

<b>COURSE TITLE</b>	<b>COURSE CONTENT</b>	<b>HOUR (THEORY+ PRACTICE)</b>	<b>ECTS</b>	<b>PLANNED LEARNING ACTIVITIES AND TEACHING METHODS</b>	<b>LEVEL OF COURSE UNIT</b>	<b>COURSE LECTURER</b>
<b>ECZ111 MEDICAL BIOLOGY AND GENETICS</b>	The aim of the Medical Biology and Genetics course is to introduce the basic concepts about reproduction and the genetic material of living organisms, Mendelian genetics, general genetics, molecular genetics and human genetics to students.	2+0	2	The content of Medical Biology and Genetics course is to provide students with a basic understanding of reproduction, the genetic material of living organisms, Mendelian genetics, general genetics, molecular genetics and human genetics.	Bachelor's Degree	Asist Prof.Dr. Elif Sibel Aslan
<b>ECZ112 HISTORY OF PHARMACY</b>	The aim of the course is to provide an overview of the origin of the pharmacy in different cultures and civilizations, phases throughout history; philosophy, development and current status of the pharmacy.	1+0	2	This course aims to give information about the History of Pharmacy and Medicine and the Historical Development of Pharmaceutical Products.	Bachelor's Degree	Asist Prof.Dr. Merve Memişoğlu
<b>ECZ113 PHYSICS</b>	The aim of the course is to provide a general overview of the basic principles of physics, measurement and units, molecular biophysics, intermolecular interactions in living organisms visual and hearing biophysics, effects of electrical current on the tissues, electromagnetic waves, radiation, biological and molecular effects of radiation to students.	2+0	2	Biophysics basic concepts, importance of water, membrane structure, transmission, action potential, synaptic transmission, muscle contraction, basic physics laws of respiration and circulation, radiation concept, effects and the basis of imaging methods about information acquisition.	Bachelor's Degree	Asist Prof.Dr. İlçay YILDIRIM
<b>ECZ114 BIOCHEMISTRY I</b>	Students will gain knowledge about the biomolecules, acid-base and buffer systems, amino acids, structure characteristics of peptides and proteins, hemostasis, plasma proteins on clinical diagnosis, hemoglobin and	3+0	5	1. Introduction to Biochemistry, acid base and buffer solutions 2. Structure and functions of amino acids and proteins 3. Structure and functions of hemoglobin and myoglobin 4. Structure and	Bachelor's Degree	Asist Prof.Dr. Ferhat Hanikoğlu

	myoglobin, structure and classification of carbohydrates, lipids and functions of lipids and plasma lipoproteins.			functions of carbohydrates 5. Structure and functions of lipids 6. Structure and functions of nucleic acid 7. Enzymes I : Definitions of enzymes, mechanism of kinetics and inhibitions 8. Enzymes II : Mechanism of action and regulation of activities 9. Vitamins I (Water soluble vitamins) 10. Vitamins II (Lipid soluble vitamins) 11. Macro and trace elements 12. Blood cells and their functions 13. Mechanism of blood coagulation 14. Free oxygen radicals, antioxidant systems and apoptosis 15. Xenobiotic metabolism		
<b>ECZ115 GENERAL CHEMISTRY</b>	This course is designed to provide important principles and concepts of basic chemistry to pharmacy students. In this context, students will learn about the structure of atoms, chemical bonding, equilibrium, kinetics, solubility and acid-base concepts and improve their reasoning skills.	2+0	4	Introduction to General Chemistry Atoms, Molecules, and Ions Chemical Reactions and Reaction Stoichiometry Reactions in Aqueous Solution Periodic Properties of the Elements Chemical Bonding Molecular Geometry and Bonding Theories Gases Liquids and Intermolecular Forces Properties of Solutions Chemical Kinetics Chemical Equilibrium Acids and Bases I Acids and Bases II Chemical Thermodynamics	Bachelor's Degree	Asist Prof.Dr. Abdulilah ECE
<b>ECZ116 APPLIED MATHEMATICS IN PHARMACY</b>	Students taking this course will be expected to have acquired theoretical knowledge about the general concepts, pharmaceutical measurements and calculations used in the preparation of dosage forms.	2+0	4	Students taking this course will be expected to have acquired theoretical knowledge about the general concepts, pharmaceutical measurements and calculations used in the preparation of dosage forms.	Bachelor's Degree	Asist Prof.Dr. Berin Karaman 00A

	<p>Topics will include units of measurement; Significant digits and rounding numbers; calculation of analytical balances' sensitivity, percent error in measurements, and determination of moisture content in substances; alcohol dilutions, density and density-concentration / volume relationships; drug dosage calculations; expressing concentration of solutions; trituration and preparation of stock solutions.</p>					
<p><b>ECZ117</b> <b>INTRODUCTION TO PHARMACY</b></p>	<p>The aim of the course is to introduce the areas of pharmacy, pharmacy education, accreditation and quality notions and their contribution to pharmacy, modern drug, pharmaceutical dosage forms, drugs and toxicity of drugs to students.</p>	<p>1+0</p>	<p>2</p>	<p>Students gain knowledge about pharmacy education and pharmaceutical practices. Students gain informations about career options for pharmacists Students will gain basic knowledge on rational drug use.Students will gain basic terminology of pharmacy and pharmaceuticals.Students will gain basic knowledge on drug information sources.Students gain knowledge national pharmacist associations and chambers</p>	<p>Bachelor's Degree</p>	<p>Asist Prof.Dr. Merve Memişoğlu</p>
<p><b>GAN001</b> <b>GENERAL ANATOMY</b></p>	<p>The aim of this course is to teach students about the systems generating the human body and also the organs and functions generating the systems. This course aims to provide essential knowledge for pharmacy students about the systematic view of the structures and organs that make up the human body: locomotor system, cardiovascular system, respiratory</p>	<p>2+2</p>	<p>4</p>	<p>All graduates can knows structures and organs that make up the human body and knows the place of these organs. All graduates make the necessary evaluation and planning for pharmacy applications by using theoretical and applied concepts and principles in the field of pharmacy</p>	<p>Bachelor's Degree</p>	<p>Prof.Dr. Erdal ARISAN</p>

	system, digestive system, urogenital system, nervous system, endocrine system. Topographic representation of the human body is also included in this course.			All graduates contribute to the production of health policies that are appropriate for the changing and diverse needs of the society in the field of pharmacy.		
<b>BIL001 HEALTH INFORMATICS AND COMPUTER APPLICATIONS I</b>	The course aims to teach all kinds of applications related to computer sciences, and the importance and use of information technology in the field of medicine and health. Students will learn about clinical service and diagnosis and treatment in the laboratory and imaging also provide an important service in the structure of information technology, information transfer and proper use.	2+0	2	Clinical service and diagnosis and treatment in the laboratory and imaging also provide an important service in the structure of information technology, information transfer and proper use	Bachelor's Degree	Prof.Dr. M.Yusuf ÇELİK
<b>TDI101 TURKISH LANGUAGE I</b>	This course aims to provide the essential knowledge about the historical development of Turkish language, grammar structures and written and oral expression skills. This course aims to give the knowledge about the place of Turkish among the world languages, historical development of Turkish, reading and reading types, writing rules, punctuation, according to meaning and function of sentences, prepositions - conjunctions - exclamations, verb and verb structure, word types, word groups, sentence information, types of sentences, sentence analysis, written and oral expression to pharmacy students.	2+0	2	The place of Turkish among the world languages, Historical Development of Turkish, Reading and Reading Types, Writing rules, Punctuation, According to meaning and function of sentences , Prepositions - Conjunctions - Exclamations, Verb and Verb Structure, Word Types, Word Groups, Sentence information, Types of sentences, Sentence Analysis, Written And Oral Expression	Bachelor's Degree	Instructor Rümeyisa GÜMÜŞ MATTIUSI

<b>ATA101 HISTORY OF TURKISH REPUBLIC I</b>	The objectives of this course are, to get students informed about principles of Atatürk and the Revolutions and to enable them to establish a relation between today and the recent history. This course aims to provide students with essential knowledge about the reforms that were carried out in political area: abolition of sultanate, proclamation of republic, abolition of caliphate-transition to multi party life attempts in the period of Ataturk. Moreover, students will learn about reforms and constitutions which were established in order to compose modern and secular legal system, revolutions in education area, and the formation of national economy policies.	2+0	2	Reforms that carried out in political area: Abolition of sultanate, proclamation of republic, abolition of caliphate- Transition to multi party life attempts in the period of Ataturk. Reforms and constitutions which were realized in order to compose modern and secular legal system Revolutions that were realized in education area- Formation of a national economy policies. Language, history and culture as becoming a nation project Characteristics and universality of Turkish revolution and the thought system of Ataturk. Turkish Foreign Policy in the period of Ataturk Turkish domestic and foreign policy in the National Chief period.	Bachelor's Degree	Asist Prof.Dr. Elif Sibel ASLAN
<b>ING009 ENGLISH I</b>	The aim of this course is to enable students to follow the global literature, international conferences and congresses in their field of study by helping them improve their four linguistic skills.	6+8	10	Activities, learning materials and exercises to help students improve their reading, listening, writing and speaking skills.	Bachelor's Degree	Erkan Kolat
<b>BIL002 HEALTH INFORMATICS</b>	The course aims to teach students about all kinds of applications related to computer sciences, and the importance and use of information technology in the field of medicine and health. This course aims to	0+2	2	Clinical service and diagnosis and treatment in the laboratory and imaging also provide an important service in the structure of information technology,	Bachelor's Degree	Prof.Dr. M.Yusuf ÇELİK

