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| **MEDICAL PHARMACOLOGY DEPARTMENT MASTER’S DEGREE PROGRAM - Courses – ECTS Credits (Tıbbi Farmakoloji YL) M Sc** | | | | | |
| FALL SEMESTER | | | | | |
| Course Code | Course Name | ECTS | T+P+L | C/E | Language |
| 521703201 | [UNWANTED EFFECTS OF DRUGS](#DERS521701201) | 7,5 | 3+0+0 | ELECTIVE | TURKISH |
| 521703202 | [DRUGS OF ABUSE AND DEPENDENCE](#DERS521701202) | 7,5 | 3+0+0 | ELECTIVE | TURKISH |
| 521703203 | [PHARMACOKINETICS](#DERS521701203) | **7,5** | 1+4+0 | ELECTIVE | TURKISH |
| 521703204 | [EXPERIMENTAL PHARMACOLOGY](#DERS521701204) | 7,5 | 1+4+0 | **COMPULSORY** | TURKISH |
| 521703205 | [TREATMENT OF ACUTE POISONING](#DERS521701205) | **7,5** | 3+0+0 | ELECTIVE | TURKISH |
| 521703206 | [COMPUTER USING IN PHARMACOLOGY](#DERS521701206) | **7,5** | 2+2+0 | ELECTIVE | TURKISH |
| 521703207 | [GENERAL PHARMACOLOGY](#DERS521701207) | **7,5** | 3+0+0 | **COMPULSORY** | TURKISH |
| 521705208 | [METHODS OF INSTRUMENTAL ANALYSIS IN PHARMACOLOGY](#DERS521701208) | **5** | 1+0+2 | ELECTIVE | TURKISH |
| 521703400 | SEMINAR | 7,5 | 0+1+0 | COMPULSORY | TURKISH |
| 521701700 | SPECIALIZATION FIELD COURSE | 5 | 3+0+0 | COMPULSORY | TURKISH |
| 521701200 | MASTER'S THESIS | 25 | 0+1+0 | COMPULSORY | TURKISH |
| 520111103 | RESEARCH METHODS AND PUBLISHING ETHICS\* | 7,5 | 3+0+3 | COMPULSORY | TURKISH |
|  | |  |  |  |  |
| SPRİNG SEMESTER | | | | | |
| 521704201 | [PHARMACOLOGY OF RESPIRATORY SYSTEM](#DERS521702201) | 7,5 | 3+0+0 | ELECTIVE | TURKISH |
| 521704202 | [PHARMACOLOGY OF](#DERS521702202)  [GASTROINTESTINAL SYSTEM](#DERS521702202) | **7,5** | 3+0+0 | ELECTIVE | TURKISH |
| 521704203 | [TOXICOLOGY](#DERS521702203) | **7,5** | 3+0+0 | ELECTIVE | TURKISH |
| 521704204 | [TRANSMISSION MECHANISMS](#DERS521702204)  [IN NERVOUS SYSTEM](#DERS521702204) | **7,5** | 3+0+0 | ELECTIVE | TURKISH |
| 521704205 | [CLINICAL PHARMACOLOGY](#DERS521702205) | **7,5** | 2+2+0 | ELECTIVE | TURKISH |
| 521704206 | [THE PRINCIPLES OF DRUG ACTIONS](#DERS521702206) | 7,5 | 3+0+0 | **COMPULSORY** | TURKISH |
| 521704207 | [THERAPEUTİC DRUG MONITORING (TDM)](#DERS521702207) | **7,5** | 3+0+0 | ELECTIVE | TURKISH |
| 521706208 | [RATIONAL DRUG USE](#DERS521706208) | 5 | 2+0+0 | ELECTIVE | TURKISH |
| 521706209 | [PHARMACOLOGICAL BASIS OF DIABETES MELLITUS](#DERS521702209) | **5** | 2+0+0 | ELECTIVE | TURKISH |
| 521706210 | [PHARMACOLOGICAL PRINCIPLES OF INFLAMMATION](#DERS521702210) | 5 | 2+0+0 | ELECTIVE | TURKISH |
| 521703400 | SEMINAR | 7,5 | 0+1+0 | COMPULSORY | TURKISH |
| 521701700 | SPECIALIZATION FIELD COURSE | 5 | 3+0+0 | COMPULSORY | TURKISH |
| 521701200 | MASTER'S THESIS | 25 | 0+1+0 | COMPULSORY | TURKISH |
| 520111103 | RESEARCH METHODS AND PUBLISHING ETHICS\* | 7,5 | 3+0+3 | COMPULSORY | TURKISH |
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| **COURSE CODE:** | **521703201** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | UNWANTED EFFECTS OF DRUGS | | | | | |
| **INSTRUCTOR NAME** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
| **Prof.Dr. Fatma Sultan KILIÇ** | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **x** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 3 |  |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT SHORT COURSE CONTENT** | | | Unwanted effects may occur when the drugs not used at appropriate patient, at appropriate disease, appropriate duration and dose. Unwanted pharmacological effects can be classified as lean toxic effects, functional, biochemical, structural toxic effects and Special toxic effects; mutagenic, teratogenic, carcinogenic toxic effects. | | | | |
| **COURSE AIMS** | | | 1 - To learnwhat the toxic effects of the drugsare.  2. To learnwhat the lean toxic effects of the drugsare.  3. To learnwhat the special toxic effectsof the drugsare.  4. To learn what drug allergy is.  5. To learn what theinstability reactions are.  6. To learn what the idiosencratic reactions are.  7. To learn how the drug toxicity measured experimentally.  8. To learn what the therapeutic index is. | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To ensure the use of drugs with the least damage. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | During this course, students will be encouraged to think about the benefits of med medicines as well as their possible side effects. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.   1. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri. 2. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri. 3. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition   5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | |  | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Gereral toxic effects |
| 2 |  | Special toxic effects, mutogenetic effects |
| 3 |  | Teratogenetic effects |
| 4 |  | Classify of teratogenetic risks |
| 5 |  | Cancerogenetic effects |
| 6 |  | Cancerogenetic drugs |
| 7 |  | Toxic side effects which depend on genetic differences |
| 8 |  | Mid-term exam |
| 9 |  | Drug allergy |
| 10 |  | Types of allergic reactions |
| 11 |  | Hypersecitivity reactions, Idiosyncratic reactions |
| 12 |  | Experimental evaluate of drug toxicity, Therapeutic index |
| 13 |  | Prevent of terotogenetic effects in humans |
| 14 |  | Protect against the cancerogenetic effects |
| 15 |  | Safe/toxic ratio |
| 16 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | General toxic effects |  |  | **X** |
| LO 2 | Special toxic effects, mutogenetic effects |  |  | **X** |
| LO 3 | Teratogenetic effects |  |  | **X** |
| LO 4 | Classify of teratogenetic risks |  |  | **X** |
| LO 5 | Cancerogenetic effects |  |  | **X** |
| LO 6 | Cancerogenetic drugs |  |  | **X** |
| LO 7 | Toxic side effects which depend on genetic differences |  |  | **X** |
| LO 8 | Drug allergy |  |  | **X** |
| LO 9 | Types of allergic reactions |  |  | **X** |
| LO 10 | Hypersecitivity reactions, Idiosyncratic reactions |  |  | **X** |
| LO 11 | Experimental evaluate of drug toxicity Therapeutic index |  |  | **X** |
| LO 12 | Prevent of terotogenetic effects in humans |  |  | **X** |
| LO 13 | Protect against the cancerogenetic effects |  |  | **X** |
| LO 14 | Safe/toxic ratio |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Fatma Sultan KILIÇ  **Sign** | **Date:** 23.3.2025 |

