



## Tokat Gaziosmanpaşa University

### Tokat Vocational School Chemical Technology

KT108 CAREER PLANNING					
Semester	Code	Name	T+P	Credit	ECTS
2	KT108	CAREER PLANNING	1	1	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Asist Prof.Dr. Meryem Keçeci Sarıkaya	None

#### The aim of lesson :

The Career Planning course aims to create awareness among students about the importance of career planning during the preparation process for the business world by enabling them to understand the business world, different sectors, and the requirements of these sectors. The course helps students explore their personal competencies and gain a correct understanding of the expectations of the business world, assisting them in developing their knowledge and skills in a way that aligns with the requirements of relevant sectors.

#### Course Contents :

The content of the course includes topics such as the definition of the career concept, stages of career planning, exchange programs, communication skills, time management, problem-solving, public and private sectors, resume preparation, and effective interview skills.



## Tokat Gaziosmanpaşa University

### Tokat Vocational School Chemical Technology

KT103 GENERAL CHEMISTRY I					
Semester	Code	Name	T+P	Credit	ECTS
1	KT103	GENERAL CHEMISTRY I	4	4	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Associate Prof.Dr. Kadriye Özlem SAYGI	None

#### The aim of lesson :

It is aimed to give the basic concepts that may be necessary in chemistry education and to create the infrastructure when the student starts the chemistry associate degree program.

#### Course Contents :

Structure of the Atom: Electrons, Discovery of the nucleus, Atomic number, Atomic mass. Structure of the Atom: Atomic spectroscopy, Atom according to Bohr. Periodic System: Periodic system, Energy levels and periodic system, Wave properties of electrons, Electron spin. Periodic System: Quantum numbers, Atomic radii, Ionization potential, Electron affinity. Chemical Bonds: Electrons in the molecule, Ion bond, Covalent bonds, Polarity of bonds, Electronegativity. Chemical Bonds: Bond energies and electronegativity order, Resonance, Molecular shapes and hybrid orbitals, Molecular orbitals. Stoichiometry: Atom-gram, The simplest formulas, Molecular formulas, Chemical reactions, Oxidation numbers Stoichiometry: Oxidation-reduction, Balancing chemical equations, Calculations from chemical equations, Equivalent-mass. Gases: Volume, Temperature, Pressure, Polymer-V relation, V-T relation, Partial pressures. Gases: Equation of state, Avagadro's principle, Graham's law of diffusion, Kinetic theory, Kinetic theory and equation of state. Gases: Deviations from ideal behavior, Critical temperature, Cooling with expansion. Solids: Properties of solids, Structure determination, Space lattice. Solids: Stacking of atoms, Solid types, Crystal energies, Disorders in solid state structure



## Tokat Gaziosmanpaşa University

### Tokat Vocational School Chemical Technology

KT105 GENERAL CHEMISTRY LABORATORY I					
Semester	Code	Name	T+P	Credit	ECTS
1	KT105	GENERAL CHEMISTRY LABORATORY I	4	2	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

#### The aim of lesson :

To provide an idea about the application areas of the subjects by conducting experiments on General Chemistry I subjects and to gain working experience in the chemistry laboratory.

#### Course Contents :

1- Physical Properties and Definition of Substances, 2- Separation of Mixtures into Components, 3- Diffusion of Gases, 4- Law of Certain Proportions, 5- Distillation (Destination), 6- Stoichiometry, Finding the Simplest Formula of a Substance, 7- Equivalent Gram Weight of Magnesium, 8- Flame Emission, 9- Finding the Density of Solids, Liquids and Gases



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

İNG102	English II				
Semester	Code	Name	T+P	Credit	ECTS
2	İNG102	English II	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor H.Tüzün Paçcı	None

The aim of lesson :

The objective of this course is to be able to bring the students to the A2 Level in terms of CEF.

Course Contents :

Compulsory Foreign Language Course ( English)



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

TD102	Turkish Language II				
Semester	Code	Name	T+P	Credit	ECTS
2	TD102	Turkish Language II	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Asist Prof.Dr. YAVUZ GÜNEŞ	None

The aim of lesson :

To make students become familiar with the correct, beautiful and efficient use of the Turkish language to make them base the written and spoken intercourse of the language on strong principals to make them gain their skills in correspondence, presentations and explanations successfully in their business life to make them become intellectual individuals who read, think, inquire and bring solutions.