<b>AND COMPUTER APPLICATIONS II</b>	provide subject related knowledge skills about the use of health informatics in clinical service and diagnosis and treatment. Students will also learn about medical imaging which provides an important service in the structure of information technology, information transfer and proper use.			information transfer and proper use.		
<b>GFZ001 GENERAL PHYSIOLOGY</b>	This course aims to provide with a thorough grounding in the general principles of the normal function of body cells, tissues, organs and systems in healthy individuals to pharmacy students. The course aims to give an overview of cell, tissue, organ and system physiology to students.	3+0	3	To give an overview of cell, tissue, organ and system physiology	Bachelor's Degree	Asist Prof.Dr. Mukad des Pala
<b>TDI102 TURKISH LANGUAGE II</b>	The aim of this course is to teach students about the structure of the language and to provide correct use of Turkish language, to give information about word types and to teach Turkish grammar rules.	2+0	2	Semantics, Meaning Types in Word, Meaning of Cümlede, Meaning of Cümlede, Paragraph Structure, Expression Forms, Invention Invention And Creation, Writing, Emotional Weighted Writing Types, Event Weighted, Articles And Review Articles, Thought (Idea) Articles, Oral Expression Types, Types of Interactive Lecture, Correct And Effective Writing	Bachelor's Degree	Instructor Rümeysa Gümüşmattıussı
<b>ATA102 HISTORY OF TURKISH REPUBLIC II</b>	The aim of this course is to teach students about the period when Treaty of Lausanne was signed and Turkish Republic was established. Political, social and legal reforms	2+0	2	This is an online course. It aims to inform the students about the attempts of the Turkish Republic to reach the level of the modern civilization.	Bachelor's Degree	Asist Prof.Dr. Elif S ibel Aslan

	will be explained with their reasons, informing the learners about experiments of multi-party system during the period of Atatürk and Atatürk's Turkish foreign policy. The course also aims to inform the students about the attempts of the Turkish Republic to reach the level of the modern civilization.					
<b>ING010 ENGLISH II</b>	The aim of this course is to enable students to follow the global literature, international conferences and congresses in their field of study by helping them improve their four linguistic skills.	6+8	10		Bachelor's Degree	
<b>ECZ221 PHARMACEUTICAL BOTANY I</b>	This course aims to present the importance of biodiversity in pharmacy and also gives information to students about the Flora of Turkey, richness of its biological diversity additionally basic plant metabolism, secondary metabolites used in pharmacy, medicinal plant cultivation, and the marketing and protection methods of them. The plants used for scientific purposes and traditionally in the treatment, ethnobotanical researches, research techniques, the importance of transition of traditional use to scientific use by giving examples from Turkey and World are also discussed. In addition to the plants	2+0	2	Learns the pharmacy properties of medicinal plants and drugs. Recognize wild plants with their native names and morphological characteristics. Makes the diagnosis of medicinal plants. He knows the importance of Turkey's terms of trade of medicinal plants. Understands the importance of introducing the plants used traditionally for medical purposes to the world of science in terms of the discovery of new pharmaceutical raw materials. Knows the importance of conservation of plant resources.	Bachelor's Degree	Prof.Dr. Abdülkerim Alpınar

	<p>here-above mentioned, poisonous and edible fungi important for Turkey are also examined with their inner and outer morphological features. Along with the medicinal drugs plants, their scientific and vernacular names, their classification including general rules of plant nomenclature and their habitats will be given. Topics including characteristics of plant cells and organs such as root, stem, leaf, flower, fruit, and seed are also within the context of the course.</p>					
<p><b>ECZ222</b> <b>PHARMACEUTICAL BOTANY II</b></p>	<p>The aim of this course is to introduce algae, fungi, spores and seeded plants which are used both in scientific and traditional medicine, with their inner and outer morphological characteristics systematically. It aims to provide information about ethnobotanical research in Turkey, research methods, the importance of the transition from the traditional use to scientific use with examples from Turkey and the world. The course also includes topics including Turkey's flora and its biodiversity, cultivation of medicinal plants, medicinal plants with the importance of trade and conservation issues.</p>	2+0	2	<p>Learns the pharmacy properties of medicinal plants and drugs. Recognize wild plants with their native names and morphological characteristics. Makes the diagnosis of medicinal plants. He knows the importance of Turkey's terms of trade of medicinal plants. Understands the importance of introducing the plants used traditionally for medical purposes to the world of science in terms of the discovery of new pharmaceutical raw materials. Knows the importance of conservation of plant resources.</p>	Bachelor's Degree	Prof.Dr. Abdülkerim Alpınar
<p><b>ECZ223</b> <b>PHARMACEUTICAL</b></p>	<p>Anatomical features of some herbal drugs used in medicine are examined with the use of light microscope and</p>	0+3	2	<p>Learns the pharmacy properties of medicinal plants and drugs by practicing.</p>	Bachelor's Degree	Prof.Dr. Abdülkerim Alpınar

<p><b>AL BOTANY LABORATORY I</b></p>	<p>in order to learn also the macromorphological characteristics of edible mushroom and medicinal plants necessary drawings will be made. Students will learn the herbarium technics practically.</p>			<p>Learns the internal and external morphological structures of medical drugs. Gains the ability to diagnose medicinal plants.</p>		
<p><b>ECZ224 PHARMACEUTIC AL BOTANY LABORATORY II</b></p>	<p>The knowledge on algae, fungi and vascular plants used in healing will be given by practical applications. Students will also do field studies in order to observe medicinal plants in their natural environment. In addition, students will develop practical skills to identify plants.</p>	<p>0+3</p>	<p>2</p>	<p>Learns the pharmacy properties of medicinal plants and drugs by practicing. Learns the internal and external morphological structures of medical drugs. Gains the ability to diagnose medicinal plants.</p>	<p>Bachelor's Degree</p>	<p>Prof.Dr. Abdülkerim Alpınar</p>
<p><b>ECZ225 BIOCHEMISTRY II</b></p>	<p>In this course, students will gain knowledge about the structure and functions of nucleotids and nucleic acids, general features of vitamins, fat soluble vitamins, water soluble vitamins, bioelements (calcium, phosphate, magnesium, sodium, potassium, chloride, iron, zinc, copper, manganese, chromium, selenium, cobalt, molybdenum, nickel, lithium and the others) and general features of enzymes.</p>	<p>2+0</p>	<p>4</p>	<p>Bioenergetics: Role of ATP / Oxidative Phosphorylation, Carbohydrate Digestion, Glycolysis and Pyruvate, Oxidation / Citric Acid Cycle, Glycogen Metabolism and Gluconeogenesis, Other Pathways of Pentose Phosphate Pathway and Hexosis Metabolism, Lipid Digestion and Lipoproteins, Biosynthesis / Cholesterol Synthesis of Fatty Acids, Oxidation of Fatty Acids and Ketogenesis, Metabolism of Proteins Digestion / Proteins and Amino Acid Nitrogen, Catabolism of Carbon Skeletons of Amino Acids, Conversion of Amino Acids to Specific Products, Nucleotide Metabolism, Heme</p>	<p>Bachelor's Degree</p>	<p>Prof.Dr. Uzay GÖRMÜŞ Assoc. Prof.Dr. Şölen HİMMETOĞLU</p>

				Synthesis and Destruction, Physiological Buffer, Structure, Properties and Mechanisms of Hormones		
<b>ECZ226 PHARMACEUTICAL MICROBIOLOGY/ IMMUNOLOGY</b>	<p>The aim of this course is to introduce the microorganisms (bacteria, virus, protozoon, viroid, prion, algae, fungus etc.), to give basic information about the important features of microbial life and to explain the roles of microorganisms in all areas of our life (positive and negative) to students.</p> <p>It is also aimed to provide students a knowledge and understanding of classification and history of microbiology, importance of microorganisms in living organisms, sterilization methods, disinfection and antisepsis, introduction to virology, the importance of some viruses in human health, introduction to micology, fungus proliferation and fungus infections, riketsia, clamidia and micoplasmosis, antimicrobial drugs, resistant mechanism of antibiotics, infection diseases, function and basic structure of immune system. The course aims to provide foundational subject related knowledge skills to enable students effectively discharge their professional roles.</p>	3+0	4	<p>Understands the basic properties and importance of microorganisms.Has knowledge about cell structure and functions of microorganisms. Students know concepts of microbial reproduction and metabolism. Sterilization, disinfection methods and effects of physical and chemical agents on microorganisms, disinfection, sterilization, antisepsis.Has knowledge about the sources of contamination of microorganisms.Has knowledge about immunity and the genetic structure of bacteria.Know the concepts of basic microbiology skills such as aseptic technique, culture and preparation and appropriate sterilization techniques.</p>	Bachelor's Degree	Asist Prof.Dr. Derya DOĞANAY
<b>ECZ227 BIOCHEMISTRY LABORATORY II</b>	In this course students will gain knowledge about general reactions of aminoacids, proteins, carbohydrates	0+2	3	Examination of properties related to proteins, carbohydrates, lipids, nucleic acids and vitamins.	Bachelor's Degree	Instructor Enver Çıracı

	and lipids, spectroscopic analysis methods and spectrophotometry. Moreover, students will develop both experimental and practical skills related to determination of triglyceride in serum, total cholesterol determination, enzymatic analyses (AST, ALT, ALP, GGT) in serum, glomerular function tests (serum creatinine and urea determination) and full urine analysis.					
<b>ECZ228 PHARMACEUTICAL MICROBIOLOGY/ IMMUNOLOGY LABORATORY</b>	The course is a general introduction of laboratory tools and equipment, laboratory rules, the use of the microscope, sterilization and disinfection, microbial nutrition and media preparation, steril, microbial acculturation, methods of staining of microorganisms, the application of the biochemical properties of microorganisms. The course aims to cover application of techniques of analysis, quality control, and microorganism / disease diagnosis in microbiology laboratory, microorganism counting methodsantibiogram with hands on practice	0+3	2	Introduction of laboratory tools and equipment, microscope usage, microbial nutrition and preparation of food, sterilization and disinfection, microbial culture, microorganism staining methods, determination of biochemical properties of microorganisms	Bachelor's Degree	Asist Prof.Dr. Derya DOĞANAY
<b>ECZ229 ORGANIC CHEMISTRY</b>	The main objective of this course is to teach students about basic concepts of organic chemistry, structural properties of organic compounds, their synthesis and fundamental reactions. The	4+0	6	Introduction to Functional Groups and Intermolecular Forces An Introduction to Organic Reactions and Their Mechanisms Alkanes and Cycloalkanes Stereochemistry Ionic Reactions: Nucleophilic	Bachelor's Degree	Asist Prof.Dr. Abdulilah ECE

	<p>information about nomenclature of organic compounds and functional groups are given to the students and through teaching basic reactions, it is aimed that the students will have an idea about how to synthesize organic compounds. It also provides information regarding intermolecular interactions that play important role in the interaction of active pharmaceutical ingredient with the target receptor.</p>			<p>Substitution and Elimination Reactions of Alkyl Halides Alkenes and Alkynes I: Properties and Synthesis Alkenes and Alkynes II: Reactions Alcohols and Ethers: Synthesis and Reactions Alcohols from Carbonyl Compounds: Oxidation–Reduction Aromatic Compounds Reactions of Aromatic Compounds Aldehydes and Ketones Reactions of Aldehydes and Ketones Carboxylic Acids and Their Derivatives Amines, Phenols</p>		
<p><b>ECZ230 ANALYTICAL CHEMISTRY</b></p>	<p>Students will gain knowledge about the qualitative and quantitative analysis, solutions and concentration: concepts, about the concentration, percentage solutions, molarity, normality, acids and bases, calculation of pH in solutions, buffer solutions, titrimetry, neutralization titrations, redox reactions and titrations, solubility, complexometry and gravimetry, dehydrated media titrations, electroanalytical methods, spectroscopic methods, significant figures, rounding off, accuracy, precision, standard deviation and % RSD to students.</p>	4+0	5	<p>Qualitative and Quantitative Analysis, Solutions and Concentration, Acids and Bases, Calculation of pH in Solutions, Buffer Solutions, Titrimetry, Neutralization Titrations, Redox Reactions and Titrations, Solubility, Complexometry and Gravimetry, Spectroscopic Methods, Evaluation of Analysis Results</p>	Bachelor's Degree	<p>Prof.Dr. İzzet TOR, Asist Prof.Dr. Nilay BEĞİÇ</p>
<p><b>ECZ231 LEGISLATIONS AND PROFESSIONAL</b></p>	<p>Topics including the legal arrangements related to pharmacy, regulations in force in our country, drug licensing regulation, drugs within the scope red prescription, knowledges related to social security</p>	2+0	3	<p>Pharmaceutical Law and Ethic</p>	Bachelor's Degree	<p>Asist Prof.Dr. Merve Memişoğlu</p>