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| **COURSE CODE:** | **521703202** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | DRUGS OF ABUSE AND DEPENDENCE | |  | | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Fatma Sultan KILIÇ** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 3 |  |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | The use of medicines outside of medical indications and, in particular, the use of medicines on one's own initiative or on the advice of unauthorized persons when not required by a physician, is called drug abuse or non-medical drug use.  Drug abuse (misuse of a drug) and misuse of a drug (in other words, misuse of a drug) are two different things. Medication misuse includes situations where those who are supposed to use it correctly, i.e. physicians, health personnel administering medication under the supervision of a physician, and patients taking medication according to the physician's advice and description, use the medication for the wrong indication, at the wrong dose, by the wrong route, at the wrong intervals, for too short or too long a period of time, or similar situations  Psychologic dependence, physiologic dependence, personal land social damage in drug dependence, types of drug of abuse and dependence (opioids, alcohol, barbiturates, stimulants, tobacco, cocaine, marijuana, LSD) | | | | |
| **COURSE AIMS** | | | Learn, types of drug of abuse and dependence, potency of psychologic and physiologic dependence of drugs and action mechanism | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | 1- Learning what drug abuse is.  2- Learning what drug addiction is.  3- Learning the concepts of psychological and physical addiction.  4- Learning the types of drug abuse and addiction (morphine, alcohol, barbiturates, tobacco, amphetamines, cocaine, marijuana, LSD). | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | To have knowledge about drug addiction and abuse | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcı Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.   1. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri. 2. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri. 3. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition   5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular to Clinical: Brody, Larner, Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | |  | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Reinforcement and predisposition in drug dependence |
| 2 |  | Psychologic and physiologic dependence |
| 3 |  | Types of drugs of abuse and dependence, opioids |
| 4 |  | Alcohol |
| 5 |  | Barbiturates |
| 6 |  | Tobacco |
| 7 |  | Mid-term exam |
| 8 |  | Cocaine |
| 9 |  | Marijuana |
| 10 |  | Hallucinogens |
| 11 |  | Khat |
| 12 |  | Inhalants |
| 13 |  | Potency of dependence of drugs |
| 14 |  | Measures of saved drugs dependence |
| 15 |  | Personal evaluation in drug dependence |
| 16 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Reinforcement and predisposition in drug dependence |  |  | **X** |
| LO 2 | Psychologic and physiologic dependence |  |  | **X** |
| LO 3 | Types of drugs of abuse and dependence, opioids |  |  | **X** |
| LO 4 | Alcohol |  |  | **X** |
| LO 5 | Barbiturates |  |  | **X** |
| LO 6 | Tobacco |  |  | **X** |
| LO 7 | Cocaine |  |  | **X** |
| LO 8 | Marijuana |  |  | **x** |
| LO 9 | Hallucinogens |  |  | **X** |
| LO 10 | Khat |  |  | **X** |
| LO 11 | Inhalants |  |  | **X** |
| LO 12 | Potency of dependence of drugs |  |  | **X** |
| LO 13 | Measures of saved drugs dependence |  |  | **X** |
| LO 14 | Personal evaluation in drug dependence |  |  | **x** |

