

T.C. ÜSKÜDAR UNIVERSITY
FACULTY OF ENGINEERING AND NATURAL SCIENCES
DEPARTMENT OF FORENSIC SCIENCES (TURKISH)
COURSE CONTENTS

YEAR ONE

1st TERM – FALL SEMESTER

ATA101 – Principles of Atatürk and History of Revolutions I **2 (0+0+2) ECTS: 3**

The main objective of the course is to teach the founding of the Republic of Turkey, the foundations and principles on which it is based. The course emphasizes the importance of Atatürk's principles and reforms in the establishment and development of the Republic of Turkey. In the first part, the pre-War of Independence period is discussed and the reasons for the disintegration and collapse of the Ottoman Empire are examined, the First World War and the occupation of Anatolia are explained, the Kuvayı Milli movement and the Misak-ı Milli understanding are explained in conceptual and historical terms.

TURK101 – Turkish Language I **2 (0+0+2) ECTS: 3**

The answer to the question of what is language, the place and importance of language as a social institution in the life of the nation are examined in this course. The place of the Turkish language among the world languages, the historical periods of the Turkish language, the sounds in Turkish and its classification, the phonetic features of Turkish and the rules about phonetics, Turkish affixes and their application, general information about composition, the plan and application to be used in composition writing, petition and CV writing, spelling and punctuation rules constitute the content of the course.

RKUL101 – University Culture I **0 (2+0+1) ECTS: 1**

In this course, both the society and the country's agenda are taken into account, and some topics required by the university agenda are shared with the students by some experts from within or outside the university. The knowledge and experiences of professionals working in various parts of the Forensic Sciences sector are shared with students.

ING101 – English I **3 (0+0+3) ECTS: 3**

This course aims to improve and improve students' English and to gain interpersonal communication skills. As a method of improving their English, speaking and listening experiences will be created that do not limit the grammar of English, which linguists call "penetration". In parallel, with an emphasis on writing skills, the curriculum vitae that they will use in their careers, job applications and job/intention letters, various formats and contents to improve their communication are emphasized.

ABL119 – Forensic Biology**3 (0+4+5) ECTS: 7**

In this course, all biological concepts are taught to form the basis for the compulsory and elective Forensic Biology and Genetics courses in the coming years. The titles of this course include the following topics: Introduction to Forensic Biology and the beginning of life, Forensic Sciences and the importance of biological evidence, classification of living things, diatoms and drowning in water, microorganisms and introduction to forensic microbiology, food poisoning in Forensic Sciences, cell's structure and organelles and important organelles in terms of Forensic Sciences, mitochondrial DNA in Forensic Science, introduction to Forensic Entomology – arthropods and real case reports.

ABL121 – Introduction to Forensic Chemistry I**3 (0+2+4) ECTS: 7**

The aim of the course is to teach the basics of Forensic Chemistry to the first year students, to teach the methods of sample collection and analysis in Forensic Chemistry and at the same time to explain the working principles of instrumental analyzers used in Forensic Chemistry laboratory, to teach the methods used for the detection of substances that lead to crime and substance addiction, to teach the correct classification of the samples to be analyzed and to reinforce the basic chemical experiments with laboratory practice, as well as to teach the standardization and validation of laboratory experiments.

ABL123 – Forensic Mathematics I**3 (0+0+3) ECTS: 5**

In this course, diameter and caliber conversions based on mathematical calculations in Forensic Sciences, mathematical applications in pollen analysis, mathematical applications in Forensic Anthropology, Time of Death calculations, functions and inequalities in Forensic Sciences, trigonometry in Forensic Sciences are covered.

2nd TERM – SPRING SEMESTER**ATA102 – Principles of Atatürk and History of Revolutions II****2 (0+0+2) ECTS: 3**

In the second part of the Principles of Atatürk and History of Revolutions course, the Kemalist thought system, Atatürk's principles and reforms, and especially the principle of secularism are explained, with an emphasis on the revolutions carried out in various fields, especially in education, economy, politics and culture, with the establishment of the Republic.

TURK102 – Turkish Language II**2 (0+0+2) ECTS: 3**

Types of written and verbal expression, punctuation and spelling rules, expression disorders, speech education, use of expression and mimics, expressing oneself properly in front of the public, use of footnotes and bibliography, introduction, development and conclusion and paragraph analysis within the scope of main idea, text formation studies Information about important writers and poets is transferred to the student.