<b>ETHICS IN PHARMACY</b>	institution, Turkish Pharmacists' Association Law and Turkish Pharmacists' Association Law's regulations, patient rights, professional ethics are discussed					
<b>ECZ232 ANALYTICAL CHEMISTRY LABORATORY</b>	Analytical Chemistry Laboratory course teaches about the analyses based on separation, qualitative and quantitative determination in a sample. Within this scope, students will carry out eight practical activities throughout the course related to analysis of cation and anion, preparation and standardization of solution, quantitative determinations based on neutralization titrations, redox titrations, complexometric titrations and UV spectrophotometer..	0+3	4	Students gain knowledge about how it should work in laboratory, by taking which precautions and they gain competence to use basic tools and materials in laboratory. Students gain competence to prepare solutions and calculate. Students gain knowledge about the qualitative and quantitative determination methods and gain application experiences of these methods.	Bachelor's Degree	Asist Prof.Dr. Nilay Beğiç
<b>ECZ233 PROFESSIONAL ENGLISH I</b>	The aim of this course is to improve the pharmacy students' foreign language (English) skills necessary for communicating with colleagues and other healthcare professionals both in the academic or medical field and improve capacity of knowledge to follow the literature and/or supplementary resources of courses, which belong to their semester.	2+0	2	Medical english vocabulary book and specific reading passages	Bachelor's Degree	Instructor Mert ŞAHİNBAŞ
<b>ECZ234 PUBLIC HEALTH IN PHARMACY</b>	This course aims to provide knowledge about the environmental health which is one basic subject of	2+0	2	Discuss the basic concepts of public health. define epidemiology and demography concepts	Bachelor's Degree	Asist Prof.Dr. Ayşe YILDIZ

	the public health, common diseases in our country and the world, epidemiology of these diseases, infectious diseases and protection methods, personal hygiene, diseases caused by the food and health management.			Describe the concept of priority / important health problem for the society. Defines the concept of reproductive health. Explains Family Planning methods. Programs for the improvement of child and youth health Define programs to improve elderly health		
<b>ECZ236 PROFESSIONAL ENGLISH II</b>	The aim of this course is to improve the pharmacy students' foreign language (English) skills necessary for communicating with colleagues and other healthcare professionals both in the academic or medical field and improve capacity of knowledge to follow the literature and/or supplementary resources of courses, which belong to their semester.	1+0	1	At the end of the course, the students will be able to comprehend what they listen to, read and express themselves. the students will be able to develop communication skills in the field of vocational english The students will be able to communicate with their colleagues and patients	Bachelor's Degree	Instructor MERT ŞAHİNBAŞ
<b>ECZ238 PHARMACY INTERNSHIP I</b>	The aim of this internship is to gain primary knowledge, skills and experience in the field of pharmacy applications.	0+6	2	Development of practical professional skills, Practical learning of pharmacy management, Learning of drug reimbursement systems.	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim
<b>IST001 BIOSTATISTICS</b>	The aim of this course is to enable pharmacy students to improve their ability to make scientific interpretations of scientific research management, interpretation of analysis results, to make sense of the technology and methods in scientific articles, and to make scientific interpretation.	2+0	2	Discussion into classroom, asking and response questions Study on practical samples, the presentations of the students Explaining by samples, asking and response questions Presentation samples from medical literatures, asking and response questions	Bachelor's Degree	Prof.Dr. M.Yusuf ÇELİK

<p align="center"><b>ECZ331 PHARMACOGNOS Y I</b></p>	<p>The aim of the course is to give information regarding natural products. Topics including medicinal plant breeding, collection, drying, stabilization, primer and seconder metabolites of medicinal plants are disclosed. Carbohydrates, lipids, amino acids, peptides, enzymes and proteins, phenolic compounds and terpenic compounds found in medicinal plants, their classification, isolation, natural sources of these compounds, their efficacy and use are deccribed during the course.</p>	<p align="center">3+0</p>	<p align="center">3</p>	<p>Students learn about extraction, purification and identification of pharmaceutical raw materials of natural origin.Students learn how to perform quality control of natural products and control whether if they comply with the standarts. Students have infomation about the structure of biological active natural compounds.Student gain the information about the use of herbal drugs and biological active compounds and can give consultancy about their use.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Asist Prof.Dr. G. Vildan Seyhan</p>
<p align="center"><b>ECZ332 PHARMACOGNOS Y II</b></p>	<p>The aim of the course is to give information regarding isolation, identification of essential oils, resins, balsams and their chemical structures, natural sources of these compounds, their activity and use. On the other hand essential knowledge of alkaloids, their physical and chemical structures, identification and isolation are given. Alkaloids are classified according to their biosynthesis and natural sources of alkaloids, their activity and use are described.</p>	<p align="center">3+0</p>	<p align="center">3</p>	<p>Students learn how to extract, isolate chemical compounds from natural sources and determine their activity .Students learn quality control methods of the natural sources. Students learn whether if the raw material complies with the standards.Students obtain detailed information about natural, herbal drugs and active ingredients obtained from natural, herbal drugs.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Asist Prof.Dr. G. Vildan Seyhan</p>
<p align="center"><b>ECZ333 PHARMACOGNOS Y LABORATORY I</b></p>	<p>The aim of the course is to give information regarding isolation, identification, assay, quality control methods for chemical compounds of natural drugs. Polysaccharide, carbohydrate, tannin, anthraquinone, cardiac glycosides identification,</p>	<p align="center">0+3</p>	<p align="center">2</p>	<p>Students learn the subjects of extraction, isolation, purification, identification of natural compounds.Students learn whether if the herbal drugs comply with the standarts, how to perform quality control.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Asist Prof.Dr. G. Vildan Seyhan</p>

	fixed oil and saponin assay, Liebermann Reaction, acidity indice of fixed oils are performed.					
<b>ECZ334 PHARMACOGNOSY LABORATORY II</b>	Essential oil isolation, assay, quality control and thymol identification are performed during the course. On the other hand, extraction, identification, titrimetric assay of alkaloids, caffeine isolation and identification, Vitali Morin Reaction, control of Fructus Papaveris alkaloids are also performed.	0+3	2	Students learn how to extract, isolate chemical compounds from natural sources and determine their activity .Students learn quality control methods of the natural sources. Students learn whether if the raw material complies with the standards.Students obtain detailed information about identification methods for natural, herbal drugs.	Bachelor's Degree	Asist Prof.Dr. G. Vildan Seyhan
<b>ECZ335 PHARMACEUTICAL AND MEDICINAL CHEMISTRY I</b>	The aim of the course is to provide knowledge to students with a thorough grounding in drug design and discovery methods, structure activity relationships, pharmacokinetic properties including ADME, metabolism and structure relationship, receptor and enzyme drug interactions, drug metabolism, farmakogenomic, genomic, proteomic, metabolimic, transcriptomic concepts, biotechnological drugs and to deepen students' understanding of how novel, pharmacologically active molecules are designed to treat human diseases and give information about adrenergic and seratonergic drugs, cardiovascular drugs, chemotherapeutics, antiviral and anticancer drugs	4+0	4	Students gain knowledge about the concept of pharmaceutical and medicinal chemistry, drug design and development methods and take the initiative for research projects. Students gain informations about the pharmacogenetic, pharmacodynamic, pharmacokinetic, toxic properties and metabolism of compounds and also understand the role of these concepts on drug design as well as the behaviours of drugs in the body and their impacts on the treatment and transform informations to the patients. Students will gain basic knowledge on the drugs which are used in infections diseases, cancer, adrenergic and seratogenic receptors, cardio-vascular drugs	Bachelor's Degree	Prof.Dr. Süreyya Ölgen

				and drugs affecting adrenergic neurotransmission and transform information to the patients		
<b>ECZ336 PHARMACEUTICAL AND MEDICINAL CHEMISTRY II</b>	The aim of this course is to provide knowledge about the drugs of central nervous system, steroidal analgesics, non-steroidal analgesics, anesthetics, antihistaminics, hormones, steroidal therapeutics and contraceptives, antidiabetic and tyroid drugs, gastrointestinal system drugs and vitamins, structure-activity relationships, structure-pharmacokinetics properties, and to give an ability of interpreting results.	4+0	4	The students will be able; Recognize of therapeutic effects of central nervous and gastrointestinal system drugs, hormones and related drugs, steroidal and non-steroidal analgesic drugs, vitamins, and the pharmacogenetic and pharmacokinetic effects of these drugs and their structure-activity relationships and give information to the patients.	Bachelor's Degree	Prof.Dr. Süreyya Ölgün
<b>ECZ337 PHARMACEUTICAL AND MEDICINAL CHEMISTRY LABORATORY I</b>	The aim of this course is to provide knowledge and practical skills to students about the basic applications of computer aided drug design such as two dimesonal and three dimesional molecular drawing and calculations of various molecular properties, separation and purification methods such as distillation, extractions, crystallization, chromatographic purification, qualitative analysis methods such as functional group analysis, instrumental analysis methods such as elemental analysis, UV-Visible Spectroscopy, Infrared spectroscopy (IR), Nuclear Magnetic Resonance (NMR) Spectroscopy, and Mass Spectroscopy.	0+3	2	Theoretical information will be given about computer aided 2D and 3D molecular drawing and calculations of various molecular properties, General information about separation and purification methods (distillation, extractions, crystallization, chromatographic purification), functional group analysis and UV spectroscopy will be given and practical work will be carried out for each method. General information about elemental analysis, IR, NMR and mass instrumental analysis will be given. Structural elucidation of synthetic, semi synthetic compounds and drugs will be carried out by analysis of IR, Mass, and NMR spectra.	Bachelor's Degree	Asist Prof.Dr. Berin Karaman

<p style="text-align: center;"><b>ECZ338 PHARMACEUTICAL AND MEDICINAL CHEMISTRY LABORATORY II</b></p>	<p>The aim of this course is to provide knowledge and practical skills to students about the identification tests and quantitative analysis present in the pharmacopoeia, how to interpret the results of pharmaceutical analysis results of medicines and compare them with the international standards, preparation of standard and sample solutions, preparation of reagents, synthesis of medicines and purification methods, structure analysis and calculation of effective substance quantity and yield.</p>	<p style="text-align: center;">0+3</p>	<p style="text-align: center;">2</p>	<p>Students taking the course will be expected to have acquired both practical and theoretical knowledge about the identification tests and quantitative analysis present in the pharmacopoeia. Students will learn how to interpret the results of pharmaceutical analysis results of medicines and compare them with the international standards. Students will be expected to have acquired both practical and theoretical knowledge of the preparation of standard and sample solutions, preparation of reagents and synthesis of medicines, methods of purification, structure analysis and calculation of effective substance quantity and yield.</p>	<p style="text-align: center;">Bachelor's Degree</p>	<p style="text-align: center;">Asist Prof.Dr. Berin Karaman</p>
<p style="text-align: center;"><b>ECZ339 PHARMACOLOGY I</b></p>	<p>The aim of this course is to provide information and knowledge to students about basic concepts of pharmacology, pharmaceutical dosage forms, drug administration routes, pharmacokinetics and pharmacodynamics, neurochemical features of autonomic nervous system, adrenergic and cholinergic system drugs, basic mechanisms that regulate cardiovascular system, basic principles of chemotherapy, various antibacterial, antiviral, antifungal, antiparasitic and cancer drugs, and different chemotherapy mechanisms.</p>	<p style="text-align: center;">4+0</p>	<p style="text-align: center;">4</p>	<p>Give information about basic concepts of pharmacology, pharmaceutical dosage forms, drug administration routes, pharmacokinetics and pharmacodynamics, neurochemical features of autonomic nervous system, adrenergic and cholinergic system drugs, basic mechanisms that regulate cardiovascular system, basic principles of chemotherapy, various antibacterial, antiviral, antifungal, anti-parasitic and cancer drugs, and different chemotherapy mechanisms.</p>	<p style="text-align: center;">Bachelor's Degree</p>	