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| **INSTRUCTOR NAME**  Prof. Dr. Fatma Sultan KILIÇ  **Sign** | **Date**  23.3.2025 |

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| **COURSE CODE:** | **521703203** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | PHARMACOKINETICS | |  | | | |
| **INSTRUCTOR NAME**  Ass. Prof. Dr. Mahmut ÖZDEMİR | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 1 | 4 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | The course will examine processes of absorbtion, distribution and elimination of drugs as these relate to how rapidly, in what concentration and for how long the drug will appear at the target organ | | | | |
| **COURSE AIMS** | | | To be able to determine the dose of a drug that most closely achives a desired beneficial effect with minimal adverse effects in a selected patient | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To be able to apply pharmacokinetic principles to achieve improvement in therapeutic efficacy and reduction in toxicity | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Students learn about the pharmacokinetics; absorption, distribution, biotransformation, excreation. | | | | |
| **TEXTBOOK** | | | 1. Atkinson, Principles of Clinical Pharmacology | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular to Clinical: Brody, Larner, Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Clinical Pharmacokinetics |
| 2 |  | Clinical Pharmacokinetics |
| 3 |  | Drug absorbtion and bioavalibility |
| 4 |  | Drug absorbtion and bioavalibility |
| 5 |  | Effect of liver disease on pharmacokinetics |
| 6 |  | Effect of liver disease on pharmacokinetics |
| 7 |  | Midterm examination |
| 8 |  | Effect of renal disease on pharmacokinetics |
| 9 |  | Effect of renal disease on pharmacokinetics |
| 10 |  | Pharmacokinetics in patients with renal replacement therapy |
| 11 |  | Population pharmacokinetics |
| 12 |  | Population pharmacokinetics |
| 13 |  | Compartmental analysis of drug distribution |
| 14 |  | Noncompartmental versus compartmental pharmacokinetics |
| 15 |  | Distributed models of drug kinetics |
| 16 |  | Final examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Knows the definition of pharmacokinetics |  |  | **X** |
| LO 2 | Defines absorption and knows its properties |  |  | **X** |
| LO 3 | Defines distribution and knows its properties |  |  | **X** |
| LO 4 | Defines biotransformation and knows its properties |  |  | **X** |
| LO 5 | Defines elimination and excretion and knows its properties |  |  | **X** |

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| **Lecturer**  **Ass .Prof.Dr.Mahmut ÖZDEMİR**  **Signature** | Date:26.03.2025 |

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| **COURSE CODE:** | **521703204** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | EXPERIMENTAL PHARMACOLOGY | |  | | | |
| **INSTRUCTOR NAME**  **Prof. Dr. Semra YİĞİTASLAN** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 1 | 4 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | General information about experimental animals,the organization of an experimental pharmacological research,ethical laws, principles of proper laboratory animals, manipulation of animals, routes of drug administration, methods of injection, collection of blood, methods of anesthesia, methods of euthanasia | | | | |
| **COURSE AIMS** | | | To teach the general aspects of technical information and ethical laws about laboratory animal use | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To be able to realize and plan an experimantal research by using laboratory animals | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | **Have knowledge about planning, continuing and terminating experimental animal studies** | | | | |
| **TEXTBOOK** | | | Handbook of Laboratory Animal Science, Volume 1, Essential Principles And Practices, Hau J, Van Hooster G. | | | | |
| **OTHER REFERENCES** | | | Laboratory manual for General pharmacology, Johnson DL.  Handbook of experimantal pharmacology General Pharmacology, Clark JA  Laboratory Animals in Research and Teaching: Ethics, Care, and Methods, Akins CK.  Guidlines on Handling and Training of Laboratory Animals, Animal Research &Biological Council  Başaran A., Deney Hayvanları,Nisan Kitabevi,Eskişehir. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Isolated organ bath, computer, animal housing unit | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Information of laboratory animals |
| 2 |  | Physiological characteristics and breeding technics of animals |
| 3 |  | Ethical laws |
| 4 |  | Designing an experimental study |
| 5 |  | Manipulation of rodents |
| 6 |  | Injection technics to mice and rats |
| 7 |  | Per oral drug administration technics to mice and rats |
| 8 |  | **Mid term exam** |
| 9 |  | Technics of anesthesia |
| 10 |  | Parenteral drug administration to rabbits |
| 11 |  | Technics of collecting blood |
| 12 |  | Technics of collecting urine |
| 13 |  | Separation technics of serum and plasma |
| 14 |  | Eutanasia of laboratory animals |
| 15 |  | Autopsy of laboratory animals |
| 16 |  | **Final exam** |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Learn about the methods used in experimental research. |  | **X** |  |
| LO 2 | Learn about the use of experimental animals. |  | **X** |  |
| LO 3 | Learn about planning experimental studies. |  | **X** |  |
| LO 4 | Learn about collecting materials to be examined in experimental studies. |  | **X** |  |
| LO 5 | Learn about the criteria for terminating experimental studies. |  | **X** |  |
| LO 6 | Learn about in vivo studies, in vitro studies, in situ studies, and recording systems. |  | **X** |  |