RKUL102 – University Culture II**0 (2+0+1) ECTS: 1**

In addition to the course given in the first semester, the knowledge and experiences of professionals working in the Forensic Sciences sector are continued to be shared. In addition, important films and documentaries are shared with students by choosing from current content in the field of Forensic Sciences.

ING102 – English II**3 (0+0+3) ECTS: 3**

Reading texts about the profession, grammar exercises, vocabulary activities, translation activities, listening and speaking exercises are the main contents of the course.

ABL122 – Introduction to Forensic Chemistry II**3 (0+2+4) ECTS: 7**

Principles of chemical equilibrium, acids and bases, acid-base balances, buffer solutions, Henderson-Hasselbalch equation, pharmacokinetic concept, forms of substances in biological fluids, preparation methods in biological fluids, chromatography, instrumental analysis methods used in forensic chemistry, glass and soil analysis, textile and plastic material analysis, fire and explosive analysis, ink and paint analysis, method development and validation are taught.

ABL124 – Forensic Mathematics II**3 (0+0+3) ECTS: 5**

In this course, central tendency measures for advanced mathematical calculations in Forensic Sciences, dispersion measures, methods used in determining the shot direction, shot angle calculations, resuscitation of shots, mathematical applications in forensic identification, mathematical calculations in blood pattern analysis, central tendency and distribution measures, indefinite integral calculations. Integration techniques and applications are covered.

ABL110 – Forensic Science Practices and Legal Regulations**3 (0+0+3) ECTS: 5**

In this course, the general principles and basic concepts of constitutional law, especially in comparison with liberal western democracies, are explained. The topics of the course are the constitution, the making and amendment of the constitution, the control of constitutionality, political power, sovereignty, the concept of the state, state forms, organs of the state, constitutional state and constitutionalism movements, legislative-executive-judicial annexes, political regimes, government systems, parliamentary government regime, presidential regime, parliamentary regime, political parties, democracy, elections, electoral systems, fundamental rights and freedoms, etc. consists of topics.

ABL126 – Introduction to Python Programming for Forensic Scientists**2 (2+0+3) ECTS: 4**

In this course, the Python coding language will be introduced and the necessary information for the beginning will be shared with the students. The content of the course consists of projects on coding in Python, simple commands, data types, taking inputs, arithmetic operations, comparison and logical operators, conditions, lists, functions, random method and topics covered during the semester. With the course, students can understand the working logic of computers, write and run their first codes, and learn about variables, loops, collections, etc. It is aimed to become familiar with basic programming concepts.

YEAR TWO

3rd TERM – FALL SEMESTER

ABL231 – Forensic Organic Chemistry I

3 (0+2+4) ECTS: 5

The aim of this course is to provide students with the structure, synthesis and causes of poisoning of organic compounds. Carbon chemistry, hydrocarbons, carboxylic acid and its derivatives, aromatic compounds and organic compound poisoning are covered in the course.

ABL223 – Introduction to Forensic Physics I

3 (0+2+4) ECTS: 7

In order to form the basis of forensic physics, this course covers basic measurements and error calculation, measurements in forensic science, free fall, simple pendulum, ballistic pendulum and its calculations, external ballistics, flight mechanics, forensic glass investigations, making their traces visible, with calculations over real case files.

ABL211 – Professional English I

2 (0+0+2) ECTS: 3

The skills of those who will work in the field of Forensic Sciences are improved by scanning resources and reading and understanding scientific articles in the current and foreign language literature.

RPSI109 – Positive Psychology and Communication Skills

3 (0+0+3) ECTS: 5

In this course, basic principles and concepts of psychology, psychology of happiness and optimism, ways to be happy, peaceful and successful, basic psychological approaches such as human cognitive, affective and psychological dynamics, psychoanalysis, cognitive psychology, behavioral approach, neurobiological approach, motivation, self-confidence, sense of dignity. Concepts and phenomena such as a sense of belonging, a sense of belonging, and approaches that enable individuals to realize their own resources and values in order to be happy, peaceful, successful and have high life satisfaction are examined. In this course, students will evaluate research and conceptual studies on different topics and theoretical approaches, meaningful living, gratitude, frugality, happiness, hope, optimism, positive emotions, post-traumatic personal growth, resilience, self-esteem, strength, time perspective, students, They learn how to use methods such as brain map, signature strengths, gratitude journal, seven ways to increase happiness, learned positivity, and gratitude.