<p align="center"><b>ECZ340 PHARMACOLOGY II</b></p>	<p>The aim of this course is to provide students with information about drugs that act on central nervous system, gastrointestinal system, and respiratory system, and drugs that are used in the disorders of these systems, local and general anesthetics, steroidal and non-steroidal analgesics, antidiabetics, antihistamines, steroids, hormones and contraceptives.</p>	<p align="center">4+0</p>	<p align="center">4</p>		<p align="center">Bachelor's Degree</p>	
<p align="center"><b>ECZ341 PHARMACEUTICAL TECHNOLOGY I</b></p>	<p>It is aimed to give necessary information and to enhance students' knowledge about the water as a basic pharmaceutical vehicle to prepare drug solutions. Dissolution rate and dissolution, principles of formulations of pharmaceuticals, basic principles for preparing formulations and quality controls of suspensions, emulsions, formulations and controls of semisolid pharmaceutical forms, ointments and gels will be given to students.</p>	<p align="center">3+0</p>	<p align="center">3</p>	<p>Description of Pharmaceutical Technology, history, Pharmacopeias, Pharmacy related publications, Water for Pharmaceutical use, Solutions, aromatic water, lemonades, potion and syrups, Techniques for preparing solutions Theory of dissolution, Determination techniques of dissolution and dissolution rate, Mixing, grinding and drying, Reology, Separation, filterinmg, Diffusion, osmosis and phases, Colloids, nano systems, adsorption, Emulsions, suspensions, aeresols, Semisolids, Ointments, transdermal patches, Structure of human skin and percutaneous absorption, Suppositories</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Prof.Dr. Zelihag�ul Deęim, Prof.Dr. İsmail Tuncer Deęim</p>
<p align="center"><b>ECZ342 PHARMACEUTICAL TECHNOLOGY II</b></p>	<p>It is aimed to provide important information to students and to give necessary knowledge about fundamental principles of formulations, manufacturing and</p>	<p align="center">3+0</p>	<p align="center">3</p>	<p>To give fundamental principles used to formulate, manufacture and control of sterile products, parenterals, isotonic solutions, eye</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Prof.Dr. İsmail Tuncer Deęim,Prof.Dr. Zelihag�ul Deęim</p>

	controls of sterile products, parenterals, isotonic solutions, designing sterile areas, aseptic areas, laminar flow cabinets, sterilization techniques, knowledge about powders and determination of powder characteristics, formulation of solid dosage forms, production methods and quality controls, sustained release tablets and new therapeutic dosage forms, products used for veterinary and agricultural use, incompatibility, product stability and related regulations.			products, to explain basic concepts and knowledge about sterile area, aseptic area, laminar flow, sterilization techniques, to teach student about powders and determination of powder characteristics, to give formulation details of solid dosage forms ,production methods and controls, to teach about sustained release tablets and new therapeutic dosage forms ,products used for veterinary and agriculture, to explain incompatibility ,product stability and regulation, to give information about packaging materials and their usage		
<b>ECZ343 PHARMACEUTICAL TECHNOLOGY LABORATORY I</b>	Laboratory practice will provide some useful experiences about the control of water, dissolution and solubility concepts, preparation of pharmaceutical solutions, the preparation and controls of suspensions, emulsions, preparations and controls of semisolid pharmaceutical forms, ointments and gels.	0+3	2	Implements skills in all areas of occupations obtained from pharmaceutical basic and professional sciences within the scope and framework of rules of ethics, religion, language, race, gender and socio-economic discrimination in collaboration with the relevant professional administrators and regulatory authorities. Balance and measuring weight of the drops, Peppermint water, cinnamon water, Lime water, Limonade magnesii citrici, Determination of free chlor in the solution, Sodium Hypochlorite Solution, Dilute, Simple syrup,	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim, Prof.Dr. Zelihagül Değim, Research Assist. Gamze Çamlık

				Collutoire au Bleu de Methylene, Boric acid solution, Diluted hydrogen peroxide solution, Aqueous iodine solution, iodine tincture, povidon iodine solution, Resorsinol salicylic acid solution, saponated cresol solution, expectorant syrup		
<b>ECZ344 PHARMACEUTICAL TECHNOLOGY LABORATORY II</b>	Laboratory practice will provide an experience about fundamental principles of manufacturing and controls of sterile and nonsterile products. Preparing isotonic solutions, practice about powders and particle size and distribution determinations, preparations of solid dosage forms and their controls, practice on tablets, formulations, capsule filling, tablet coating, stability tests and related concepts, control of packaging materials and their usage will be given in this course.	0+3	2	Students will gain practice about sterile products; sterilization techniques, isotoni, isohidri calculations. Students will gain practice about powders, particle size determination. Students will gain practice on preparation of granules, capsule filling, tableting and coating processes. Students will gain practice stability testing, reaction kinetics and calculations 5 Students will gain practice about packaging materials and controls	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim, Prof.Dr. Zelihagül Değim
<b>ECZ345 BIOCHEMISTRY III</b>	The aim of this course is to provide knowledge about effects of drugs on the diagnostic tests, interpretation of biochemistry laboratory test results, patient centered thinking skill, biochemical basis of diseases and abnormal results.	2+0	3	Being able to have knowledge on mechanisms of drug and biological test interferences. Being able to have the knowledge to interpret the parameters and cases related to endocrine system pathologies. Being able to have the knowledge to interpret haematological parameters	Bachelor's Degree	Prof.Dr. Uzey GÖRMÜŞ, Assoc. Prof.Dr. Şölen HİMMETOĞLU

<p align="center"><b>ECZ346 BIOPHARMACEUTICS AND PHARMACOKINETICS</b></p>	<p>The aim of this course is to provide useful information and knowledge about mechanisms of absorption, bioavailability and bioequivalence studies. Students will learn about the physiological and pharmaceutical factors effective on the bioavailability and bioequivalence, calculations of bioavailability and bioequivalence parameters and students will be able to evaluate the results. Absorption rates, processes and the kinetics, mathematical expressions of phases of drugs in the body will be explained. Calculations of elimination, clearance and dose of drugs will be shown to students.</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>Understanding of the fundamentals and basic concepts of pharmacokinetics and biopharmaceutics, investigation of absorption, distribution, metabolism. Learning of the design and evaluation of BA/BE in drug development, evaluation of in vitro dissolution profiles Understanding of the fundamentals and basic concepts of dissolution and its kinetic, comparison of dissolution profiles</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Prof.Dr. İsmail Tuncer DEĞİM, Prof.Dr. Zelihagül Değim</p>
<p align="center"><b>ECZ347 PROFESSIONAL ENGLISH III</b></p>	<p>The aim of this course is to improve the pharmacy students' foreign language (English) skills necessary for communicating with colleagues and other healthcare professionals both in the academic or medical field and improve capacity of knowledge to follow the literature and/or supplementary resources of courses, which belong to their semester.</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>At the end of the course, the students will be able to comprehend what they read , listen to and express themselves , they will take part in the communication process effectively.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Instructor MERT ŞAHİNBAŞ</p>
<p align="center"><b>ECZ348 PROFESSIONAL ENGLISH IV</b></p>	<p>The aim of this course is to improve the pharmacy students' foreign language (English) skills necessary for communicating with colleagues and other healthcare professionals</p>	<p align="center">1+0</p>	<p align="center">1</p>	<p>The students will be able to comprehend what they read, listen to and express themselves. the students will be able to develop</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Instructor MERT ŞAHİNBAŞ</p>

	both in the academic or medical field and improve capacity of knowledge to follow the literature and/or supplementary resources of courses, which belong to their semester.			communication skills in the field of vocational english The students will be able to communicate with their colleagues and patients in the target language		
<b>ECZ350 PHARMACY INTERNSHIP II</b>	This internship aims to provide pharmacy students with the essential knowledge about drug supply, aspects about the layout and organization, keeping records in the pharmacy and to improve pharmacy students' communication skills with patients.	0+6	2		Bachelor's Degree	
<b>ECZ441 PHARMACOTHER APHY I</b>	The aim of the course is to improve students' ability to assess pharmaceutical therapy approaches and problems regarding the pharmaceutical therapy in the cardiovascular, respiratory, gastrointestinal, renal and endocrine system diseases through clinical cases (scenarios).	3+0	3	Students will be able to select drugs to be used in diseases according to disease conditions .Has knowledge about symptoms, diagnosis and treatment of diseases .Know the uses of drugs and polypharmaside according to the disease Students will evaluate and interpret the drug or drug combination that can be used according to the conditions of the patients and the diseases.They will be able to evaluate the disease Related tests and correlate them with medicines written by doctors and evaluate the therapy and therapeutics. The students will be able to advise on the appropriate treatment regimen to the patients and will be able	Bachelor's Degree	

				e to follow the appropriate treatment of the patient.		
<b>ECZ442 PHARMACOTHERAPY II</b>	The aim of the course is to improve students' ability to assess pharmaceutical therapy approaches and problems regarding the pharmaceutical therapy in the neurologic, oncologic, psychiatric and hematologic disorders through clinical cases (scenarios).	3+0	3		Bachelor's Degree	
<b>ECZ443 PHARMACEUTICAL CARE</b>	The aim of this course is to inform students regarding basic principles of pharmaceutical care and drug usage strategies in high-risk individuals; to improve their knowledge and application experiences regarding the consultancy role of pharmacists in cardiovascular, respiratory, gastrointestinal, renal, endocrine system disorders and infectious disease.	2+2	4		Bachelor's Degree	
<b>ECZ444 PHARMACEUTICAL BIOTECHNOLOGY</b>	This course aims to provide essential knowledge about the processes, such as transferring genetic information from one organism to another, for the production of pharmaceuticals. Students will get useful information about molecular approaches in pharmaceutical biotechnology, the application of recombinant RNA technology to pharmaceutical area, analytical methods used in biotechnology and to relate the role of pharmacist in the development,	2+0	2	The student learns biotechnology applications in pharmacy. National / international developments in the field of biotechnology will be given and knowledge will be enhanced by following printed publications, technological tools and databases. Students will receive information about the ability of cognitive analysis, knowledge and statistical methods and they can evaluate a scientific article about its field.	Bachelor's Degree	Prof.Dr. Zelihagül Değim

