**BİRUNİ UNİVERSİTY**

**“The Future of Science”**

**FACULTY OF PHARMACY**

**…Pharmaceutical and Medicinal Chemistry….. DEPARTMENT**

 **COURSE INFORMATION PACKAGE**

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| **Course Code** | **Course optic Code**  |  **Theory****hours/week** | **Application****hours/week** | **Credit** | **ECTS** |
|  **…ECZ339..** |  |  .....4..... | …. |  ....4... |  **...4.....** |
| **Course Name** | **Pharmacology I** |
| **Semester** | **2016-2017 Fall** |
| **Course Type** | **Obligatory**  |
| **Course Language** | **Turkish** |
| **Prequisites** | **Physiology** |
| **Mode of Delivery** | **In class, interactive.** |
| **Disabled Students** | **Disabled students, they need information about their own status submitted to the faculty may request the provision of necessary convenience.**  |
| **Instructor(s)** | **Assist. Prof. Dr. Güldem Mercanoğlu** |
| **Course Assistant** | **None** |
| **Course Objective** | This course is designed to improve learners’ ability understand 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 and anti-parasitic and different chemotherapy mechanisms. |
| **Teaching Methods:**  | 1: Lecture, 2: Question-Answer, 3: Discussion, 4: Demonstration, 5: Study Group, 6: Brain Storming, 7: Case Study, 8: Self Study |
| **Assessment Methods:** | A: Pre- and Post-Testing, B:Exam, C: Homework Assignment, D: Performance Task |
| **Learning Outcomes** | Upon completion of this course, the student will be able to:1. understand pharmaceutical dosage forms, drug application routes; the feature and differences between application routes.
2. understand the processes related to drug pharmacokinetics and pharmacodynamics; drug side effects, toxic effects and drug addiction.
3. explain the relationship between concentration-time and dose-response.
4. explain neuro- chemical properties of the autonomic nervous system, autonomic nervous system diseases and drugs used for these diseases.
5. explain basic mechanisms that regulate cardiovascular system, drugs used in the treatment of cardiovascular system diseases and distinguish indications and contraindications.
6. explain chemotherapeutic agents, their mechanisms and distinguish indications between side effects and contraindications.
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|  **Week** **1.****2.****3.****4.****5.****6.****7.** **8.****9.****10.****11.****12.****13.****14.****15.****16.** | **Course Contents and Learning Activities** Introduction to Pharmacology, General Concept, Pharmacokinetics-absorption Pharmacokinetics-distribution, metabolism and eliminationPharmacokinetics-pharmacokinetic models, time-concentration graphs, bioavailability Pharmacodynamics-the effects of drugs, factors altering drug effects, toxic effects of drugs, drug interactionsPharmaceutical Biotechnology Concept and Drug Design Introduction to autonomic pharmacology, neurochemical behaviour of autonomic nervous systemDrug Affecting Cholinergic NeurotransmissionDrugs Affecting Adrenergic NeurotransmissionCardio-Vascular System Pharmacology-Drugs Used in the Treatment of Angina and Antiarrhythmic DrugsCardio-Vascular System Pharmacology-Antihypertensive and Hypolipidemic Drugs ***Midterm,*** Cardio-Vascular System Pharmacology-AnticoagulantsCardio-Vascular System Pharmacology-Anti-thrombolytic and AntithromboticChemotherapeutic Agents-Antibiotics and Antimicrobial AgentsDrugs used in the treatment of tuberculosis, Antifungal, Antimicobacterial and Antiparasitic DrugsAntiviral Agents***,*** Anticancer Drugs |

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| **Assessment Methods**  | **Number** | Percentage % |
| **Attendance(a)** | 16 | 10 |
| **Laboratory** | 0 | 0 |
| **Application** | 0 | 0 |
| **Field Activities** | 0 | 0 |
|  **Specific Practical Training**  | 0 | 0 |
| **Assingments and Pre- Post-tests** | 17 | 20 |
| **Presentation** | 1 | 5 |
| **Projects** | 0 | 0 |
| **Seminar** | 0 | 0 |
| **Midterm exam** | 1 | 25 |
| **Final exam** | 1 | 40 |

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| **Textbook/****References** |  ***Different texts from various sources*** |
|  | 1. Kayaalp, S.O. ”Akılcı Tedavi Yönünden Tıbbi Farmakoloji”, Ankara, pelikan Yayınları, 2012
2. Goodman & Gilman “The Pharmacological Basis of Therapeutics”,The McGraw-Hill Company, 2006
3. Katzung, B. “Pharmacology” Appleton  Lang, 2001.
4. Howland RD, Mycek MJ. “Lipincott’s Illustrated Reviews-Pharmacology “ 6th ed, 2015.
5. Silbernagl S, Lang F. “Color Atlas of Pharmacology” 3rd ed. Thieme, 2005.
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| No | **Competencies of Pharmacy Program** | Katkı |
| 1 | 2 | 3 | 4 | 5 |
| 1 | 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. |  |  | X |  |  |
| 2 | Communicates effectively with community members, health care professionals, policy makers and administrators to transfer informations of professional pharmacy applications and usage of pharmaceutical products. |  |  |  | X |  |
| 3 | In the frame of pharmaceutical care and clinical applications, evaluates accuracy and cost-effectiveness of medication treatment, solve the problems and give decisions. |  |  | X |  |  |
| 4 | Acquire the current and evidence-based information by using relevant information technologies to apply the rational use of natural, synthetic and biotechnological drugs and give education, information and consultation to community members, other health-care providers and constitutions.  |  |  | X |  |  |
| 5 | Experienced the basic and professional knowledge to manage, apply and make decision of the entire process related to design, handling and consumption of natural, synthetic and biotechnological pharmaceuticals. |  |  |  |  | X |
| 6 | Possess cultural competency and consciousness to design, implement, and monitor patient-oriented pharmacy practice for the improvement of the quality of heath care by making joint cooperation. |  |  |  |  | X |
| 7 | Raise consciousness to application of modern scientific and technological developments in pharmaceutical field by the awareness of lifelong learning. |  |  |  | X |  |
| 8 | Experienced to research and development, quality control, good manufacturing practices and has knowledge to manage and apply the license process of pharmaceutical products.  |  |  | X |  |  |
| 9 | As a pharmacist with the universal norms, has foreign language proficiency to follow professional developments, conduct research and developments and competent to communicate patients and other healthcare professionals. | X |  |  |  |  |
| 10 | Gather patient histories, determine needs and priorities of patients, prevent individual diseases, know, define and apply the planning and management process of treatment.  | X |  |  |  |  |

WORKLOAD AND ECTS CALCULATION

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| **Activities** | **Number** | **Duration (hour)** | **Total Work Load** |
| **Course Duration (x16)** |  16 |  4 | 64  |
| **Laboratory** |  |  |  |
| **Application** |  |  |  |
| **Specific practical training** |  |  |  |
| **Field activities** |  |  |  |
| **Presentation / Seminar Preparation** |  |  |  |
| **Project** |  |  |  |
| **Homework assignment** | 5 | 1 | 5 |
| **Pre-post Test (Study duration)** | 5 | 2 | 10 |
| **Midterms (Study duration)** | 1 | 10 | 10 |
| **Final Exam (Study duration)**  | 1 | 10 | 10 |
| Total Workload | **28** | **26** | **99** |
| **ECTS Credit of Course (Total WorrkLoad/25)** |  |  | **3.96** |