ABLXXX – Departmental Elective I

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

ABLXXX – Departmental Elective II

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

4th TERM – SPRING SEMESTER

ABL232 – Forensic Organic Chemistry II

3 (0+2+4) ECTS: 5

This course is a continuation of Forensic Organic Chemistry I course and the topics covered follow the predecessor course. During the course, the student continues to learn organic and inorganic structures, hydrocarbons and causes of poisoning, carboxylic acid and causes of poisoning, carboxylic acid derivatives and causes of poisoning, aromatic compounds and molecular structure of addictive drugs.

ABL224 – Introduction to Forensic Physics II

3 (0+2+4) ECTS: 7

In this course, forensic ballistics, motion in one dimension, motion in two dimensions, target ballistics, spectroscopy in forensic sciences, kinematics and trace studies are explained with case presentations.

ABL212 – Professional English II

2 (0+2+3) ECTS: 3

In the field of forensic science, professional English knowledge and skills are developed in preparing presentations and transfers, preparing posters, papers and writing articles.

RPRG104 – Entrepreneurship and Project Culture

2 (0+0+2) ECTS: 3

What is the project, what is the project culture, why the project is done, the relationship between the project and entrepreneurship, what are the projects to be supported, writing the justification for the project, finding and disseminating the project partner, preparing the project budget, writing the project reports, Erasmus+ projects, sample project writing activity and related These questions form the scope of this course.

ABL236 – Forensic Genetics

3 (0+4+5) ECTS: 7

In this course, the students will be taught about the collection of biological evidence from the crime scene, DNA sources, DNA extraction methods, polymorphic systems used from the past to the present and the basic principles of population genetics, identification, determination of kinship relations, etc. intended to convey the topics. The content of the course includes crime scene investigation and DNA sources, genetic markers and blood groups, polymorphic enzymes and proteins, forensic sciences and DNA relations, biological samples and DNA isolation methods; Its use in forensic sciences with RFLP, PCR and electrophoresis techniques, its use in forensic cases with VNTR and STR loci and somatic STRs, STR loci linked to X and Y chromosomes, its use in forensic cases with mitochondrial DNA and analysis techniques, problems and solutions in STR analysis, mini It covers the advantage of STR loci in forensic cases, SNP and identification, and the importance of DNA banks in case resolution.

2 (0+2+3) ECTS: 5

ABLXXX – Departmental Elective III

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

YEAR THREE

5th TERM – FALL SEMESTER

ABL331 – Criminalistics

3 (0+0+3) ECTS: 5

In this course, the theory and practice of examining trace and trace evidence will be covered. In this context, appropriate packaging, determination of class and personal characteristics, laboratory accreditation standards, methods in physical comparisons are presented.

ABL337 – Expertise and Ethics

3 (0+0+3) ECTS: 4

Legal regulations, responsibility awareness and quality assurance, as well as ethical problems in forensic science practices are discussed.

ABL335 – Crime Scene Investigation

3 (0+2+4) ECTS: 7

The main techniques and principles of crime scene investigation will be covered in the course, and the necessity of a rigorous scientific approach will be emphasized. The methods used in the documentation, identification and visualization of physical evidence will be covered with notes, sketches and photographs. The importance of crime scene data in determining the cause of death and the time after death is discussed.

ABLXXX – Departmental Elective IV

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

ABLXXX – Departmental Elective V

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

XXXXXX – Social Elective I

3 (0+0+3) ECTS: 5

In these courses, students are provided with the opportunity to take elective courses from different faculties according to their areas of interest and develop their working and learning techniques in different disciplines.

6th TERM – SPRING SEMESTER

ABL332 – Criminology and Victimology

3 (0+0+3) ECTS: 5

The aim of the course is to provide the transfer of the basics of criminology science. The content of the course consists of the basic subjects of criminology. During the course, the student knows the basic concepts of crime prevention, gains general command of the main theories and principles of crime and crime prevention, comprehends the purpose and importance of crime/delinquency prevention, knows the main features and characteristics of crime/delinquency primary, secondary and tertiary prevention, learns crime/delinquency prevention practices, can develop crime/delinquency prevention models and theories.

ABL334 – Statistics in Forensic Science

2 (2+0+3) ECTS: 5

Students who will be equipped with statistical knowledge and skills in advanced calculations will be taught the use of statistics in problems encountered in forensic sciences. Statistical concepts and methods to be used in forensic science literature and samples encountered in forensic cases are discussed in areas such as DNA analysis and the examination of blood stains.

