



**YOZGAT BOZOK UNIVERSITY FACULTY OF ARTS AND SCIENCES**  
**CHEMISTRY DEPARTMENT COURSE PLAN**

Course Code	Course Title	Semester	Course Type (C/E)	T+A+L (Time/Week)	Credit	ECTS	Course Language
KİM711	Pharmaceutical Chemistry	1-2	E	2+0+0		4	Turkish

**COURSE INFORMATION**

<b>Course Catalog Description (Content)</b>	Introduction to pharmaceutical chemistry and basic concepts. Active drug concept. Classification of drugs. Naming of drugs. Synthesis of drugs. Medication side effects. Receptors and drug-receptor interactions. Structure-activity relationships. Resolution-partition coefficient. Acid-base properties and ionization. Bioisostere. Drug metabolism. Instrumental techniques used in drug analysis. Antibiotics, synthesis and properties of anesthetic compounds. Synthetic analgesic drugs. Drug groups used in treatment: Drugs that affect the peripheral nervous system, drugs that affect the autonomic nervous system, cancer drugs, antiallergics, vitamins. Drug design and new drug development.
<b>The Aim of the Course</b>	The aim of this course is to give general information about the sources, production techniques and analysis of drugs used from past to present.
<b>Course Level</b>	Bachelor degree
<b>Course Language</b>	Turkish
<b>Teaching method</b>	(X) Formal ( ) Online ( ) Mixed/Hybrid
<b>Teaching Staff of the Course</b>	Prof. Dr. Mustafa SAÇMACI
<b>Prerequisite Course(s) of the Course</b>	
<b>Learning Outcomes from the Course</b>	<ol style="list-style-type: none"><li>1. Have knowledge about the definition of the drug, the chemistry of the drug, the form of the drug and the mechanism of action of the drug.</li><li>2. Learns the biological and chemical properties and structure-activity relationships of drugs.</li><li>3. Gains knowledge about classification, nomenclature of drugs and synthesis of drug active ingredients.</li><li>4. Learns instrumental techniques used in drug analysis.</li><li>5. Have information about the metabolism of the active ingredients of the drug and the ways of metabolism of the drug.</li></ol>

**COURSE CONTENT**

Week	Theory	Practice/Laboratory
1	Drug definition and sources	
2	Historical development of drugs	
3	General information about drugs	
4	Classification of drugs	
5	Drug design and new drug development	
6	Production techniques of drugs	
7	Gravimetric analyzes of drugs	
8	Titrimetric analysis of drugs	
9	Instrumentation analysis of drugs	
10	Instrumentation analysis of drugs	
11	Pharmaceutical quality control tests	

12	Drug safety	
13	Pharmaceutical industry	
14	Pharmaceutical industry in Turkey	
15	Final Exam	

### Course Learning Resources

1. Principles of Organic Medicinal Chemistry, Prof. Dr. Rama Rao Nadendla, New Age International (P) Limited, Publishers, New Delhi, ISBN (13) : 978-81- 224-2485-0, 2005, 331 pp.
2. Farmasötik ve Medisinal Kimya Ders Kitabı, (Yapı Etki İlişkileri), Doç. Dr. Ningur Noyanalpan, Ankara Üniversitesi Eczacılık Fakültesi Yayınları No: 49, Ankara, 1978.
3. A study on cancer and its drugs with their molecular structure and mechanism of action: A Review Priyanka Sonker, Ashish Kumar Tewari, Shail Kumar Chaube , Ranjeet Kumar , Vishal Prasad Sharma , Akhilesh Sonker, Priyanka Yadav, World J Pharm Sci 2018; 6(7): 13-34.

### ASSESSMENT CRITERIA

Work Activities During the Semester	Number	Contribution
Homework	1	%30
Practice		
Forum/ Discussion Application		
Short Exam (Quiz)	2	%35
Ratio Of Semester Studies To Semester Success (%)		%40
Ratio of Final to Success (%)	1	%60
Total		%100

### COURSE WORKLOAD TABLE

Activity	Total Weeks	Duration (Weekly Hours)	Total Workload
Theory	14	2	28
Practice			
Forum/ Discussion Application			
Reading	14	2	28
Internet Scanning, Library Study	14	2	28
Material Design, Application			
Report Preparation			
Presentation Preparation			
Presentation			
Final Exam	1	2	2
Preparation for the Final Exam	3	6	18
Other(s) (Specify: ... ..)			
Total Workload			
Total Workload / 25 (s)			104/25
ECTS Credits of the Course			104/25 $\cong$ 4
Note: The workload of the course will be determined by the instructor on a per-course basis.			

### PROGRAM LEARNING OUTPUTS CONTRIBUTION LEVELS

No	Program Learning Outputs	1	2	3	4	5
1	Gains extensive knowledge about the basic chemical properties of matter and uses this knowledge in daily life, industrial scale, and practical chemistry and shares them with the society.				X	

2	Performs experiments, collects data, interprets, evaluates results, defines problems parallel to current technological developments, produces solutions against problems encountered in the laboratory.		X			
3	Calculates and processes chemical information and data.			X		
4	Applies her/his knowledge and understanding of chemistry to the solution of unconventional qualitative and quantitative problems.				X	
5	Defines and comprehends chemical concepts and theories in Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Biochemistry.				X	
6	Can conduct research in the light of scientific data on any subject in the field of chemistry.					X
7	Writes, presents, discusses scientific material, and presents it orally to a knowledgeable audience.			X		
8	Brings a chemical approach to the solution of environmental problems, makes environmental analyzes and reports.		X			
9	Knows a foreign language at a level to read and understand the basic terms and processes of the chemist profession.			X		
10	Can use computer software and information and communication technologies at the level required by the field.				X	
11	Adapts and transfers the knowledge gained in the field to secondary education.			X		
12	Apart from the field of chemistry, she/he gains knowledge in different branches of science that she feels close to.				X	
13	Carries out a study independently, makes group work and gains the awareness of taking responsibility.				X	
14	They can develop a positive attitude towards lifelong learning and constantly renew their professional knowledge and skills.				X	
15	Have sufficient awareness of the universality of social rights, social justice, quality culture and protection of cultural values, environmental protection, occupational health and safety.			X		

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