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| **INSTRUCTOR NAME**  **Prof. Dr. Semra YİĞİTASLAN**  **Sign** | **Date:** 28/04/2025 |

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| **COURSE CODE:** | **521703205** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | TREATMENT OF ACUTE POISONING | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Başar SIRMAGUL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | To teach the general aspects of acute poisoning diagnostic and treatment strategies. Furthermore, student should have at least some preliminary knowledge of pharmacology and toxicology in areas such as drug abuse, "natural" drugs and "alternative approaches", drugs and society, risk assessment and so on. | | | | |
| **COURSE AIMS** | | | The student learns about treatments for acute poisoning. | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | By the end of this module students will be able to:  1- Identification of poison-spesific measures, especially substances and doses related diagnostic parameters. General assesment and screens , additionally principles of treatment, antidotes. General and systematic toxicology  Drug and chemical poisoning  Toxicological evaluation and risk assessment  Chemical carcinogenesis and teratogenesis.  2- To be able to manage the diagnosis,classification of the effect related compound identity and successful treatment recruiments. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | The student learns about treatments for acute poisoning. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji.  2. Basic and Clinical Pharmacology: Bertram G. Katzung,  3. Toksikoloji (Akut zehirlenmelerde Tanı ve tedavi) | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Fundamentals of pharmacology & toxicology, systematic review of all major classes of drugs |
| 2 |  | Definitions; resorption , distribution and depositions of drugs in organisms pharmacodynamics |
| 3 |  | Biotransformations; action of toxins: |
| 4 |  | Toxicokinetics; identification of toxicity; data banks of toxicity; |
| 5 |  | Age related toxicology |
| 6 |  | Accidental Ingestion Of Drugs and Chemicals |
| 7 |  | Monitoring and supportive care |
| 8 |  | **Mid-term Exam** |
| 9 |  | Poisonings and how they are treated |
| 10 |  | Toxic drug interactions |
| 11 |  | Effects on the systems during the poisoning process. |
| 12 |  | Treatment with drugs |
| 13 |  | Poisons and Antidots |
| 14 |  | Mutagenic and teratogenic actions of drugs |
| 15 |  | Organophosphate insecticide toxicology |
| 16 |  | Final Exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | The student learns about treatments for acute poisoning. |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Başar SIRMAGÜL  **Sign** | **Date**  22.04.2025 |

