



All courses have the credits of European Credit Transfer System (ECTS). Total ECTS credit number is 30 for a semester and 60 for two semesters (a year).

Compulsory courses in green-painted columns in the table are provided with English language support for Erasmus+ students by KTU Faculty of Pharmacy academic members.

The elective courses are offered and announced at the beginning of each semester by the faculty. For the elective course list to be taught, Erasmus coordinators of our Faculty, Prof. Dilek KUL or Assoc. Prof. I. Selin DOĞAN, should be consulted.

Below is the list of the compulsory courses of the KTU Pharmacy curriculum. For more information about the curriculum and content of the courses, please visit <http://www.katalog.ktu.edu.tr/DersBilgiPaketi/semester.aspx?pid=125&lang=2&sid=10>

FIRST YEAR

COMPULSORY COURSES

Spring (1st Semester)						Summer (2nd Semester)					
Code	Course Title	T	U	P	ECTS	Code	Course Title	T	U	P	ECTS
Z.ECZ1015	Introduction to Pharmacy and Terminology	1	0	0	2	Z.ECZ	Anatomy	2	0	0	4
Z.ECZ1013	Medical Biology and Genetics	2	0	0	5	Z.ECZ	Physiology	2	0	0	4
Z.ECZ1007	History of Pharmacy and Deontology	2	0	0	4	Z.ECZ1002	General Chemistry-II	2	0	0	4
Z.ECZ1017	General Chemistry-I	2	0	0	5	Z.ECZ	Organic Chemistry-I	2	0	0	4
Z.ECZ1003	Mathematics	2	0	0	3	Z.ECZ	Computer and Applications in Pharmacy	2	1	0	4
Z.ECZ1019	Physics	2	0	0	4	Z.ECZ1006	Laboratory Safety and Techniques	2	0	0	4
Z.TDB1001	Turkish Language-I	2	0	0	2	Z.TDB1000	Turkish Language-II	2	0	0	2
Z.YDB1001	English-I	3	0	0	3	Z.YDB1004	English-II	2	0	0	2
Z.AITB1001	Principles of Atatürk and History of Turkish Revolution -I	2	0	0	2	Z.AITB1000	Atatürk's Principles and History of Revolution -II	2	0	0	2
Total ECTS					30	Total ECTS					30

SECOND YEAR

COMPULSORY COURSES

Spring (3rd Semester)						Summer (4th Semester)					
Code	Course Title	T	U	P	ECTS	Code	Course Title	T	U	P	ECTS
Z.ECZ	Analytical Chemistry-I	3	0	0	4	Z.ECZ	Analytical Chemistry-II	2	0	0	4
Z.ECZ	Analytical Chemistry-I Lab.	0	0	3	2	Z.ECZ	Analytical Chemistry-II Lab.	0	0	3	2
Z.ECZ2011	Biochemistry-I	2	0	0	3	Z.ECZ	Biochemistry-II	2	0	0	3
Z.ECZ2019	Organic Chemistry-II	2	0	0	3	Z.ECZ	Biochemistry-II Lab.	0	0	3	2
Z.ECZ	Biostatistics	2	0	0	2	Z.ECZ	Pharmacology-I	3	0	0	4
Z.ECZ	Pharmaceutical Microbiology	3	0	0	4	Z.ECZ	Pharmaceutical Botany	2	0	0	4
Z.ECZ	Pharmaceutical Microbiology Lab.	0	0	3	2	Z.ECZ	Pharmaceutical Botany Lab.	0	0	3	3
Z.ECZ2001	Immunology	2	0	0	3	Z.ECZ	First Aid	2	0	0	2
Z.ECZ2015	General Pathology	2	0	0	3	Z.ECZ	Internship-I	0	0	0	2
	Elective Course (Semester 3)	1x2	0	0	4		Elective Course (Semester 4)	1x2	0	0	4
Total ECTS					30	Total ECTS					30

Summer Term: Internship-1 (Free Pharmacy, 4 weeks / 20 working days)