Course Contents :

According to their subjects, reading, listening, writing, presentation, discussion, sampling, question and answer techniques will be used.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT205	BIOTECHNOLOGY				
Semester	Code	Name	T+P	Credit	ECTS
3	KT205	BIOTECHNOLOGY	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

The aim of lesson :

To provide information about the scope, history and biotechnology industry of biotechnology and to comprehend the importance of industrial microorganisms. In addition, industrial, medical and Application areas of environmental biotechnology and food biotechnology, knowing the methods used in biotechnology and plant and animal biotechnology to have knowledge about.

Course Contents :

General information about biotechnology History and present of biotechnology. Biotechnology Products Hormones, Enzymes, Monoclonal antibodies Peptide-Protein Structured drugs. Affinity chromatography and fast protein liquid chromatography (FPLC)



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT106	GENERAL CHEMISTRY LABORATORY II				
Semester	Code	Name	T+P	Credit	ECTS
2	KT106	GENERAL CHEMISTRY LABORATORY II	4	2	5

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

The aim of lesson :

To provide an idea about the application areas of the subjects by conducting experiments on General Chemistry II subjects and to gain working experience in the chemistry laboratory.

Course Contents :

Factors Affecting Chemical Equilibrium Determination of Equilibrium Constant Chemical Kinetics: Factors Affecting Reaction Rate pH and Buffer Solutions Acid-Base Titration: Vinegar Analysis Determination of Gas Constant Soap Synthesis



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT110	RESEARCH METHODS AND TECHNIQUES				
Semester	Code	Name	T+P	Credit	ECTS
2	KT110	RESEARCH METHODS AND TECHNIQUES	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Asist Prof.Dr. Meryem Keçeci Sarıkaya	None

The aim of lesson :

The aim of the course is to inform students about research methods and techniques. The course covers topics such as basic research methods and techniques, literature review, utilization of library resources, and research reporting.

Course Contents :

The content of this course includes the basic characteristics of scientific knowledge, the fundamental features of scientific research, the steps of scientific investigation, data collection techniques, literature review, data analysis, data reporting, and preparation of a scientific research proposal.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT210	FOOD CHEMISTRY				
Semester	Code	Name	T+P	Credit	ECTS
4	KT210	FOOD CHEMISTRY	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Asist Prof.Dr. Meryem Keçeci Sarıkaya	None

The aim of lesson :

The aim of this course is to inform students about the chemical structures and classification of components found in the structure of food. Students who take this course are also expected to learn about the enzymatic and chemical reactions occurring in food components and the impact of these reactions on the properties of food.

Course Contents :

The content of the course consists of food chemistry, water chemistry, carbohydrates, proteins, lipids, vitamins, enzymes, food additives, food preservation methods, and food contaminants.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT202	INSTRUMENTAL ANALYSIS				
Semester	Code	Name	T+P	Credit	ECTS
4	KT202	INSTRUMENTAL ANALYSIS	4	4	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Associate Prof.Dr. KADRİYE ÖZLEM SAYGI	None

The aim of lesson :

Recognition of the theory and interpretation of the application of spectral techniques and spectroscopy branches necessary for quantitative and structure analysis

Course Contents :

Importance of Instrumental Analysis, Electromagnetic Radiation, Optical Spectroscopy Instruments, Detectors, Molecular UV-Vis and Near IR Absorption Spectroscopy, Absorption Laws, Molecular Fluorescence and Phosphorescence, Atomic Spectroscopy, Infrared Absorption Spectroscopy, Fundamentals of Chromatography, Nuclear Magnetic Resonance Spectroscopy, Applications of Proton NMR Spectroscopy, Carbon-13 and Other NMR Spectroscopy, Thermal Analysis Methods: DSC, DTA, TGA.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT252	TEXTILE AND DYEING MATERIALS				
Semester	Code	Name	T+P	Credit	ECTS
4	KT252	TEXTILE AND DYEING MATERIALS	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

The aim of lesson :

The aim of this course is to examine the basic processes of chemical technician candidates applied in paint and textile industries. to help them get to know each other is to increase their knowledge and experience.