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| **COURSE CODE:** | **521703206** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | COMPUTER USINF IN PHARMACOLOGY | | | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Başar SIRMAGÜL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 2 | 2 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | A variety of computing programs have been developed for undergraduate and postgraduate teaching pharmacology Previous evidence has shown that this innovative  educational technique, either as an adjunct to the traditional teaching methods such as lectures, or as a sole teaching tool for distance education or home studies, facilitates students’ learningand improves overall study outcomes in pharmacology**.** | | | | |
| **COURSE AIMS** | | | The student learns the basics of using computers in pharmacology practice. | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | By the end of this module students will be able to:  1- Using a word processor, Using operating system, Using a web browser to view and print content on the web, Use a backup method regularly for important files, Using of the computer for work processing and spread sheet. ·Relational data base . ·Computer security and protection of personal privacy · Statistical calculation in Excel, SPSS.  2- This program provides the individual the necessary computer literacy and desktop computing skills needed to work more productively and efficiently, especially in pharmacological applications. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | The student learns the basics of using computers in pharmacology practice. | | | | |
| **TEXTBOOK** | | | Medical Informatics: Computer Applications in Health Care and Biomedicine | | | | |
| **OTHER REFERENCES** | | | 1- Medical Informatics: Computer Applications in Health Care and Biomedicine  2- Edward H. Shortliffe ,Lawrence M.Fagan  3- Paket programlar ile istatistiksel veri analizi Prof.Dr.Kazım Özdamar 2004  4- SPSS ile Biyoistatistik, Prof.Dr.Kazım Özdamar 2001  5- Ohrn MA, van Oostrom JH, van Meurs WL. A comparison of traditional textbook and interactive computer learning of neuromuscular block. *Anes Anal* 1997;**84**: 657-61.  6- Timmis S, Brown KN, Gilbert MJ, Gifford L, Lloyd A, Moss SH *et al*. PCALL Review. <http://WWW.coacs.com/pccal/reviews>. May 2000.  7- de Graff JS, de Vos CJ, Steenbergen HJ. Fully automated experiments with isolated organs *in vitro*. *J Pharmacol* *Methods* 1983;**10**:113-35.  8- Goodman and Gillman’s:The Pharmacological Basis of THERAPEUTİCS, eleventh edition, 2006. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Introduction to basic concept of computers tech. |
| 2 |  | Windows and structure (hardware-software) |
| 3 |  | Word and Excell application arithmetical operators |
| 4 |  | Data collections |
| 5 |  | Data assessment techniques |
| 6 |  | Medical and pharmacological datas |
| 7 |  | Analoque to Digital coverters for biomedical datas |
| 8 |  | Mid-term exam |
| 9 |  | Pharmacological animations |
| 10 |  | Normal and pathological datas |
| 11 |  | Safety and occuracy |
| 12 |  | Introduction to SPSS |
| 13 |  | Graphs and Excell |
| 14 |  | ANOVA 1 |
| 15 |  | ANOVA 2 |
| 16 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | The student learns the basics of using computers in pharmacology practice. |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Başar SIRMAGÜL  **Sign** | **Date**  22.04.2025 |

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| **COURSE CODE:** | **521703207** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | GENERAL PHARMACOLOGY | |  | | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Bilgin KAYGISIZ** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | The fundamental objective to achieve in the lesson is to learn the basic pharmacological knowledge, as well as the sources, the application ways, the pharmacokinetics, the pharmacodynamics, and the factors altering the effects of drugs | | | | |
| **COURSE AIMS** | | | The fundamental objective to achieve in the lesson is to learn the basic pharmacological knowledge, as well as the sources, the application ways, the pharmacokinetics, the pharmacodynamics, and the factors altering the effects of drugs | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To learn the basic pharmacological knowledge. To provide suffient knowledge about the effects and advers effects and interactions of drugs which are used in both experimental and in clinical practice. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Students learn about the basic concepts of pharmacology. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcı Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular to Clinical: Brody, Larner, Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Introduction to Pharmacology |
| 2 |  | The transition of drugs through biological membranes and absorption |
| 3 |  | The application ways and absorption of drugs from application areas |
| 4 |  | The distribution of drugs |
| 5 |  | The biotransformation of drugs |
| 6 |  | The excretion and elimination kinetics of drugs |
| 7 |  | Midterm exam |
| 8 |  | The Association between dose, concentration and effect |
| 9 |  | Mechanisms of action of drugs |
| 10 |  | Receptors and the Association between drugs and receptors |
| 11 |  | The factors changing the effects of drugs |
| 12 |  | Drug interactions |
| 13 |  | Toxic effects of drugs |
| 14 |  | The methods in drug development |
| 15 |  | Semester exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Students learn about the basic concepts of pharmacology. |  |  | **X** |

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| **INSTRUCTOR NAME**  **Prof. Dr. Bilgin KAYGISIZ**  **Signature** | Date:26.03.2025 |

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| **COURSE CODE:** | **521705208** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | METHODS OF INSTRUMENTAL ANALYSIS IN PHARMACOLOGY | |  | | | |
| **INSTRUCTOR NAME**  **Prof. Dr. Semra YİĞİTASLAN** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 1 | 2 |  | 2 | 5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Basic laboratory methods and basic materials and instruments used in an ordinary hospital laboratory, pH concept and measurement, optical methods,otoanalysors, immunoassay methods, imagination methods and chromatographic methods | | | | |
| **COURSE AIMS** | | | To give the information on basic laboratory methods and the basic operational principles on the instruments commonly used in laboratory. | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | The students would learn the basic principles of laboratory technics used in laboratry, could use rationally the basic instruments and analyse the data after this course. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Learning basic laboratory techniques and being able to analyze data using basic instruments | | | | |
| **TEXTBOOK** | | | Laboratuvar Teknikleri ve Gereçleri (Anadolu Üniversitesi Yayınları No:978)(Açıkalın,E., Cingi M.İ., Erol K., Pütün. E) | | | | |
| **OTHER REFERENCES** | | |  | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | **Microscope, pH meter, ELISA reader** | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Microcopy |
| 2 |  | Basic Laboratory Methods and Materials |
| 3 |  | PH Concept and Methods of Measurement |
| 4 |  | Optical Methods,Characteristics of Light, Absorption Laws |
| 5 |  | Colorimetry, Electronic Spectroscopy,Atomic Absorption and Emission Spectroscopy |
| 6 |  | Mid-term exam |
| 7 |  | Turbidimetry and Nefelometry,Refractometry,Polarimetry |
| 8 |  | Otoanalyser |
| 9 |  | Immunoassay Methods (Radioimmunoassay and ELISA) |
| 10 |  | Imagination Methods Ultrasounography,Compuerized Tomography, Magnetic Resonance |
| 11 |  | Chromatographic Methods and Elecrophorezis |
| 12 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Learns to evaluate images under a microscope |  | **X** |  |
| LO 2 | Knows basic laboratory equipment |  | **X** |  |
| LO 3 | Can make measurements using a pH meter |  | **X** |  |
| LO 4 | Knows colorimetric and spectroscopic methods |  | **X** |  |
| LO 5 | Can make measurements using the ELISA method |  | **X** |  |