ELECTIVE COURSES

Spring (3rd Semester)						Summer (4th Semester)					
Code	Course Title	T	U	P	ECTS	Code	Course Title	T	U	P	ECTS
S.ECZ2005	Vitamins and Coenzymes	2	0	0	4	S.ECZ2000	Nutrient Analysis	2	0	0	4
S.ECZ	Enzymology	2	0	0	4	S.ECZ2002	Biochemical Basis of Diseases	2	0	0	4
S.ECZ	Molecular Biology	2	0	0	4	S.ECZ	Research Techniques in Biochemistry	2	0	0	4
S.ECZ	Basic Principles of Medicinal Chemistry	2	0	0	4	S.ECZ	Basic Concepts of Natural Source Medicines	2	0	0	4
S.ECZ2021	Behavioral Sciences and Professional Ethics	2	0	0	4	S.ECZ	Drug Nomenclature	2	0	0	4
S.ECZ	Communication Skills	2	0	0	4	S.ECZ	Occupational Health and Safety	2	0	0	4
S.ECZ	Information Technology Law	2	0	0	4	S.ECZ	Philosophy of Science	2	0	0	4

THIRD YEAR

COMPULSORY COURSES

Spring (5th Semester)					Summer (6th Semester)						
Code	Course Title	T	U	P	ECTS	Code	Course Title	T	U	P	ECTS
Z.ECZ3013	Pharmacology-II	2	0	0	3	Z.ECZ3016	Pharmacology-III	2	0	0	3
Z.ECZ	Pharmaceutical Chemistry-I	2	0	0	4	Z.ECZ	Pharmaceutical Chemistry-II	2	0	0	3
Z.ECZ	Pharmaceutical Chemistry-I Lab.	0	0	3	2	Z.ECZ	Pharmaceutical Chemistry-II Lab.	0	0	3	2
Z.ECZ	Pharmacognosy-I	2	0	0	3	Z.ECZ	Pharmacognosy-II	2	0	0	3
Z.ECZ	Pharmacognosy-I Lab.	0	0	3	2	Z.ECZ	Pharmacognosy-II Lab.	0	0	3	2
Z.ECZ	Pharmaceutical Technology-I	3	0	0	4	Z.ECZ	Pharmaceutical Technology-II	3	0	0	3
Z.ECZ	Pharmaceutical Technology-I Lab.	0	0	3	2	Z.ECZ	Pharmaceutical Technology-II Lab.	0	0	3	2
Z.ECZ	Clinical Biochemistry	2	0	0	2	Z.ECZ	Public Health	2	0	0	2
	Elective Course (Semester 5)	2x2	0	0	8	Z.ECZ	Internship-II	0	0	0	2
							Elective Course (Semester 6)	2x2	0	0	8
Total ECTS					30	Total ECTS					30

Summer Term: Internship-II (Free Pharmacy or Hospital Pharmacy; 6 weeks / 30 business days)

ELECTIVE COURSES

Spring (5th Semester)					Summer (6th Semester)						
S.ECZ3009	Metabolic Relations and Regulation	2	0	0	4	S.ECZ3002	Free Radicals and Antioxidants	2	0	0	4
S.ECZ	Lipids and Lipoproteins	2	0	0	4	S.ECZ3022	Drug Analysis by Electrochemical Methods	2	0	0	4
S.ECZ	Nutraceuticals and Food Supplements	2	0	0	4	S.ECZ3018	Fundamental Concepts in Drug Development	2	0	0	4
S.ECZ	Spectroscopic Methods in Drug Analysis	2	0	0	4	S.ECZ	Structure Determination Applications in Pharmaceuticals	2	0	0	4
S.ECZ3019	Organic Synthesis and Reaction Mechanism	2	0	0	4	S.ECZ	Macromolecular Targets in Drug Design	2	0	0	4
S.ECZ	Drug Development from Natural Resource	2	0	0	4	S.ECZ3014	Phytotherapy	2	0	0	4
S.ECZ	Medicinal Teas	2	0	0	4	S.ECZ	Research Techniques in Pharmacology	0	2	0	4
S.ECZ	Pharmacogenomics: Causes of Drug Response Variations	2	0	0	4	S.ECZ	Drug Metabolism	2	0	0	4
S.ECZ	Cooperative Principles and Practices	2	0	0	4	S.ECZ	Polymers and Their Use in Drug Delivery Systems	2	0	0	4
S.ECZ	Law of Health	2	0	0	4	S.ECZ	Leadership and Professional Development in Pharmacy	2	0	0	4
S.ECZ	Photography and Drama	2	0	0	4	S.ECZ	Pharmacy in Turkish and World Literature	2	0	0	4
S.ECZ	Arts and Pharmacy	2	0	0	4						