	quality control and distribution of biotech products.					
<b>ECZ445 COSMETOLOGY</b>	The course aims to help students to get comprehensive information about cosmetology, cosmetics and derma-cosmetics. Students will understand the basic terms and processes required for the preparations of cosmetic formulations and their administration ways. Students will be able to recognize some of the active ingredients used in cosmetic preparations and they will be able to improve their skills to prepare cosmetic formulations. Students will get detailed information about the skin and cutaneous applications of cosmetics, finished product specifications, stability tests, quality control tests of cosmetics, and regulatory issues.	2+0	3	Information on preformulation, formulation, laboratory, pilot and industrial scale production, quality assurance, stability, storage, bioavailability, bioequivalence, licensing and patent studies of pharmaceutical products containing natural or synthetic active substances, biotechnological, nanotechnological, cosmetic, dermocosmetic and radiopharmaceutical products and there is application skill	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim, Prof.Dr. Zelihagül Değim
<b>ECZ446 PHARMACEUTICAL TECHNOLOGY III</b>	This course aims to provide essential knowledge about the pharmaceutical product, quality control, good laboratory practices, good manufacturing practices, marketing authorization and/or licencing, national and/or international regulations regarding the pharmacy and pharmaceutical productions or practices to students.	2+0	2	GMP, GMP applications, GLP applications, Validation and quality assurance, Applications of health authorities, ICH concepts and guidelines, Drug licensing stages, Patent and drug concepts, Scale up in drug industry, Quality design	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim
<b>ECZ447 COSMETOLOGY LABORATORY</b>	The objectives of this course are, to teach students about preparation of basic cosmetic formulations	0+3	2	The knowledge and skills gained by completing the Pharmacy undergraduate program can be	Bachelor's Degree	Prof.Dr. İsmail Tuncer

	(antiperspirants, hair products, conditioners, lipstick, perfume, cologne, cream, lotion etc) in the lab-scale. They will get knowledge about how to perform quality control tests; how to perform scientific research for cosmetic products and how to develop cosmetic formulations.			applied in all areas of the pharmacy profession within the framework of relevant laws, regulations, legislation, professional core values and ethical rules. Students can use the concepts and applications of basic science, medicine and health sciences in the field of pharmacy by combining them with applications related to the pharmacy profession.		Değim, Prof. Dr. Zelihağül Değim
<b>ECZ448 PHARMACEUTICAL ANALYSIS LABORATORY</b>	The aim of this course is to provide knowledge to students about pharmaceutical analysis and the scientific principles underlying quality control (QC) and Quality Assurance (QA) for a career in the pharmaceutical industry, health service, research institutes or regulatory authorities. Students will gain theoretical knowledge and application experience of modern spectroscopic, instrumental methods such as; UV/Vis, HPLC, analytic method validation and project development process.	0+3	2	Instrumental analysis techniques and pharmaceutical analysis practice	Bachelor's Degree	Asist. Prof. Dr. NİLAY BEĞİÇ
<b>ECZ449 PHARMACY MANAGEMENT AND ACCOUNTING</b>	This course aims to provide Pharmacy students essential knowledge about the current regulations, planning, manufacturing, financing, auditing and personnel management principles and quality aspects, keeping accounting records,	2+0	2	This course aims to give information about general principles of business management and accounting and to teach effective pharmacy management in detail.	Bachelor's Degree	Asist. Prof. Dr. Merve Memişoğlu

	preparing audit reports, in the business organizations.					
<b>ECZ450 PHARMACEUTICAL TOXICOLOGY</b>	This course aims to provide an information to students about the general principles in toxicology and xenobiotic, toxico-dynamics, toxicokinetics, mechanism of toxic effect, chemical carcinogenicity, teratogenicity, systemic toxicology, toxicological investigation and risk analysis, the principles of first aid and the antidote therapy in the acute intoxication, disaster toxicology, toxicology principals in forensic cases and toxic effects of the drugs, alcohol, aldehydes, opioids and hallucinogens.	2+0	2	In this course, students gain, extraction and analysis of acidic and basic drugs using analytical techniques; determination of volatile substances, metallic poisons, and food additives; DNA isolation; and in vitro cytotoxicity test will be done.	Bachelor's Degree	Asist Prof.Dr. Zekiye Kübra Yılmaz
<b>ECZ451 MEDICAL FIRST AID</b>	This course aims to provide students a general understanding of basic concepts of first aid and modern practices of cardiopulmonary resuscitation; knowledge about first aid in special circumstances such as allergy and anaphylaxis, acute poisoning; and to provide students training on mannequins to consolidate theoretical knowledge.	2+0	2	This course; basic life support, airway obstruction, first aid in bleeding and injuries, first aid in heat-induced hazards, first aid in unconsciousness disorders, first aid in fracture-dislocation-sprains, first aid in poisonings, first aid in drowning, patient care techniques .	Bachelor's Degree	Asist Prof.Dr. Nilgün Avcı
<b>ECZ452 PHARMACEUTIC</b>	The aim of the course is to give information regarding spectrophotometric methods in the	0+3	2		Bachelor's Degree	

<b>AL TOXICOLOGY LABORATORY</b>	<p>qualitative analysis of volatile toxins in the biological materials and the interpretation of the results; toxicological assays with instrumental analysis methods, identification of the organophosphate pesticides by TLC and to help students gain practical skills in determining the metabolism pathways of drug and environmental toxicants.</p>					
<b>ECZ453 CLINICAL PHARMACY APPLICATIONS I</b>	<p>This course aims to provide an essential knowledge about the role and the responsibilities of clinical pharmacist within the healthcare team and to gain clinical experience through patient follow-up and monitorization of the therapy in hospital and improve the skills of clinical settings.</p>	<p>0+8</p>	<p>6</p>	<p>This course helps pharmacist's students to gain necessary experience and vision before being taken into the professional life.</p>	<p>Bachelor's Degree</p>	<p>Instructor Zekiye Kübra Yılmaz</p>
<b>ECZ454 CLINICAL PHARMACY APPLICATIONS II</b>	<p>This course aims to provide an essential knowledge about the activities involved in drug consultancy from patient notification, medical history taking, medical records keeping, to informing patients about drug interactions and adverse effects. This course improves clinical skills of students in different clinics such as internal medicine, endocrinology, and algology.</p>	<p>0+8</p>	<p>6</p>	<p>Students gain knowledge about the most common questions in hospital pharmacies. Students gain ability to prepare evaluation reports for the cases observed in different hospital services. Students gain ability to prepare and report a case report of a patient who has been observed and monitored in hospital services. Students will acquire the role of pharmacist in hospital services.</p>	<p>Bachelor's Degree</p>	<p>Asist Prof.Dr. Zekiye Kübra Yılmaz</p>

<p align="center"><b>ECZ455 PHYTOTHERAPY</b></p>	<p>The aim of this course is to inform the pharmacy students about the phytotherapy by combining the basic information that they take in the theoretical and applied pharmaceutical botanical and pharmacognosy courses related to the plants used for medical purposes with the information they take in the courses such as biochemistry, pharmacology and pharmacotherapy. Within the context of this course, the pharmacy students will get essential knowledge to be able to provide consulting service, topics such as plant growing, its trade and protection also exist.</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>This course aims to inform the pharmacy student about the level of herbal treatment. It covers the cultivation, trade, protection of the medical plants.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Prof.Dr. Abdülkerim Alpınar</p>
<p align="center"><b>ECZ456 PHARMACY INTERNSHIP III</b></p>	<p>The objective of this internship is to help students to gain moderate-advance knowledge, skills and experience about pharmacy practices.</p>	<p align="center">0+6</p>	<p align="center">2</p>	<p>Development of practical professional skills, Practical learning of pharmacy management, Learning of drug reimbursement systems.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Prof.Dr. Zelihagül Değim,Prof.Dr. Abdülkerim Alpınar,Research Assist.Dr. Göksun Demirel</p>
<p align="center"><b>ECZ457 RATIONAL DRUG USE</b></p>	<p>Objectives of this course are, to educate pharmacist candidates about rational drug use, drug preferences and polypharmaceutical usage of drugs in specific disease groups, and to educate them about pharmacovigilance notices. In this course, the students will learn the specific details about the use of medicines for different disease groups and the side and adverse effects that can be seen in different</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>In this course, the students would learn the specific details about the use of medicines for different disease groups and the side and adverse effects that can be seen in different disease states, the use of medicines and the rules to be followed, and how these notifications will be done in the context of pharmacovigilance.</p>	<p align="center">Bachelor's Degree</p>	

	disease states, the use of medicines and the rules to be followed, and how these notifications will be done in the context of pharmacovigilance.					
<b>ECZ458 PATIENT ASSESSMENT METHODS AND PATIENT SAFETY</b>	The course aims to teach the applications in the field of healthcare to improve the quality and patient safety. The students will also gain the experience about the analysis of practice error in healthcare setting and ability to take a quality initiative.	2+0	3		Bachelor's Degree	
<b>ECZ459 RADIOPHARMAC EUTICS</b>	The history of radioactive substances and radiopharmaceuticals, types of radioactive decay and examples, the kinetics of radioactive decay will be explained by some examples. Various calculations will be shown by describing radioactivity units and some sample problems. When working with radioactive products, it is aimed to give information about radiation protection and how to be careful in these matters. The pharmacist should be able to identify radioactive products and should provide useful information to the patients or to whom may be subjected to radioactivity. For this purpose, applications of radiopharmaceuticals, their usage for treatments are explained and examples will be given. The radiopharmaceuticals used for the	2+0	2	The knowledge and skills gained by completing the Pharmacy undergraduate program can be applied in all areas of the pharmacy profession within the framework of relevant laws, regulations, legislation, professional core values and ethical rules. Students can use the concepts and applications of basic science, medicine and health sciences in the field of pharmacy by combining them with applications related to the pharmacy profession. Enables pharmacists to become qualified in the field of radiopharmacy. Students learn the formulations and productions of radiopharmaceutical products.	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim ,Prof.Dr. Zelihagül Değim

	diagnosis, and some examples and formulations will be provided.					
<b>ECZ460 PROFESSIONAL MANAGEMENT AND LEADERSHIP</b>	This course aims to give information about professional and self-management and to improve leadership skills of pharmacy students to provide services to the community in an appropriate, efficient, equitable, and sustainable manner.	2+0	3		Bachelor's Degree	
<b>ECZ461 SCIENTIFIC RESEARCH METHODS AND PROJECT WRITING</b>	It is aimed to provide knowledge to students about concepts as knowledge, scientific research, scientific methods, scientific research types, stages of scientific researchs, determination of research objectives, how to prepare scientific project proposal, literature search systems, method, classification and analysis process of data, scientific journals, scientific procet writing and thesis writing rules, ethics rules, and how to cite references.	1+0	2	Students gain knowledge about basic concepts of knowledge, science, scientific research and scientific methods. Students gain knowledge about the concept of literature search systems. Gained scientific research methods knowledge prepares for graduation project in the next semester. Students will gain competence of prepare to project.	Bachelor's Degree	Asist Prof.Dr. NİLAY BEĞİÇ
<b>ECZ462 GERONTOLOGY</b>	The aim of this course is to educate the individuals who will be able to intervene in social services related to the elderly, biological, physiological, psychological, sociological, cultural aging processes, differentiating features of old age, transferring service models to the problems and needs of the elderly	2+0	3		Bachelor's Degree	