Course Contents :

Dyeing methods applied in textile and using dye according to fiber type. Chemical structures of fibers. Diazolation reactions, nitration reactions.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT208	OCCUPATIONAL HEALTH AND SAFETY				
Semester	Code	Name	T+P	Credit	ECTS
4	KT208	OCCUPATIONAL HEALTH AND SAFETY	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Asist Prof.Dr. Meryem Keçeci Sarıkaya	None

The aim of lesson :

The aim of this course is to educate university students about the importance of occupational safety, its culture, and the responsibilities they have in this regard, as well as to provide them with knowledge about the topics they need to be aware of throughout their careers and lives.

Course Contents :

The content of the course consists of the fundamental concepts of occupational health and safety, occupational accidents, hazards and risks, physical and chemical hazards, hygiene, biological hazards, psychosocial risks, causes of occupational accidents, personal protective equipment, fire safety measures, first aid, emergency response plan, evacuation, and rescue.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT254	EXPERIMENTAL DESIGN				
Semester	Code	Name	T+P	Credit	ECTS
4	KT254	EXPERIMENTAL DESIGN	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Asist Prof.Dr. Meryem Keçeci Sarıkaya	None

The aim of lesson :

The aim of this course is to teach students the basic principles of experimental design and provide them with knowledge about statistical analysis methods.

Course Contents :

The content of the course includes topics such as experimental design methods, Taguchi experimental design, factors affecting the experiment, basic statistics, and statistical software.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT256	BIOCHEMICAL TECHNIQUES				
Semester	Code	Name	T+P	Credit	ECTS
4	KT256	BIOCHEMICAL TECHNIQUES	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

The aim of lesson :

To examine the general properties of enzymes, their catalysis mechanisms, their role in metabolism and their regulation; to comprehend enzyme kinetics and inhibition types.

Course Contents :

Training is given on Methods, Chromatography, Electrophoresis, Radioactive Measurements, Immunochemical Techniques, Electrochemical Techniques. Collection of samples in biochemistry, preanalytical factors affecting biochemical analysis, clinical biochemistry samples, devices in the biochemistry laboratory ,Proteins in biochemistry.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT109	LABORATORY SAFETY				
Semester	Code	Name	T+P	Credit	ECTS
1	KT109	LABORATORY SAFETY	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

The aim of lesson :

The aim of this course is to provide the necessary skills for university students throughout their careers and lives. the importance of work safety, culture and responsibilities and actions in this regard to ensure that they are informed about the necessary issues

Course Contents :

Occupational health and safety concept, holistic approach to occupational health and safety; a culture of risk prevention in the workplace; the importance of safety culture and its place in daily life; establishing and maintaining a safety culture; basic principles of occupational health and safety; place of occupational health and safety in business management, healthy and safe life.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT104	GENERAL CHEMISTRY II				
Semester	Code	Name	T+P	Credit	ECTS
2	KT104	GENERAL CHEMISTRY II	4	4	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Associate Prof.Dr. Kadriye Özlem SAYGI	None

The aim of lesson :

The aim of this course is to make chemistry love and comprehend.

Course Contents :

Liquids and processes: Properties of liquids, Equilibrium vapor pressure, Boiling points, Heating and cooling curves, Phase diagrams. Solutions: Types of solutions, Concentration expressions, Properties of solutions, Electrolytes, Dissociation (Dissociation and attraction forces between ions) Solubility, Colloids. Solution Reactions: Acids and bases, Neutralization, Polyprotic acids, Hydrolysis and amphoteric, Stoichiometry of solutions. Chemical Kinetics: Factors affecting the reaction rate, nature of the reactants, Concentration of the reactants, Temperature, Catalysis. Chemical Kinetics: Collision theory, Absolute velocity theory. Chemical Equilibrium: Equilibrium state, Effect of masses, Equilibrium calculations and heterogeneous equilibrium, Equilibrium concentrations. Aqueous Solution Equilibrium: Dissociation, dissociation of weak acids-bases, Calculations using dissociation constants, Dissociation of water, pH and titration, Buffer solutions, Complex ions, Solubility and precipitation, Equilibrium established at the same time, Hydrolysis equilibria, Electrochemistry, Organic Chemistry.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT201	ANALYTICAL CHEMISTRY				
Semester	Code	Name	T+P	Credit	ECTS
3	KT201	ANALYTICAL CHEMISTRY	4	4	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Associate Prof.Dr. Kadriye Özlem SAYGI	None

The aim of lesson :

To give information about the basic principles of analytical chemistry, including acid-base reactions. It is planned to teach classical qualitative analysis systematically in laboratory studies.