ABL340 – Scientific Research Methods and Academic Reporting

2 (2+0+3) ECTS: 4

Within the scope of this course, students define communication, learn about communication types, develop critical thinking skills, learn to write academic reports, and experience transforming their academic reports into publication-type outputs.

ABLXXX – Departmental Elective VI

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

ABLXXX – Departmental Elective VII

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

XXXXXX – Social Elective II

3 (0+0+3) ECTS: 5

In these courses, students are provided with the opportunity to take elective courses from different faculties according to their areas of interest and develop their working and learning techniques in different disciplines.

YEAR FOUR

7th TERM – FALL SEMESTER

ABL403 – Forensic Sciences Field Application I

0 (4+0+2) ECTS: 8

It is ensured that students have information about the studies carried out in public and private criminal laboratories, and have an idea by experiencing applications in all forensic science specialties.

ABL408 – Forensic Medicine

3 (0+0+3) ECTS: 7

Information about the application areas of forensic medicine, its history, death, autopsy, wounds, sexual assault, domestic violence, forensic psychiatry, malpractice and human rights violations are given. In addition, forensic medicine structure in our country and in other countries, death information, death with its medical and legal dimensions and related concepts, clinical death, brain death, discontinuation of medical support in patients with brain death and legal problems, organ transplantation, post-mortem findings and its importance in terms of forensic medicine. Topics such as estimation of time of death, sudden and unexpected deaths, defective medical practices and legal aspects, postmortem toxicology are discussed.

ABL411 – Graduation Project I

0 (6+0+3) ECTS: 9

In this course, which lasts for two semesters, students are provided to prepare a project related to the field they want to study.

ABL413 – Contemporary Topics in Forensic Sciences

3 (0+0+3) ECTS: 5

It is aimed to learn current research topics, methods used in these fields and laboratory applications about the subjects of Forensic Sciences in the field of science. In addition, it is aimed to learn the current research topics on the subjects of Forensic Sciences in the field of social sciences, the methods used in these fields, the history of crime and crime, and the causes of crime with its criminological dimension.

ABLXXX – Departmental Elective VIII

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

8th TERM – SPRING SEMESTER

ABL404 – Forensic Sciences Field Application II

0 (4+0+2) ECTS: 8

In the course, which is taught as a continuation of the course given in the first semester, the lectures of the studies carried out in official and private criminal laboratories and the practices of other areas of expertise continue.

ABL407 – Clinical Practice

0 (4+0+2) ECTS: 4

Similar to real courts, it is a practice based on defending the reports of experts and answering questions before the defense and prosecution authorities.

ABL410 – Graduation Project II

0 (6+0+3) ECTS: 5

In this course, which lasts for two semesters, students are provided to prepare a project related to the field they want to study.

ABLXXX – Departmental Elective IX

2 (0+2+3) ECTS: 5

In these courses, students can take elective courses according to their interests from the courses offered by the Forensic Sciences Department and develop their working and learning techniques in different disciplines.

XXXXXX – Field/Social Elective

3 (0+0+3) ECTS: 5

In these courses, students are provided with the opportunity to take elective courses from a different department in the same faculty or from different faculties according to their areas of interest and develop their working and learning techniques in different disciplines.

DEPARTMENTAL ELECTIVE COURSES

ABL214 – Forensic Microscopy

2 (0+2+3) ECTS: 5

In this course, the use of microscopic techniques in the field of forensic science, microscopic examination of material from the crime scene such as trace evidence, fiber, hair, bullet casings and evaluation of the results obtained from these are discussed. The subjects are handled by discussing the case files.

ABL220 – Investigation in Forensic Cyber Crimes

3 (0+0+3) ECTS: 5

In this course, the concept of crime, the definition of forensic science, its characteristics and management, definition of cyber crimes, the analysis of FAT, NTFS, EXT and HFS filing systems, where the introduction to the tools, ways and methods used in informatics investigations, how data is stored at the level of filing systems and investigation processes are included.

ABL238 – Terminal Ballistic

3 (0+0+3) ECTS: 5

This course covers firearms and their effects on the body. The concept of ballistics, firearms, firearm residues, firearms bullet wounds, injuries caused by firearms, terminal symptoms in injuries related to firearms, sharp tool injuries, explosive substance injuries, clothing findings in firearm injuries are among the topics of the course.