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| **INSTRUCTOR NAME**  **Prof. Dr. Semra YİĞİTASLAN**  **Sign** | **Date:28/04/2025** |

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| **COURSE CODE:** | **521704201** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | PHARMACOLOGY OF RESPIRATORY SYSTEM | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Basar SIRMAGUL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Bronchodilators and other drugs used in the treatment of asthma, antitussive agents, expectorant agents, mucolytic agents, surfactants, oxygen and other medical gases | | | | |
| **COURSE AIMS** | | | Learn, characteristics of drugs used in the treatment of respiratory diseases | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | |  | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | |  | | | | |
| **TEXTBOOK** | | | 1.Kayaalp,S.O.:Tıbbi Farmakoloji,Hacettepe Taş Kitapçılık,10.Baskı,Ankara,2002.  2.Katzung, B.G.:Basic and Clinical Pharmacology, The McGraw-Hill Companies, 2001 | | | | |
| **OTHER REFERENCES** | | | 1. Brody,T.M.:Human Pharmacology, Second Edition, 1994. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | |  | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Cough reflex and antitussive agents |
| 2 |  | Expectorant agents |
| 3 |  | Mucolytic agents |
| 4 |  | Surfactants |
| 5 |  | Pathogenesis of asthma |
| 6 |  | Beta-mimetics |
| 7 |  | Corticosteroids |
| 8 |  | Mid-term exam |
| 9 |  | Antimuscarinic agents |
| 10 |  | Theophylline |
| 11 |  | Mast cell stabilizators |
| 12 |  | Leucotrien antagonists |
| 13 |  | Clinical pharmacology of antiasthmatic agents |
| 14 |  | Oxygen and other medical gases |
| 15 |  | Occupational asthma |
| 16 |  | Other Therapies used in asthma |
| 17 |  | Drugs used in asthmatic children |
| 18 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Learn the drugs used in the treatment of respiratory system diseases and their uses. |  |  | **x** |

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| **INSTRUCTOR NAME**  Prof. Dr. Başar SIRMAGÜL | **Tarih: 04.07.2025** |

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| **COURSE CODE:** | **521704202** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | PHARMACOLOGY OF GASTROINTESTINAL SYSTEM | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Engin YILDIRIM | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Agents for treatment of peptic ulcers, laxatives and purgatives, antidiarrheal agents, emetic, antiemetic and prokinetic agents, other agents affecting gastrointestinal tract | | | | |
| **COURSE AIMS** | | | Learn, drugs used in the treatment of gastrointestinal diseases | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | Learn, agents for gastric acidity and peptic ulcers, agents for affecting gastrointestinal water flux and motility, digestans and bile acids | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Knows the pharmacokinetic and pharmacodynamic properties, indications for use, dosages, side and toxic effects of drugs used in gastrointestinal system diseases. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | |  | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Peptic ulcers |
| 2 |  | Gastric antisecretory drugs |
| 3 |  | Antacids |
| 4 |  | Other drugs (sucralfate, misoprostol, eradication of helicobacter pylorii) |
| 5 |  | Mechanism of ions transports by the small and large intestines |
| 6 |  | Laxatives and purgatives |
| 7 |  | Mid term exam |
| 8 |  | Antidiarrheal agents |
| 9 |  | Oral rehydration therapy |
| 10 |  | Emetic agents |
| 11 |  | Antiemetic and prokinetic agents |
| 12 |  | Treatment of emesis which depend on cancer chemotherapy |
| 13 |  | Digestans |
| 14 |  | Choleretic agents |
| 15 |  | Cholagogue agents |
| 16 |  | Agents for dissolve gallstones |
| 17 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Knows the pharmacokinetic and pharmacodynamic properties, indications for use, dosages, side and toxic effects of drugs used in gastrointestinal system diseases. |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Engin YILDIRIM  **Sign** | **Date**  **27.03.2025** |