FOURTH YEAR

COMPULSORY COURSES

Spring (7th Semester)					Summer (8th Semester)						
Code	Course Title	T	U	P	ECTS	Code	Course Title	T	U	P	ECTS
Z.ECZ4009	Pharmacology-IV	2	0	0	3	Z.ECZ	Pharmaceutical Chemistry-IV	3	0	0	4
Z.ECZ	Pharmaceutical Chemistry-III	2	0	0	3	Z.ECZ	Pharmaceutical Chemistry-IV Lab.	0	0	3	2
Z.ECZ	Pharmaceutical Chemistry-III Lab.	0	0	3	2	Z.ECZ	Pharmaceutical Technology-IV	3	0	0	3
Z.ECZ	Pharmacognosy-III	2	0	0	3	Z.ECZ	Pharmaceutical Technology-IV Lab.	0	0	3	2
Z.ECZ	Pharmacognosy-III Lab	0	0	3	2	Z.ECZ	Pharmaceutical Toxicology-II	2	0	0	3
Z.ECZ	Pharmaceutical Technology-III	3	0	0	3	Z.ECZ	Pharmaceutical Toxicology-II Lab	0	0	3	2
Z.ECZ	Pharmaceutical Technology-III Lab.	0	0	3	2	Z.ECZ	Pharmaceutical Care-II	3	0	0	4
Z.ECZ	Pharmaceutical Toxicology-I	2	0	0	3	Z.ECZ	Pharmaceutical Care-II Practice	0	3	0	2
Z.ECZ4023	Pharmaceutical Care-I	2	0	0	3	Z.ECZ	Pharmacotherapy	2	0	0	2
Z.ECZ	Pharmaceutical Legislation and Management	2	0	0	2	Z.ECZ	Internship-III	0	0	0	2
	Elective Course (Semester 7)	1x2	0	0	4		Elective Course (Semester 8)	1x2	0	0	4
Total ECTS					30	Total ECTS					30

Summer Term: Internship-III (Free Pharmacy or Hospital Pharmacy; Pharmaceutical manufacturing plant, medical equipment manufacturing plant, cosmetics manufacturing plant and/or R&D centers related to these production areas; 6 weeks / 30 business days)

T: Theoretical, P: Practice

ELECTIVE COURSES

Spring (7th Semester)						Summer (8th Semester)					
S.ECZ	Separation Methods and Chromatography in Drug Analysis	2	0	0	4	S.ECZ4022	Hormone Biochemistry	2	0	0	4
S.ECZ	Evaluation of Biochemical Test Results	2	0	0	4	S.ECZ	Basic Concepts in Biotechnology	2	0	0	4
S.ECZ	Stereochemistry in Drug Activity	2	0	0	4	S.ECZ	Diagnosis and Determination of Impurities in Pharmaceuticals	2	0	0	4
S.ECZ4001	Use of Medicines and Medicinal Products in Special Situations	2	0	0	4	S.ECZ	Analytical Validation in Drug Analysis	2	0	0	4
S.ECZ4015	Drug Interactions	2	0	0	4	S.ECZ	Derivatization of Natural Source Compounds	2	0	0	4
S.ECZ	Rational Drug Use	2	0	0	4	S.ECZ4000	Drug Safety and Pharmacovigilance	2	0	0	4
S.ECZ	Rare Diseases and Orphan Drugs	2	0	0	4	S.ECZ	Evidence-Based Pharmacy Practices	2	0	0	4
S.ECZ4011	Poisonous Plants and Natural Poisons	2	0	0	4	S.ECZ	Bioavailability and Clinical Pharmacokinetics	2	0	0	4
S.ECZ4021	Environmental and Industrial Toxicology	2	0	0	4	S.ECZ	Pharmaceutical Care in Oncological Diseases	2	0	0	4
S.ECZ	Agricultural and Veterinary Medicines, Dosage Forms and Formulations	2	0	0	4	S.ECZ	Drug and Substance Abuse, Doping	2	0	0	4
S.ECZ	Natural Cosmetics and Dermocosmetics	2	0	0	4	S.ECZ4012	Phytopharmaceuticals	2	0	0	4
S.ECZ4029	Entrepreneurship and Innovation in Pharmacy	2	0	0	4	S.ECZ4006	Radiopharmaceuticals	2	0	0	4
S.ECZ	Professional English	2	0	0	4	S.ECZ	Pharmaceutical Licensing and Patent	2	0	0	4