<p><b>ECZ464 DRUG AND SUBSTANCE ABUSE</b></p>	<p>The aim of this course is to teach the neurobiology of addiction, to classificate the addiction types and general specialities, to determine the addiction potentials of substances, the individual specialities of addictive persons, to learn the harmful effects of addiction, and to convey information about addiction systematically.</p>	<p>2+0</p>	<p>3</p>		<p>Bachelor's Degree</p>	
<p><b>ECZ466 RESEARCH AND DEVELOPMENT IN PHARMACEUTIC AL INDUSTRY</b></p>	<p>The aim of the course is to provide students with information on pharmacy development stages, processes, targets and success factors and feasibility studies to achieve these objectives so that pharmacy students have the necessary equipment and competencies to work in an R&amp;D department in pharmaceutical industry.</p>	<p>2+0</p>	<p>3</p>		<p>Bachelor's Degree</p>	
<p><b>ECZ551 GRADUATION PROJECT I</b></p>	<p>The aim of the course is to improve pharmacy students' research skills including research topic selection, literature review, choosing research question appropriate materials and methods, reporting and presenting research results by direction of a mentor.</p>	<p>2+8</p>	<p>10</p>	<p>The student takes the course content to be determined by the instructor or related to the selected topic.</p>	<p>Bachelor's Degree</p>	<p>Prof.Dr. Abdülkerim Alpınar Prof.Dr. Süreyya Ölge n Vildan Seyhan Merve Memişoğlu Berin Kahraman Prof.Dr. İsmail Tuncel r Değim Prof.Dr. Zelihagül De ğim Nilay Beğic Abdülilah Ece Göksun Demirel Seval Korkmaz</p>

<p style="text-align: center;"><b>ECZ552 GRADUATION PROJECT II</b></p>	<p>The aim of the course is to improve pharmacy students' research skills including research topic selection, literature review, choosing research question appropriate materials and methods, reporting and presenting research results by direction of a mentor.</p>	<p style="text-align: center;">1+8</p>	<p style="text-align: center;">5</p>	<p>The student takes the course content to be determined by the instructor related to the selected topic.</p>	<p style="text-align: center;">Bachelor's Degree</p>	<p style="text-align: center;">Prof.Dr. Abdülkerim Alpınar Prof.Dr. Süreyya Ölge n Vildan Seyhan Merve Memişoğlu Berin Kahraman Prof.Dr. İsmail Tuncce r Değim Prof.Dr. Zelihagül De ğim Nilay Beğic Abdülilah Ece Göksun Demirel Seval Korkmaz</p>
<p style="text-align: center;"><b>ECZ553 BASIC CALCULATIONS IN PHARMACEUTIC AL TECHNOLOGY</b></p>	<p>In this course, basic operations and some formulation properties used in Pharmaceutical Technology will be explained. For this purpose, heating and heat transfer, moisture content of air, humidity graph and relative humidity measurement methods, effects of moisture content on drug stability, theoretical principles of drying, intermittent and continuous drying, drying using ovens, vacuum drying cabinets and microwave dryers, freeze drying and their validations, methods of purification of water, deionization, reverse osmosis, electrodialysis, ultrafiltration, distillation, centrifugal separation, filtration methods, membrane filtration, filtrater types and validation, sterilization methods,</p>	<p style="text-align: center;">2+0</p>	<p style="text-align: center;">5</p>		<p style="text-align: center;">Bachelor's Degree</p>	

	sterilization kinetics, wet sterilization, autoclave types, validation, heat sterilization, gas sterilization and validation, grinding processes, mill types, mixing processes, mixer types, mixing of semi-solids, mixing methods will be explained in detail. Basic and special calculations to prepare isotonic solutions will be explained.					
<b>ECZ554 PHARMACY INTERNSHIP IV</b>	The objective of this internship is to help students gain moderate-advance knowledge, skills and experience about pharmacy practices.	0+6	5		Bachelor's Degree	
<b>ECZ555 STABILITY</b>	Basic concepts of stability, examination of degradation and degradation kinetics of drugs, half life and shelf life calculations, determination of activation energy of decay, related calculations, emphasizing the preservation of drugs and storage conditions will be given. As a result, it is aimed to strengthen students' knowledge thoroughly by explaining the stability concept in detail with examples.	2+0	5	Learning of the breakdown and decay kinetics of drugs, calculation of half life and shelf life, Learning how to make calculations related to stability and learn how to preserve drugs	Bachelor's Degree	Prof.Dr. İsmail Tuncer Değim
<b>ECZ556 ELECTIVE INTERNSHIP V</b>	This elective internship can be conducted either in drug industry or hospital pharmacy. It aims to improve pharmacy students' practical skills in: If student choose the pharmaceutical industry field; the aim of the	0+6	5		Bachelor's Degree	

	<p>internship is to improve knowledge and experiences of students about formulation, manufacturing, quality control, quality assurance, Good Manufacturing Practice (GMP)/Good Laboratory Practice (GLP), marketing authorization activities in pharmaceutical industry.</p> <p>If students choose community or hospital pharmacy field; the aim of the internship is to improve knowledge and experiences of students about determination of drug requirements, supply chain management, outpatient/inpatients drug supply, basic aspects about the layout, organization and keeping records, communication skills with other official/unofficial departments and patients in the hospital pharmacy.</p>					
<p><b>ECZ557</b> <b>SEMI-SOLID</b> <b>DRUG</b> <b>TECHNOLOGY</b></p>	<p>Examination of semi-solid systems, examination of the penetration properties of materials using natural and artificial membranes, eye ointments, vaginal ointments, deep penetration, penetration pathways, the structure and functions of skin and skin layers will be given. The storage conditions and quality controls of the semi-solids will be explained. The aim of the course is to give basic concepts about semi-solid drug forms and some critical issues during production. The formulations of semi solid systems,</p>	2+0	5	<p>To learn basic concepts and information about semi-solid drug forms by discussing, . Examination of semi-solid systems, Cream, ointment lotion, greenhouse, pat, rheological properties, . Examination of flow types and storage, learning of quality controls.</p>	Bachelor's Degree	Prof.Dr. Zelihagül Değim

	cream, ointment lotion, pats in detail and the rheological properties, storage conditions, quality control parameters will be provided.					
<b>ECZ558 APPLIED ETHICS AND SOCIAL RESPONSIBILITY</b>	This course aims to give students information about the basic concepts and standards of ethics and Corporate Social Responsibility (CSR), business ethics, ethics in pharmaceutical industry, public health ethics, environmental ethics, and social entrepreneurship and to develop their skills in identification and analyses of ethical dilemmas.	2+0	5		Bachelor's Degree	
<b>ECZ559 CLINICAL RESEARCH METHODS</b>	This course aims to evaluate the practical aspects of clinical trial conduct and management, including clinical trial phases and design, planning, implementation, data analysis, regulatory and procedural guidelines.	2+0	5		Bachelor's Degree	
<b>ECZ560 DRUG DESIGN: CURRENT TRENDS AND FUTURE TENDENCY</b>	This course aims to provide students with a general overview of the process of drug discovery and development, from target identification to final drug registration. Drug development will be presented as a process involving target selection, hit identification, lead design using computer-aided methods, combinatorial chemistry, high-throughput screening. Current trends in biomedical research such as gene engineering using by CRISPR,	2+0	5		Bachelor's Degree	

	3D-printed drugs, biosensors and drug repurposing will also be discussed. Along the way students will learn about concepts essential for understanding the processes involved in drug design and development.					
<b>ECZ561 CHEMICAL ANALYSIS IN BIOAVAILABILITY AND BIOEQUIVALENCE</b>	The concepts of bioavailability and bioequivalence, legal regulations, <i>in vivo</i> and <i>in vitro</i> analytical method validation will be given. Bioavailability, bioequivalence concept, bioavailability and bioequivalence studies within the scope of drug licensing and chemical analytical methods <i>in vivo</i> and <i>in vitro</i> analytical validation methods are given in detail.	2+0	5		Bachelor's Degree	
<b>ECZ562 TRANSDERMAL AND TRANSMUCOSAL DRUG DELIVERY SYSTEMS</b>	Transdermal and transmucosal transit from barriers, penetration pathways, enhancement of permeability, penetration enhancers, formulations of transdermal and transmucosal drug delivery systems, used formulation details, examples from commercial preparations will be given. The course aims to teach students about basic concepts and information about transdermal and transmucosal drug delivery systems.	2+0	5		Bachelor's Degree	
<b>ECZ563 INSTRUMENTAL</b>	The aim of the course is to give knowledge regarding spectroscopic	2+0	5		Bachelor's Degree	

<b>ANALYSIS METHODS</b>	<p>methods such as Ultraviolet and Visible Molecular Absorption Spectroscopy, Atomic Absorption Spectroscopy, and Atomic Emission Spectroscopy, Infrared Spectroscopy, Raman Spectroscopy, Nuclear Magnetic Resonance Spectroscopy, X-Ray Spectroscopy, and electroanalytical methods such as Voltammetry that is used in pharmaceutical drug analysis and advanced analytical techniques such as Liquid Chromatography-Mass Spectrometry (LC-MS), Gas Chromatography - Mass Spectrometry (GC-MS), Ultra Performance Liquid Chromatography (UPLC), and Quadrupole Time of Flight Mass Spectrometry (QTOF) that are commonly used in quality control and research and development in pharmaceutical industry.</p>					
<b>ECZ564 PHARMACEUTICAL NANOTECHNOLOGY</b>	<p>The development of new drug delivery systems is rapidly developing by bringing the particle sizes to nanometer size of delivery system or drug which has a low solubility. Methods for making nanocrystals and nanopowders, how their solubility can be increased, dissolution rates and consequently bioavailability alterations will be given and discussed. In the lectures, nanoparticles, solid lipid nanoparticles, liposomes, nanosuspensions, nanoemulsions,</p>	<p>2+0</p>	<p>5</p>		<p>Bachelor's Degree</p>	