ABL251 – Biosecurity and Bioterrorism

3 (0+0+3) ECTS: 5

The aim of the course is to introduce the concept of biosecurity with the introduction of biological warfare and its elements. In the course, after defining the basic concepts of biosecurity and bioterrorism, biological threats, category A, B and C diseases and disease-causing agents will be discussed. After explaining the concepts of avoidance, isolation, warning, agricultural threat, animal attacks, biosecurity and legal context, output management and model building will be explained and the future of biosecurity will be discussed. During the term, 3 weeks are devoted to case presentation and examination.

ABL252 – New Approaches in Forensic Chemistry

3 (0+0+3) ECTS: 5

In this course, the student adds laboratory applications and practical responses to the basic courses in Forensic Chemistry. The main outputs of the course are to follow current studies in Chemistry and Forensic Chemistry, to investigate new methods in the examination of antemortem and postmortem samples, to understand new publications brought to the literature by using instrumental analysis devices that can be found in a forensic laboratory.

ABL307 – Instrumental Analysis

2 (0+2+3) ECTS: 5

Instrumental analysis methods used in criminal laboratories, UV/VIS region molecular absorption spectroscopy, NMR spectroscopy, mass spectroscopy, molecular luminance spectroscopy, atomic emission spectroscopy, atomic emission spectroscopy, HPLC, gas chromatography, Raman spectroscopy, thermal analysis methods, validation methods are discussed.

2 (0+2+3) ECTS: 5

ABL309 – Biochemistry for Forensic Scientists

Analysis of postmortem and antemortem biological samples on the basis of the metabolism of drugs, drugs and psychoactive substances and the evaluation of the results will be discussed. Those who will work in the field of Forensic Sciences will be given basic knowledge of biochemistry, metabolic pathways, detoxification, absorption and excretion mechanisms, as well as questions that can be answered by biochemical analyzes in postmortem and antemortem samples.

ABL313 – Molecular and Cell Toxicology

2 (0+2+3) ECTS: 5

History of toxicology and its relationship with forensic sciences, general concepts about poisons and poisonings, sample preparation and analysis processes, case discussions. Information on poisoning symptoms at the cellular and molecular level, dose-toxicity relationship, and qualitative and quantitative analysis of the toxic substance is given.

ABL318 – Crime Laboratory Quality Assurance

3 (0+0+3) ECTS: 5

Internal and external quality control, quality assurance, ISO17025 principles, personnel management, work distribution, efficient working principles and laboratory management are discussed in the laboratories that work with evidence.

ABL322 – Forensic Document Examination

2 (0+2+3) ECTS: 5

The history of forensic document analysis, anatomy and neurophysiology of writing, storage, preservation and transmission of documents, handwriting and signature analysis, factors affecting writing and signature, incidental findings, laws and regulations, and report writing techniques in forensic document analysis are the subject of this course.

ABL325 – Wrongful Convictions in Forensics Science

3 (0+0+3) ECTS: 5

In this course, eyewitness and forensic cases, wrongful convictions, injustices that occur with eyewitnesses and the truth that should happen are emphasized. By enriching the course with cases, it is ensured that students understand the concept of conviction and gain sensitivity in the approach to forensic cases.

ABL326 – Criminal Justice and Forensic Science

3 (0+0+3) ECTS: 5

The aim of the course is to convey the basic concepts of criminal law to the students and to enable them to understand their equivalents in forensic sciences. In the course, the main subjects of criminal law, the purpose of criminal law, its main features and characteristics, its effects on other fields are examined, while the ability to develop solutions to problems related to criminal law is explained to the students throughout the semester.

ABL328 – DNA Analysis in Forensic Sciences

4 (0+0+4) ECTS: 5

In this course, topics from current literature and different fields of study are covered on the fundamentals that students learn in Forensic Biology and Genetics courses. DNA-based investigations, laboratory operation for DNA analysis, Forensic Entomology, Forensic Serology laboratory practice, DNA isolation protocols in Forensic Sciences, PCR, sex chromosome-linked DNA analysis, history of DNA analysis, NGS (Next Generation Sequencing), SNPs and its use in Forensic Sciences DNA kits linked to X and Y chromosomes are the topics covered in the course.

ABL330 – Physics and Chemistry for Forensic Scientists**4 (0+0+4) ECTS: 5**

The content of the course consists of forensic science approaches to physics and chemistry. On the basis of physics and chemistry learned in previous classes, literature information is processed in terms of forensic sciences. Students follow the current equivalents of these two disciplines in forensic sciences. New studies in the field of forensic physics and forensic chemistry are evaluated. In the course, where case practices are also discussed, students are also offered laboratory practice opportunities.