Course Contents :

This course aims to provide information about qualitative and quantitative analysis methods based on equilibria in aqueous solutions. Concentration units, strong acids and bases and dissociation reactions, buffers and buffer capacity, pH calculation of an environment, amphoteric substances and reactions are given.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT207	METHODS OF MATHEMATICS IN CHEMISTRY				
Semester	Code	Name	T+P	Credit	ECTS
3	KT207	METHODS OF MATHEMATICS IN CHEMISTRY	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor ELİF AKTÜRK BOZDEMİR	None

The aim of lesson :

The use of basic mathematical concepts and relations in chemical processes intended to be taught. For mathematical operations necessary for chemistry education the preparation of students.

Course Contents :

Coordinate systems. Functions and graphs. Logarithms. Derivative. Integral Sequences and series. Differential equations. Matrices and determinants.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

KT204	INSTRUMENTAL ANALYSIS LABORATORY				
Semester	Code	Name	T+P	Credit	ECTS
4	KT204	INSTRUMENTAL ANALYSIS LABORATORY	4	2	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Associate Prof.Dr. KADRİYE ÖZLEM SAYGI	None

The aim of lesson :

will be able to operate instruments used for qualitative and quantitative analysis of real samples and to have the knowledge and skills to make analyses.

Course Contents :

UV-visible region spectroscopy, Spectrophotometric titration, IR spectroscopy, High pressure liquid chromatography, Gas chromatography



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

ÄİT101	Ataturk's Principles and History of Turkish Revolution I				
Semester	Code	Name	T+P	Credit	ECTS
1	ÄİT101	Ataturk's Principles and History of Turkish Revolution I	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Specialist Dr. Adnan GELMEZ Specialist Dr. Sadet ALTAY Specialist Dr. Ayşe ERYAMAN Specialist Dr. Sabri ZENGİN Specialist Dr. İzzet Bahri ATEŞLİ	None

The aim of lesson :

In order to understand conditions and features of the establishment of Republic of Turkey: To understand the reasons that forced Turkish nation to have Independence War, in which condition and within which terms Turkish War of Independence took place, upon which basis the state was established, and finally to educate next generations who know establishment philosophy of the state and who are respectful to Turkish state and nation.

Course Contents :

Aim of the course, its scope, and basic concepts. Final period of Ottoman Empire, its problems, modernization efforts and collapse. Turkish War of Independence.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

İNG101	English I				
Semester	Code	Name	T+P	Credit	ECTS
1	İNG101	English I	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor H.Tüzün Paçcı	None

The aim of lesson :

The objective of this course is to be able to bring the students to the A2 Level in terms of CEF.

Course Contents :

Compulsory Foreign Language Courses (English)



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

TD101	Turkish Language I				
Semester	Code	Name	T+P	Credit	ECTS
1	TD101	Turkish Language I	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor Dr. ERDAL BARAN	None

The aim of lesson :

Undergraduate and graduate-level students the right to express themselves correctly and effectively, to let them acquire the main language awareness;to teach panels, conferences, panel discussion, forum type meetings effective listening.

Course Contents :

Course objectives, scope, and to provide information on basic concepts. The basic problems of the Turkish language, rules. Effective and good use of language.



## Tokat Gaziosmanpaşa University

Tokat Vocational School  
Chemical Technology

AİİT102	Ataturk's Principles and History of Turkish Revolution II				
Semester	Code	Name	T+P	Credit	ECTS
2	AİİT102	Ataturk's Principles and History of Turkish Revolution II	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Associate	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Chemical Technology		None	Instructor Sadet Altay Ayşe Eryaman Emre Tekinsoy	None

The aim of lesson :

To understand Ataturk's reforms and how basic principles of the republic came into existence in Republic of Turkey establishment period. To help Turkish youth in the way of being unified individuals as a nation and becoming effective in the contemporary world.

Course Contents :

The last periods of the War of Independence. Treaties that causes the establishment of Republic of Turkey. Ataturk's principles which determine the features of Republic of Turkey and the revolutions which strenghten these principles