	<p>dendimers will be studied by explaining and the definition and importance of nanotechnology will be given. Characterization and release kinetics of nanosized systems, Nanocrystal and nanopowders, preparation technique will be provided, oral and pulmonary applications, nanobiotechnology, nosensors and biosensors, diagnostic tools and techniques will be explained</p>					
<p><b>ECZ565</b> <b>AIR AND SPACE</b> <b>PHARMACY</b></p>	<p>The aim of the course is to teach students about the formulation of medicines used in air, space, the changes on the body and functions at air or space, design of medicinal formulation and related topics. Today, airplane travel is a more preferred type of transportation being both cheaper and not time consuming. Most intercontinental journeys last more than 10 hours. The issue is discussed considering drug stability and people who travel regularly and frequently. People should have some information about the stability and breakdown of the medicines when they carry. It should also be noted what have to be done if pilots, cabin crew or passengers need to have treatment. Since space travels will be more and frequent in the near future, it is important that people have knowledge about these issues. Pharmacists should be ready to give some advice and should</p>	<p>2+0</p>	<p>5</p>	<p>Learning basic concepts and information. Learn about medicines used in the air and in space, learn how to prepare prescriptions or medicines when necessary. Learning how to design and develop formulations of medicines for air and in space use</p>	<p>Bachelor's Degree</p>	<p>Prof.Dr. İsmail Tuncer Değim</p>

	provide information to the patients about all these issues.					
<b>ECZ566 TARGETED DRUG DELIVERY SYSTEMS</b>	Drug targeting, targeting mechanisms, advantages and disadvantages of targeting, examples of targeted drug delivery systems, the future of drug targeting will be given and all issues will be discussed. It is aimed to teach students about the basic concepts and to give information about drug targeting.	2+0	5		Bachelor's Degree	
<b>ECZ567 VETERINARY MEDICINE</b>	The aim of the course is to teach the undergraduate students about the drugs that are used in occupational veterinary and agricultural fields.	2+0	5		Bachelor's Degree	
<b>ECZ568 AROMATHERAPY</b>	This course aims to give information regarding to therapy with essential oils. Isolation of essential oils, their toxicity, clinical use and applications are described. Information regarding to the prevention and relief of some disorders or relief of symptoms with essential oils are given during the course.	2+0	5		Bachelor's Degree	
<b>ECZ569 COMPUTER AIDED DRUG DESIGN METHODS</b>	The aim of the course is to teach about the basic concepts of molecular modeling techniques such as preparation of protein-ligand complexes, molecular docking, homology modelling, structure- and ligand-based virtual screening methods with a hands-on	1+2	5		Bachelor's Degree	

	understanding. Recent advances in computer-aided drug design that has been accumulated in scientific literature will be also reviewed throughout the lectures. The main goal of this course is to inform students regarding the advantages and challenges of using <i>in silico</i> approaches for the design, discovery and development of drugs.					
<b>ECZ570 NUTRACEUTICALS AND FUNCTIONAL FOOD</b>	The aim of the course is to understand the composition of nutraceuticals, functional foods and food supplements, to discover their importance in nutrition and their effects on health.	2+0	5		Bachelor's Degree	
<b>ECZ571 AGRICULTURAL CHEMICALS</b>	The aim of the course is to teach students about the basic concepts, methods and ways of practices in application of pesticides, in detail, to provide theoretical and applied information for controlling pathogens, pests and weeds in plants, to gain the ability of conscious and analytical approach to solution of plant protection problems in agricultural production for less usage of chemicals, to compare the pesticide application methods for efficacy and risks and to generate the personal solutions for problems faced on topics.	2+0	5		Bachelor's Degree	
<b>ECZ572</b>	This course aims to describe and give information regarding the	2+0	5	Students learn what is Intellectual Property Rights.Understands the	Bachelor's Degree	Asist Prof.Dr. Vildan Seyhan

<b>INTELLECTUAL PROPERTY RIGHTS ON MEDICINE</b>	<p>importance of Intellectual Property Rights on medicine. National and International Laws on Intellectual Property Rights, patent and trade mark topics related to medicine, how to proceed a patent/trade mark search and implications of the laws are described during the course.</p>			<p>importance of Intellectual Property Rights on Medicine. Students have information about Patent and Trade Mark Search, Application, Register.</p>		
<b>ECZ573 PHARMACOECONOMY</b>	<p>This course aims to provide basic information about health economics, drug pricing and reimbursement, pharmacoeconomics and pharmacoeconomic analyses (cost-minimization, cost-benefit, cost-effectiveness, cost-utility). This course also aims to improve students' ability to assess the relationship between pharmacoeconomics and other disciplines such as Pharmacovigilance, pharmacoepidemiology, rational drug use</p>	<p>2+0</p>	<p>5</p>	<p>This course aims to provide basic information about pharmacoeconomics and pharmacoeconomic analyses (cost-minimization, cost-benefit, cost-effectiveness, cost-utility).</p>	<p>Bachelor's Degree</p>	
<b>ECZ574 PHARMACEUTICAL MARKETING COMMUNICATION</b>	<p>This course aims to give information about general principles of marketing communications for prescription and non-prescription drugs, consumer behaviour and psychology, neuromarketing, digital marketing and social media management, integrated marketing communications, sustainable marketing, pharmaceutical product and brand management and to develop related skills such as creative thinking, leadership.</p>	<p>2+0</p>	<p>5</p>	<p>This course aims to give information about general principles of marketing communications for prescription and non-prescription drugs and to develop related skills.</p>	<p>Bachelor's Degree</p>	<p>Asist Prof.Dr. Merve Memişoğlu</p>

<p><b>ECZ575 PHARMACOGENOMICS</b></p>	<p>Pharmacogenetics is the discipline of inherited genetic differences in drug metabolic pathways which can affect individual responses to drugs, both in terms of therapeutic effect as well as adverse effects. Among the goals of this course are to give a general understanding of the basic principles of pharmacogenetics, to teach drug effects, pharmacokinetics, and pharmacodynamics affected by genetic factors, how to evaluate and identify genetic characteristics changing effects of the drugs used for treatment and diagnosis, to give information about pharmacogenetics of drug transporters, and to help students learn how to use the knowledge obtained in this course in practice</p>	2+0	5	<p>In this course, pharmacokinetics, and pharmacodynamics affected by genetic factors, to evaluate and identify genetic characteristics changing effects of the drugs used for treatment and diagnosis, to have information about pharmacogenetics of drug transporters, and to transfer the knowledge obtained in this course in a systematic way</p>	Bachelor's Degree	Göksun Demirel
<p><b>ECZ576 PREPARATION COURSE FOR PHARMACY PROFICIENCY EXAMINATION</b></p>	<p>This course covers the substantial information related with pharmaceutical science courses and uses problem solving as a teaching strategy to prepare students for the Pharmacy Specialization Exam (EUS), which is organized to gain expertise in the field of pharmacy. The aim of this course is to ensure that pharmacy students have the knowledge, skills and abilities that meet the requirements of the pharmacy degree. Throughout this course, students will be able to</p>	2+0	5		Bachelor's Degree	

	<p>identify their learning needs and will be guided to reference sources and materials to get prepared for the exam. Moreover, throughout the course sample questions that reflect the background knowledge base in the pharmaceutical sciences and the practice of pharmacy will be provided to assist students to become familiar with the examination.</p>					
<p><b>BIR813 STRESS MANAGEMENT</b></p>	<p>The course aims to provide information about the importance of stress in human life, to give an overview about sources of job related stress and stress management approaches as well as to discuss common practices of stress management in several examples interactively.</p>	2+0	2		Bachelor's Degree	
<p><b>BIR933 SPEAKING AND PRESENTATION TECHNIQUES</b></p>	<p>The aim of this course is to train individuals who can use the language correctly, have rich vocabulary, can consider the text, have imbibed to the art of oratory.</p>	2+0	2	<p>This course contains; 1. Concepts of diction and phonetic.,2. Relaxation and concentration.,3. The breathing and the use of sound.,4. Turkish grammar rules.,5. Toning, emphasis, articulation exercises-1.,6. Toning, emphasis, articulation exercises-2.,7. Overcoming speech defects.,8. The body language.,9. Stress control.,10. Improvisational exercises.,11. To read poetry,12. Transfer of emotion, bubbling of story.,13. To comment the news text.,14. Presentation skills.</p>	Bachelor's Degree	<p>Asist Prof.Dr. Tayfun YEŞİLŞERİT</p>

<p align="center"><b>BIR935 BASIC DISASTER INFORMATION</b></p>	<p>Students will learn basic information about disasters, knowledge about disaster management and planning.</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>It is aimed that the learner knows the lesson and knows the general concepts. Students know basic concepts about disaster. They have basic knowledge about the causes and effects of natural disasters. They have basic knowledge about the causes and effects of human-induced disasters</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Instructor Gizem AKDAĞ</p>
<p align="center"><b>BIR943 BIOLOGICAL ANTIAGING</b></p>	<p>The aim of this course is to provide information about biological aging, energy and nutrient requirements of older people, ORAC, relationship between telomere length and nutrition, importance of nutrition in anti aging therapies, anti aging therapies in different cultures, nutricosmetics, importance of some foods in anti aging therapies, relationship between anti aging and its clinical practices with nutrition.</p>	<p align="center">2+0</p>	<p align="center">2</p>		<p align="center">Bachelor's Degree</p>	
<p align="center"><b>BIR947 MEDICAL TERMINOLOGY</b></p>	<p>The aim of this course is to provide information about the ability to write, pronounce and analyze medical terms correctly and properly, to provide infrastructure for other subjects of health services, to ensure that medical terms are used correctly, and to prevent the harm and danger arising from using the wrong term.</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>This basic course, helps students comprehend the meaning, writing and reading of medical terms which will encounter in their professional life thus facilitating communication and teaching basic rules to define and build medical terms.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Instructor Dr. Yıldız Tanıç</p>
<p align="center"><b>BIR963 CIVILIZATION HISTORY</b></p>	<p>Besides the discussion of 5000 years of overview to the history of civilization, in this course, starting from the early periods, the way of</p>	<p align="center">2+0</p>	<p align="center">2</p>	<p>Besides the discussion of 5000 years of overview to history of civilization, in this program, starting from the early periods, the</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Asist Prof.Dr. Tayfun YEŞİLŞERİT</p>

	thinking and life of human societies, various social organizations and the transformations of social ideas and lifestyles will be discussed.			way of thinking and life of human societies, various social organizations and the transformations of social ideas and lifestyles will be discussed.		
<b>BIR967 INTRODUCTION TO PSYCHOLOGY</b>	The objective of this course is to introduce basic principles, processes, approaches and procedures of psychology to students.	2+0	2	Learns the history of psychology Explains basic approaches to psychology Learns the branches of psychology. Describes the research methods in psychology. Learns relationship between psychology and other sciences. Explains sensation, perception and related concepts. Understands learning psychology. Understands Freud and his approach.	Bachelor's Degree	Instructor Tülay Tuna Sarıtaş
<b>BIR904 ANTHROPOLOGI E OF HEALTH</b>	The aim of this course is to provide baseline understanding of the interrelationships between health illness, culture and healing. This course is based on this following question, What is the meaning of anthropological perspectives such as the emic approach or the holistic analysis of culture, for the study of health generating behavior? In this course, the meaning of health in different cultures will be also analysed. The dominant biomedical paradigm, the meaning of "alternative medicine" in different cultures will be discussed. The course will also include a critical study of the contribution of	2+0	2	Discusses the concept of health illness and disease anthropologically.Explores the power of medicine in western cultures.Discusses the position of an anthropologist is applied health projects.Explores the healing practices in different cultures.Discusses the legitimacy of biomedical paradigm and power relationships.Explores the legitimacy of alternative medicine in neo-liberal economies	Bachelor's Degree	Asist Prof.Dr. Tayfun YEŞİLŞERİT

	anthropologists in applied health projects.					
<b>BIR908 COMMUNICATIO N WITH DISADVANTAGEO US PEOPLE</b>	The aim of this course is to raise awareness of the disadvantaged individuals and to know the basic issues about effective communication with disadvantaged individuals.	2+0	2	To know how the disadvantage will affect the individuals, to be equipped with collecting disadvantages, to communicate effectively with disadvantaged individuals	Bachelor's Degree	Instructor İlayda ERDOĞAN
<b>BIR920 PATIENT RELATIONS MANAGEMENT</b>	Objectives of the course are to evaluate the dimensions of patient relations management and to develop the activities of patient relations management in health organizations. Students will learn how to communicate effectively with patients and relatives to help them. Students will receive information about the correct behavior of health professionals, education and health care, the effects of patient relationship management on institutions and how to increase the quality of service and communication skills.	2+0	2	Communicate effectively with Patients and relatives to help. Given the behavior of health professionals, education and health care, awareness to the effects on Institutions by Increasing other people, is to increase the quality of service and communication skills.	Bachelor's Degree	Instructor Bengü AKSOY
<b>BIR934 DICTION AND ELOCUTION</b>	The aim of this course is to improve the ability to speak and to teach the ways of speaking beautifully and effectively and to acquire the habit of using language as an effective communication tool.	2+0	2	What is a beautiful and effective speech? Development and Evaluation of Speaking Skills, Points to be Considered in Turkish Speech. Speech Types, Speech, Debate (Open Session, Symposium, Panel, Forum, Debate, Colloquium, Conference), Effective Listening, Note Taking	Bachelor's Degree	Prof.Dr. Fatma Çelik