ABL338 – DNA Based Investigation**2 (0+2+3) ECTS: 5**

The aim of the course is to show the student who understands the importance of DNA structure, chromosomes and cell nucleus in Forensic Sciences, how DNA is used in forensic cases, the latest point of DNA technology and its use in Forensic Sciences, and the use of DNA reports in courts through investigation files. During the semester, the student learns DNA technology and its use in Forensic Sciences, classical DNA analysis in Forensic Sciences, state-of-the-art DNA analysis and its equivalent in Forensic Sciences, determining ancestry, the use of family scans in investigations, trace DNA analysis.

ABL341 – Advanced Forensic Chemistry**2 (0+2+3) ECTS: 5**

In this course, volatile chemicals and substance addiction, forensic drug analysis in urine samples, interpretation of analytical results in poisoning deaths, forensic examination of alcohol addiction, probation and substance tests, case history, instrumental analysis methods are discussed.

ABL353 – Abuse and Neglect Intended to Child, Elderly and Animal**3 (0+0+3) ECTS: 5**

The aim of the course is to develop knowledge and skills in forensic psychology practices, ethical and legal issues. During the semester, the student learns the ethical codes, ethical behaviors and ethical dilemmas related to ABA, ACA and APA. During the semester, the student reinforces what he has learned with the help of case reports while learning the basic concepts of forensic psychology and ethics, in this context, legal issues and ethical conflicts.

ABL354 – Psychoactive Substance Chemistry**3 (0+0+3) ECTS: 5**

The main subject of the course is to examine drugs, drugs, chemicals and substances used for this purpose that affect the central nervous system, their effects in the body, their metabolism, removal from the body and the duration of their stay in the body. In the course, in which the definitions and classifications of psychoactive substances from the past to the present are discussed, the methods and levels of the chemicals accepted as psychoactive substances in the current literature and sources are taught to the students.

ABL356 – Materials Science and Forensic Science**2 (0+2+2) ECTS: 5**

In this course, in which the structures and properties of materials encountered in daily life and corresponding in forensic sciences, mainly polymer materials, are examined, students learn the production and/or synthesis mechanisms of new materials. In this direction, the mechanical properties, chemical properties, electrical properties, thermal properties, optical properties and magnetic properties of the materials are examined and evaluated for forensic purposes. According to the course outcomes, students also learn the structures of natural or synthetic materials, which are important in forensic sciences and are increasingly important.

ABL420 – Shooting Incident Reconstruction**2 (0+2+3) ECTS: 5**

When the concept of criminalistics is evaluated, it is aimed to transfer all the information necessary to determine the origin of the incidents involving firearms, which is accepted as one of the most important issues, and the moment of the incident, including the moment of firing if necessary, with different models. In the content of this course, during the semester, topics such as firearms and their classification, different types of firearms and firing characteristics, firing angle, firing distance, firing residues and collections, clothing examinations and determination of the firing hand, comparisons and comparisons of cartridges, capsules, gunpowder and bullets, microscopes are explained in detail.

ABL421 – Advanced Forensic Genetics**2 (0+2+3) ECTS: 5**

The concepts and theories of forensic genetics will be discussed, and the use of genetics in forensic research will be explained. The history, principles and application areas of forensic genetics will be given with examples. Genetics in crime scene investigation, biochemistry and genetics of blood groups, fingerprint analysis, DNA analysis in forensic investigations, population genetics, legal regulations in DNA analysis, ethical problems in databases are presented.

ABL427 – Management of Forensic Laboratory**3 (0+0+3) ECTS: 5**

The course aims to teach the principles of professional behavior so that the examination of forensic evidence and analysis report can be given on the basis of scientific principles and legal requirements. The management of a criminal laboratory, its managers, the responsibilities of the employees, the working methods of the laboratory are among the main outputs of the course. In addition to these, the student learns the basic ethical principles and the basic principles of forensic ethics. The course covers the responsibilities of all stakeholders of the forensic laboratory.