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| **COURSE CODE:** | **521704203** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | TOXICOLOGY | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Basar SIRMAGUL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Principles of toxicology, air pollutants, insecticides, heavy metals, chelators, treatment of poisoning | | | | |
| **COURSE AIMS** | | | Learn, basics of toxicology, types of toxic drugs, treatment of poisoning | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | By the end of this module students will be able to:  1- Learn principles of toxicology, air pollutants, insecticides, heavy metals, chelators, treatment of poisoning.  2- Learn, the importance of toxicity drug therapy on treatment of poisoning. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | The student acquires general information about basic toxicology. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Principles of toxicology |
| 2 |  | Air pollutants |
| 3 |  | Insecticides; Chlorinated hydrocarbons |
| 4 |  | Organophosphates |
| 5 |  | Botanical insecticides |
| 6 |  | Paraquat |
| 7 |  | Mid-term exam |
| 8 |  | Lead |
| 9 |  | Arsenic |
| 10 |  | Mercury |
| 11 |  | Iron |
| 12 |  | Chelators |
| 13 |  | Drugs used for poisoning |
| 14 |  | The interaction of toxic materials |
| 15 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | The student acquires general information about basic toxicology. |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Basar SIRMAGUL  **Sign** | **Date**  22.04.2025 |

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| **COURSE CODE:** | **521704204** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | TRANSMISSION MECHANISM IN NERVOUS SYSTEM | |  | | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Semra YİĞİTASLAN** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | History of neurotransmission concept, aspect of neurohumoral transmission,synthesis, biotransformation and elimination of neurotransmitters,cholinergic transmission, cholinergic receptors, adrenergic transmission, adrenergic receptors,relationship between the nervous and endocrine systems | | | | |
| **COURSE AIMS** | | | To teach the general mechanisms of neurohumoral transmission | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | By the end of this module students will be able to:  1- Lear history of neurotransmission concept, aspect of neurohumoral transmission,synthesis, biotransformation and elimination of neurotransmitters, cholinergic transmission, cholinergic receptors, adrenergic transmission, adrenergic receptors, relationship between the nervous and endocrine systems.  2- To be able to realize the neurohumoral transmission**.** | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | To learn the concept of neurohumoral communication, neurotransmitter synthesis, biotransformation and elimination of neurotransmitters, to learn the concept of co-transmitter, to understand the interaction of CNS receptors with drugs. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1.Hardman JG, Limbird LE, Gilman AG, The Pharmacological Basis of Therapeutics,McGraw-Hill, New York, (10th ed.)2001.  2. Katzung BG,Basic and Clinical Pharmacology, ,McGraw-Hill, New York (7th ed.)2001.  3.Brody TM, Larner J, Minneman KP, Human Pharmacology Molecular to Clinical Mosby, Boston, (3 th ed.) 1998.  4.Rang HP, Dale MM, Ritter JM, Pharmacology, Churchill Livingstone, Edinburgh, (3th ed.)1995. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | barcovision | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | History |
| 2 |  | Concept of neuroregulateur (Neurotransmitter, neuromodulator, neurohormon) |
| 3 |  | Synthesis, biotransformation and elimination of acetylcholine |
| 4 |  | Cholinergic receptors |
| 5 |  | Synthesis, biotransformation and elimination of catecholamines |
| 6 |  | Adrenergic receptors |
| 7 |  | Cotransmitters |
| 8 |  | **Mid term exam** |
| 9 |  | Cholinergic transmission |
| 10 |  | Adrenergic transmission |
| 11 |  | Enteric nervous system |
| 12 |  | Nerotransmission of somatic motor nervous system |
| 13 |  | Signal transduction systems |
| 14 |  | Relationship between the nervous and endocrine systems |
| 15 |  | Relationship between the nervous and endocrine systems |
| 16 |  | **Final exam** |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Knows the concepts of neurotransmitter, neuromodulator and neurohormone |  |  | **X** |
| LO 2 | Understands the synthesis, biotransformation and elimination mechanisms of neurotransmitters |  |  | **X** |
| LO 3 | Knows the structure of receptors |  |  | **X** |
| LO 4 | Knows signal transmission systems |  |  | **X** |
| LO 5 | Knows receptor-drug interactions |  |  | **X** |

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| **INSTRUCTOR NAME**  **Prof. Dr. Semra YİĞİTASLAN**  **Sign** | Date:28/04/2025 |