FIFTH YEAR

COMPULSORY COURSES

Spring (9th Semester)						Summer (10th Semester)							
Code	Course Title	T	U	P	ECTS	Code	Course Title	T	U	P	ECTS		
Z.ECZ	Research Project Lesson-I	2	8	0	8	Z.ECZ	Research Project Lesson-II	2	8	0	20		
Z.ECZ	Graduation Internship-I	1	11	0	6	Z.ECZ	Graduation Internship-II	1	15	0	10		
	Elective Course (Semester 9)	4x2	0	0	16								
Total ECTS						30	Total ECTS						30

ELECTIVE COURSES

Spring (9th Semester)

Pharmacist of Pharmacy					
S.ECZ5023	Pharmacy Services and Pharmacy Management	2	0	0	4
S.ECZ	Accounting in Pharmacy	2	0	0	4
S.ECZ5029	Family planning	2	0	0	4
S.ECZ5031	Pharmacoeconomics and Pharmacoepidemiology	2	0	0	4
S.ECZ5015	Biomedical Products and Devices	2	0	0	4
S.ECZ	Food Toxicology	2	0	0	4
S.ECZ	Aromatherapy	2	0	0	4
S.ECZ	Magistral Drug	2	0	0	4
Pharmacist of Hospital Pharmacy					
S.ECZ5013	Tissue Biochemistry	2	0	0	4
S.ECZ5037	Clinical Trials and the Pharmacist's Role	2	0	0	4
S.ECZ5019	Clinical Toxicology	2	0	0	4
S.ECZ	Geriatric Pharmacotherapy	2	0	0	4
S.ECZ	Pediatric Pharmacotherapy	2	0	0	4
S.ECZ	Forensic Pharmacy	2	0	0	4
S.ECZ	Drug Analysis in Biological Samples	2	0	0	4
Pharmacist of Industry					
S.ECZ	Combined Analytical Methods in Drug Analysis	2	0	0	4
S.ECZ	Molecular Modeling in Medicinal Chemistry	2	0	0	4

S.ECZ	Modern Methods Used in Drug Synthesis	2	0	0	4
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S.ECZ5009	Plant Tissue Culture in Pharmacy	2	0	0	4
S.ECZ5043	Folk Medicine Research Techniques	2	0	0	4
S.ECZ	Good Manufacturing and Good Laboratory Practices in the Pharmaceutical Industry	2	0	0	4
S.ECZ5025	Drug Delivery Systems	2	0	0	4
S.ECZ5035	Pharmaceutical Production Technologies and Quality Security	2	0	0	4
S.ECZ5033	Vaccine Production and Vaccination	2	0	0	4
S.ECZ	Pharmaceutical Biotechnology Applications, Related Products and Biosimilars	2	0	0	4
S.ECZ	Research and development (R&D) and Scale-up in Pharmaceutical Manufacturing	2	0	0	4
Social Elective Courses					
S.ECZ5003	Individual and Social Responsibility in Disasters and Epidemics	2	0	0	4
S.ECZ5041	Urban Consciousness Trabzon History and Culture	2	0	0	4
S.ECZ	General Psychology	2	0	0	4
S.ECZ	Non-Governmental Organizations and Social Responsibility Awareness	2	0	0	4
S.ECZ	Health Sector and Media Communication	2	0	0	4
S.ECZ	Environmental Health	2	0	0	4
S.ECZ	Medicinal Plants in Art and History	2	0	0	4
S.ECZ	Sign Language	2	0	0	4
S.ECZ	Music Through the Ages	2	0	0	4
					ECTS
Total Compulsory Courses Required to Complete Five Years of Undergraduate Studies					252
Total Elective Courses Required to Complete Five Years of Undergraduate Studies					48
Total Courses Required to Complete Five Years of Undergraduate Studies					300

T: Theoretical, P: Practice