ABL434 – Digital Evidence**3 (0+0+3) ECTS: 5**

Forensics teaches the methods, tools and techniques required for data recovery and analysis. Legal requirements for the submission of such data will also be considered. The module develops an understanding of the role of a computer forensic analyst using existing practices and investigative techniques while providing the necessary knowledge and skills to systematically undertake a forensic computing investigation. It provides an in-depth understanding of computer and network security principles, shows the most open vulnerabilities of a networked computer system, and shows how to design and build a secure network. Understanding the threats and vulnerabilities of systems, as well as associated preventive and remedial measures are covered in the course.

ABL435 – Molecular Filogenetics and Taxonomy**3 (0+0+3) ECTS: 5**

This course covers the basic concepts of population genetics, biostatistical analyzes of population genetics and the application of these analyzes. Population studies in forensic sciences, STR, Y chromosome, SNP data analysis will be applied with statistical programs. Students will be able to do both basic knowledge of population genetics and applied population genetic analysis in forensic sciences. At the end of this course, students will be able to plan their thesis experiments and analyze data. Arlequin software, where STR and Y-STR analyzes and SNP and Indel analyzes are performed, and data preparation are covered within the scope of the course.

ABL437 – Drug and Crime**3 (0+0+3) ECTS: 5**

Teaching drugs and stimulants, teaching the law articles defined in the TCK regarding the manufacture, sale, import, transportation and possession of drugs and stimulants, and examining the methods of combating these drugs with case studies by law enforcement officers are covered within the scope of the course. The aim is to introduce narcotic substances and to reinforce the diagnosis and diagnostic information on the subject. Reconciling these concepts with crime is the teaching goal of the course.

ABL438 – Interview and Investigation Techniques**3 (0+0+3) ECTS: 5**

The concepts of eyewitness testimony, conviction, interview, interrogation are explained through the Turkish Penal Code, and the concepts of interrogation techniques and interviewing witnesses are presented to the student through forensic cases. The main output of the course is to conduct interviews with the victim and the perpetrator correctly through investigation strategies.

ABL439 – Forensic Toxicology**2 (0+2+3) ECTS: 5**

During the course, antemortem and postmortem biological samples used in forensic toxicology studies, the necessary conditions for taking these samples with appropriate methods, their storage, sending them to the laboratory and preparing them for analysis, the devices and methods used in the analysis are discussed. Antemortem and postmortem biological examples constitute a large part of the course content.

ABL440 – Big Data in Forensic Science**3 (0+0+3) ECTS: 5**

The aim of the course is to understand the concepts of data mining and big data. The content of the course, which is planned with big data and data mining methods, includes basic concepts, data import and export, data exploration, decision trees and RF, regression, clustering, outlier detection, time series analysis and mining, association rules, text mining, network analysis. and the semester is completed with sample cases.

ABL441 – Cognitive Bias in Forensic Science**3 (0+0+3) ECTS: 5**

The aim of the course is to distinguish between cognitive biases and logical fallacies and to examine the equivalent of this distinction in forensic sciences. Basic concepts on forensic psychology, basic approaches about investigation methods, definition of crime and behavior, biological and sociological factors in criminal orientation are also examined throughout the semester. The one-semester curriculum also includes case reports and the study of cognitive distinctions.

ABL442 – Biometric Identification**2 (0+2+3) ECTS: 5**

The concept of biometrics, biometric identification and authentication, biometric systems and devices, processing of biometric data, working principles of biometric identification systems, the main topics covered during the semester and the outputs of the course. Application areas and features of different types of biometric recognition systems are discussed in detail and given to the student until the end of the semester.

ABL444 – Research and Practice in Criminology and Criminal Justice**3 (0+0+3) AKTS: 5**

In this course, the concept of crime, reasons for committing crimes, crime classification, social research strategies, Stanford Prison Experiment and Milgram experiment and research ethics concept, informed consent and informed consent, risk factors, importance of intervention, situational prevention, residivism, resources in the measurement of crime, criminology and criminal justice concepts are discussed in detail using black numbers, research techniques used in criminology, and secondary data analysis.

ABL445 – Forensic Medicine with Cases**3 (0+0+3) AKTS: 5**

The topics covered in the Forensic Medicine course are supported by case examples from the literature that the lecturer will convey to the students. In this direction, unusual objects that can be detected in autopsies, situations that may occur in traffic accidents, cases related to the way of death and crime device detection, mortal events that will occur with fire and non-firearms, deaths due to problems that may occur in biochemical metabolisms, difficulty of causation in terms of forensic medicine, malpractice and drug administration errors according to health law, expert witness and scientific opinion, forgeries that may occur in writing and signatures are given to students together with examples.