				Methods and Techniques, Sese-based language mistakes		
<b>BIR960 INTERPERSONAL VIOLENCE MANAGEMENT</b>	<p>This course aims to inform students about topics including human societies, social forces, and collective behaviour patterns. Students will examine contemporary problems related to poverty, immigration, terror, divorces, social security, education, and health. Topics including social problems related with humanity and in particular to the realities of Turkish Communities' problems and reasons behind these problems, and how they can be solved are discussed.</p>	2+0	2	<p>This course includes the student's ability to manage violence as a universal problem by acquiring knowledge and awareness about the formation of all forms of personal violence at the individual and social level, results, working with victims and prevention.</p>	Bachelor's Degree	Selmin KÖSE
<b>BIR970 COMMUNICATIO N SKILLS</b>	<p>The purpose of this course is to inform students about concepts of basic communication, communication processes, structure, functions, properties and types, communication sciences with other disciplines, communication models, communication ethics, management and leadership. In this course, students will learn how to communicate effectively with individuals and colleagues, verbal and nonverbal communication, diction, effective listening, obstacles in communication, time and stress management and motivation issues</p>	2+0	2	<p>Health communication, internal communication, media communication</p>	Bachelor's Degree	Instructor Yasemin Alpınar

	which are very important in their profession.					
<b>BIR815 ENTREPRENEURSHIP AND BRAND MANAGEMENT</b>	The aim of this course is to teach the students basic information about entrepreneurship and brand management, to teach them how to turn creative and innovative ideas into business, to examine the possible conditions of entrepreneurship in the health sector, to evaluate the possible infrastructure conditions that lead to the formation and development of entrepreneurship and to stimulate entrepreneurial potentials in practical life by improving students' thinking, inquiry and production skills.	2+0	3		Bachelor's Degree	
<b>BIR937 PUBLIC RELATIONS AND COMMUNICATION</b>	In this course, basic concepts related to communication and public relations, basic aims of communication and public relations, communication processes, communication environment and types, basic functions of public relations process and the importance of public relations will be explained.	3+0	3	Evaluate the activities of public relations and the role of public relations in health institutions.	Bachelor's Degree	Instructor Bengü AKSOY
<b>BIR941 OCCUPATIONAL HEALTH AND SAFETY</b>	The aim of this course is to give information about security precautions at the workplace, and security precautions against occupational diseases. Students will learn how to take necessary precautions by understanding the causes of accidents and injuries that	2+0	3	Risk and Hazard Identification Accidents at work Occupational Diseases Emergency Situations	Bachelor's Degree	Instructor Sarper KARA

	may occur at the workplace. Students will acquire knowledge and skills to protect workers from occupational accidents and occupational diseases.					
<b>BIR953 HEALTHY LIVING AND PHYSICAL ACTIVITIES</b>	The aim of this course is to improve students' planning and applying skills of healthy lifestyle and physical activity programs for different populations of society.	2+0	3	Evaluation of each group healthy, ill or risk group of people with needs and practical application specific treatment and evaluation approaches for healthier community	Bachelor's Degree	Asst.Prof.Dr Buket AKINCI
<b>BIR957 INTRODUCTION TO SOCIOLOGY</b>	Sociology is the experience of freedom of learning. The course aims the pharmacy students to be acquainted with the basic concepts of sociology and the ability of interpreting daily life events from a sociological perspective. In doing so, a theoretical introduction is made in order to contribute to the students' intellectual development and to ensure that they have the basic concepts. It is based on the idea that the individual will better understand the social world with his understanding of society and different societies. This course includes the subject and method of sociology, history of sociology, some of the basic concepts of sociology, sociology is related to other social sciences, the role of sociologists in society, importance and development of the sociological view, objectivity is the problem, founders of modern	2+0	3	Course Content and Learning Activities Introduction, Introduction to Sociology and A. Comte, What is Sociological Thinking Concepts of anomie and social solidarity with Durkheim Economic appraisal approach and Marx when assessing society. To understand modern society. Buocracy and Protestant ethic concepts, Weber Formal sociology, congregation and society concepts Sexuality and gender Midterm "We" and "They" Film application-TBAL Power and choice Nature and Culture Self-defense and moral duty, Film application-TBAL Diving for life - evaluation of course	Bachelor's Degree	

	sociology, and basic sociological concepts and discussions.					
<b>BIR973 ART THERAPY</b>	The aim of this course is to provide an essential knowledge and application skills in the areas of definition of art, use of art as a psychiatric method in individual therapy, clinical applications of psychopathological art, art therapy practice in psychiatric patients, music therapy and artistic therapy symbols to students.	1+2	3	To be able to evaluate the artistic production process to be done in the framework of occupational therapy and to analyze the emotional problems that the patient can not express verbally	Bachelor's Degree	Instructor Banu Muratlı
<b>BIR993 TIME MANAGEMENT AND PLANNING</b>	The purpose of the Time Management course is to promote and adopt the principles and techniques of using time effectively and efficiently in all kinds of work and personal life. The following topics will be covered in this course; Introduction to time management and components of time management, Organization of time-consuming activities, Planning in time management and using technology in time management.	2+0	3	Knows the Turkish grammar rules and increases her/his vocabulary. Uses the sound and body language and Knows how to prepare sound and body for presentation. .Have communication skills, can express himself/herself. Have self-confident when speaking in front of the community.Knows how to deal with interviews and negotiations.Gets the ability to speak to talk so that feelings and thoughts can turn into words.	Bachelor's Degree	Asist Prof.Dr. Tayfun YEŞİLŞERİT
<b>BIR809 ENVIRONMENT AND SOCIAL RESPONSIBILITY</b>	Within the scope of this course, it is aimed to establish the knowledge of corporate and social responsibility in the frame of ethical behavior and to gain knowledge and ability to prepare and manage social responsibility project.	2+0	3		Bachelor's Degree	

<p align="center"><b>BIR811 CORRESPONDENCE AND FILING TECHNIQUES</b></p>	<p>The aim of this course is to teach how to write internal and external correspondences in terms of content and form and to learn effective writing features and to improve their effectiveness in document management and correspondence.</p>	<p align="center">2+0</p>	<p align="center">3</p>		<p align="center">Bachelor's Degree</p>	
<p align="center"><b>BIR817 INNOVATION MANAGEMENT</b></p>	<p>The aim of the course is to gain the ability to apply through institutional foundation and business cases in order to be able to create an understanding of successfully managing and innovation management in organizations</p>	<p align="center">2+0</p>	<p align="center">3</p>		<p align="center">Bachelor's Degree</p>	
<p align="center"><b>BIR930 CREATIVE DRAMA</b></p>	<p>The aim of the course is to introduce the importance of creativity regarding the practical and emotional intelligence improvement and expressing oneself. Creative drama includes some exercises to improve our ability to express ourselves within the proper diction and body language.</p>	<p align="center">0+2</p>	<p align="center">3</p>	<p>Creative drama exercises with the studies to improve our ability to express ourselves within the proper diction and body language.</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Instructor Seden AŞTI ERON</p>
<p align="center"><b>BIR952 TOURISM OF HEALTH</b></p>	<p>The purpose of the course is to get acquainted with concepts related to health tourism, to analyze the development of health tourism, to evaluate health tourism industry, the developments in Turkey and the world.</p>	<p align="center">2+0</p>	<p align="center">3</p>	<p>Describes concepts and features about health tourism Explains the development of health tourism and reasons behind it. Discusses health tourism industry and arrangements which take place. Analyzes health tourism in Turkey and the world. Investigates health tourism market, industry and treatment processes. Explains the effects of health tourism for source and</p>	<p align="center">Bachelor's Degree</p>	<p align="center">Instructor Elif BAKKAL</p>

				target countries at system level.Analyzes important political and ethical issues regarding health tourism practices.		
<b>BIR958 SIGN LANGUAGE</b>	Objectives of this course are to teach students how to make a converstaion in Turkish Sign Language and to develop their vocabulary, grammar and expression skills. This course aims the pharmacy students to be able to communicate with people by using Turkish Sign Language, give information about themselves and ask questions, use basic question structures.	0+2	3	Communicate with people by using Turkish Sign Language, Can give information about themselves and ask questions, Can use basic question structures.	Bachelor's Degree	Associate Prof.Dr. Fulya Yalçınkaya
<b>BIR964 CHILD DEVELOPMENT STAGES</b>	This course aims to give information about the definition of child development, childhood and pre-school education, the importance of education in the development of the child and the role of the family in preschool education.	2+0	3		Bachelor's Degree	
<b>BIR976 BUSINESS HARMONISATION EDUCATION</b>	The aim of the course is to transfer all the processes that might be encountered in health services to students and to prepare them for business life.	1+2	3	Introduction to clinical and institutional areas, department / unit clinical education leaders, disease health concept, characteristics of health care, basic behavior in health institutions, patient psychology and communication with patient, communication in health, professional ethics, occupational ethics, patient safety, infection control.	Bachelor's Degree	Instructor Sena ÖNER

<p align="center"><b>BIR992 SURVIVING IN NATURE</b></p>	<p>The aim of the course is to teach students basic concepts and methods to stay alive in the wild such as tent construction, firefighting, survival food, techniques of surviving in every natural environment and hazards.</p>	<p align="center">2+0</p>	<p align="center">3</p>		<p align="center">Bachelor's Degree</p>	
<p align="center"><b>BIR996 CHILD RIGHTS</b></p>	<p>The aim of this course is to provide students information on child rights and child law in Turkey.</p>	<p align="center">2+0</p>	<p align="center">3</p>		<p align="center">Bachelor's Degree</p>	