radiation Irradiation, Packaging Techniques, Glass Packaging Materials, Metal and Paper Packaging Materials and Techniques, Plastic Packaging Materials and Techniques

GTE217 Food Technology Applications I**(0+6), ECTS:8**

Production Techniques: (Milk and Dairy Products Production Technology) Pasteurized milk, yogurt and fruit yogurt, cheese and cheese types, Oil production stages, butter, cream production and production Technologies, Production Techniques: (Flour and Bakery Products Production Technology) Bread, Bagel, Pastry, Pizza, Pastry, Cookies, Biscuit, Chocolate, Pasta production stages

GTE229 Ready Meal Systems and Specialty Foods Technology**(3+0) ECTS: 5**

An Overview of the Food Industry Industry, Management of Mass Meal Systems, Menu Planning, Kitchen Planning, Hygiene and Sanitation in Food Businesses, Food Poisoning, Sugar Production Technology, Cocoa and Chocolate Production Technology, Confectionery Production Technology, Tea Technology, Coffee Technology, Kitchen Design and Equipment, Legislation Related to Collective Nutrition Systems

GTE237 Fruit and Vegetable Processing Technologies**(2+0) ECTS:4**

Fruit and Vegetable Components I, Fruit and Vegetable Components II, Acceptance of Fruits and Vegetables into Operation, Pre-Processes in the Processing of Fruits and Vegetables, Fruit and Vegetable Storage, Fruit and Vegetable Microbiology, Fruit-Vegetable Canning Technology I, Fruit-Vegetable Canning Technology II, Fruit Juice Production Technology, Jam-Marmalade Production Technology, Tomato Paste Production Technology, Ketchup Production Technology, Fruit and Vegetable Drying Technology Basic Principles, Drying Technology Applications

IV. SEMESTER**(Theory+Application+Credits+ECTS)****GTE200 Vegetable Oil Technology****(2+0) ECTS:4**

Course introduction: Scope, importance and rules, Basic chemical composition of edible oils, Fatty acids that form the basic structure of oils, Sources of fat and oil, classification and use of commercially important vegetable oils, Deterioration, evaluation and storage of oils and oily raw materials, Oil extraction, Oil refining, Olive oil production technology, Oil hydrogenation, hydrogenated oil and margarine production, Products prepared from solid and liquid oils, Hydrolysis, esterification and

interesterification, mono and diglyceride production, Oxidation in edible oils, its importance and chemical mechanism

GTE224 Food Analysis Applications II

(2+0) ECTS:4

Preliminary Information on Laboratory Safety and Experiments to be Conducted, Theoretical Information on the Preparation of Solutions to be Used for Food Analysis, Preparation of Solutions Required for Food Analysis and Sampling Procedure, Determination of Moisture in Foods, Analysis of Water-Soluble Dry Matter (Brix) in Foods, Analyses Performed on Vinegar, Determination of Fat in Foods (Solid-Liquid Extraction), Obtaining Volatile Oil by Distillation Method, Determination of Fat in Milk (Gerber Method), Determination of Ash in Flour, Determination of Gluten in Flour , Sensory Analyses Performed on Foods, Theoretical Calculations for the Laboratory, Make-up Experiments, General Review and Discussion

GTE230 Food Technology Applications II

(0+6), ECTS:7

General principles and pre-treatments in the processing of fruits and vegetables. Processing of fruits and vegetables for canning, drying of fruits and vegetables, production of tomato paste, production of fruit and vegetable juices, production of jam, marmalade, jelly

MET101 Professional Ethics

(2+0) ECTS:2

Examining the concepts of ethics and morality, Examining the concepts of ethics and morality, Examining the ethical systems, Examining the ethical systems and the factors that play a role in the formation of morality, Examining the factors that play a role in the formation of morality, Examining professional ethics, Examining the consequences of professional corruption and unethical behaviors in professional life, Ethical Behaviors, Social and Professional Responsibility in Production, Social and Professional Responsibility in Marketing

GTE234 Organic Agriculture and Bakery Products Technology

(2+0) ECTS:4

What is Organic Agriculture? Objectives-Advantages-Disadvantages, Parameters to be Followed in Organic Agriculture and Organic Agriculture Practices, Good Agricultural Practices, Ecological and Sustainable Agricultural Models-Sowing Watch Practice, Chemical Structure of Cereal Grain and Grain Formation, Storage of Wheat, Processing of Wheat (Cleaning-Aging-Adding) , Wheat Grinding-Grinding Technology, Wheat Screening and Sieving Technology, Wheat and Flour Quality Parameters, Bread and Biscuit Production Technology, Pasta and Bulgur Production Technology

GTE222 Dairy Technology

(2+0) ECTS:4

Definition and Components of Milk, Definition and Components of Milk, The physico-chemical properties of milk, Characteristic Properties of Milk Components, Collection and acceptance of milk to the factory, Technological and heat treatments applied to milk, Sources of beneficial and harmful microorganisms in milk and transmission routes, Milk Proteins and Coagulation Mechanism, Cheddar cheese production Technology, White Cheese Processing Technology, Milk powder Production Technology ,Yoghurt- Ayran Production Technology, Butter Production, Ice Cream Production Technology

SECMYO Optional Lesson

(2+0) ECTS:2

One of the courses in the optional Vocational School course pool of the program below is selected.

***MYO003 Medical Terminology:** Introduction to Terminology, Reading rules of terms, Prefixes, Suffixes, Term types, Movement System Terms, Blood Terms, Cardiovascular System Terms,

Respiratory System Terms, Digestive System Terms, Urinary System Terms, Genital System Terms, Endocrine System Terms, Nervous System and Psychiatry Terms, Sense Organs Terms, Diagnostic Terms

***MYO015 Social Responsibility Project:** Introduction to the course, basic concepts, the concept of social responsibility and an overview of social responsibility campaigns, determination of project topics (children, the elderly, women, environmental problems, people with education and learning problems, patients and health problems, etc.), project preparation, presentation. Getting to know non-governmental organizations and their work.

***MYO020 Career Planning and Professional Competencies:** The purpose of the course and acquaintance, the services offered by the unit to the students, the introduction of the unit, the importance of the internship, the explanation of the elements that make up the career, the competencies and abilities, the definitions of concepts, the importance of career formation, What are technical abilities, how to develop and how to use them, Individual What are the skills and how they should be developed and how they should be used, The scope of introduction to the inventory tests, their usefulness, Transfer of CV preparation techniques, The importance and techniques of the cover letter, Making students prepare their own CVs, Sharing sample CVs, Analyzing students' own CVs, Importance of communication network and how to create it, Importance and usage techniques of online platforms, Creating a career-based social media account, Importance and methods of body language and effective communication in interviews, Explaining and applying interview techniques, Conditions, system, positive and negative aspects of the public sector, necessary To convey the activities and employment areas within the scope of the Public Sector, to transfer the conditions, system, positive and negative aspects, necessary competencies and employment areas of the private sector, To convey the conditions, system, positive and negative aspects, necessary competencies and employment areas of the private sector, Compilation analysis of what the sector participants from different fields who were guests for three weeks told, Work/internship processes abroad, Application to trainings/projects abroad, Announcement of the project results and having students fill out a course evaluation form.