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| **COURSE CODE:** | **521704205** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | CLINICAL PHARMACOLOGY | |  | | | |
| **INSTRUCTOR NAME**  Ass. Prof. Dr. Mahmut ÖZDEMIR | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 2 | 2 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Pharmacodynamics, pharmacokinetics, therapeutic evaluation, rational prescribing, official regulation of medicines social aspects like that pharmacoeconomics.Good clinical practise. | | | | |
| **COURSE AIMS** | | | Its objective is to optimise drug therapy and it is justified in so far as it is of practical using. | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | Rational , safe and effective drug therapy. Drug therapy of individual diseases.  İn use of drug,adverse reactions, ethical applications, new drug development and evaluation. | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Understanding the areas of interest in clinical pharmacology and having knowledge about preparing clinical research protocols | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1.Hardman JG, Limbird LE, Gilman AG, The Pharmacological Basis of Therapeutics,McGraw-Hill, New York, (10th ed.)2001.  2. Katzung BG,Basic and Clinical Pharmacology, ,McGraw-Hill, New York (7th ed.)2001.  3.Brody TM, Larner J, Minneman KP, Human Pharmacology Molecular to Clinical Mosby, Boston, (3 th ed.) 1998.  4.Rang HP, Dale MM, Ritter JM, Pharmacology, Churchill Livingstone, Edinburgh, (3th ed.)1995. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Discovery and developments of drugs |
| 2 |  | Preclinical studies in animals |
| 3 |  | Ethics |
| 4 |  | Pharmacological tests |
| 5 |  | Experimental therapeutics |
| 6 |  | Ethics of research in man |
| 7 |  | New drug ( ethical conduct of clinical research) |
| 8 |  | Phases of clinical development |
| 9 |  | **Exam** |
| 10 |  | Official regulatory guidelines and requırements |
| 11 |  | Therapeutic evaluation |
| 12 |  | Statistics |
| 13 |  | Therapeutic trials |
| 14 |  | Double blind-single blind etc. techniques |
| 15 |  | Meta analysis and pharmacoepidemiology |
| 16 |  | **Final exam** |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Knows the concept of clinical pharmacology |  |  | **X** |
| LO 2 | Knows the phases of drug development |  |  | **X** |
| LO 3 | Knows the ethical rules in clinical research |  |  | **X** |
| LO 4 | Prepares a clinical research protocol |  |  | **X** |

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| **Lecturer**  **Ass .Prof.Dr.Mahmut ÖZDEMİR**  **Signature** | Date:26.03.2025 |

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| **COURSE CODE:** | **521704206** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | THE PRINCIPLES OF DRUG ACTIONS | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Fatma Sultan KILIÇ | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Drugs exhibit their effects in different ways. To inform that drugs show their effects via enzymes, membrane neurotransmitters, transmembranal active transport systems, ion channels and by chelating, or acting as antimetabolites or substituting inadequate substance in the body. | | | | |
| **COURSE AIMS** | | | To give information on the effects of drugs | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To classify the mechanisms of actions of drugs | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | To have knowledge about the mechanisms of action and routes of action of drugs. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcı Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular to Clinical: Brody, Larner, Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | |  | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | The effects of neuromediators on mechanism |
| 2 |  | The effects of neuromediators on mechanism |
| 3 |  | The effects of drugs related to their physical and chemical structures |
| 4 |  | The effects of drugs by enzyme ihibition or activation |
| 5 |  | The effects of drugs by acting as antimetabolites |
| 6 |  | Midterm exam |
| 7 |  | The effects of drugs by inhibiting or activating transmembranal active transport systems |
| 8 |  | The ion channel modulatory effects of drugs in exitabl cells |
| 9 |  | The substituting effects of drugs for inadequate substances in the body |
| 10 |  | The inducing or inhibiting effects of drugs on inactive substances in the body |
| 11 |  | The chelating effects of drugs |
| 12 |  | Final exam |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | The effects of neuromediators on mechanism |  |  | **X** |
| LO 2 | The effects of neuromediators on mechanism |  |  | **X** |
| LO 3 | The effects of drugs related to their physical and chemical structures |  |  | **X** |
| LO 4 | The effects of drugs by enzyme ihibition or activation |  |  | **X** |
| LO 5 | The effects of drugs by acting as antimetabolites |  |  | **X** |
| LO 6 | The effects of drugs by inhibiting or activating transmembranal active transport systems |  |  | **X** |
| LO 7 | The ion channel modulatory effects of drugs in exitabl cells |  |  | **X** |
| LO 8 | The substituting effects of drugs for inadequate substances in the body |  |  | **X** |
| LO 9 | The inducing or inhibiting effects of drugs on inactive substances in the body |  |  | **X** |
| LO 10 | The chelating effects of drugs |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Fatma Sultan KILIÇ  **Sign** | **Date**  24.07.2013 |

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| **COURSE CODE:** | **521704207** | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | THERAPEUTIC DRUG MONITORING (TDM) | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Basar SIRMAGUL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 7,5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Theoretical and practical information about fundamentals of therapeutic drug monitoring and drug analysis methods | | | | |
| **COURSE AIMS** | | | Learn beasic principles of therapeutic drug monitoring | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | |  | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | The student acquires basic knowledge regarding therapeutic drug level monitoring. | | | | |
| **TEXTBOOK** | | | KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Fundamentals of therapeutic drug monitoring |
| 2 |  | Why TDM is necessary? The features and samples of drugs that are monitored |
| 3 |  | TDM basics |
| 4 |  | TDM methods for blood samples |
| 5 |  | FDA and EMA regulations for TDM |
| 6 |  | Criteria and features of commonly monitored drugs |
| 7 |  | The importance of TDM |
| 8 |  | Pharmacokinetic parameters and applications in TDM |
| 9 |  | Collection, manipulation and storage of data for nTDM |
| 10 |  | Methods used in TDM |
| 11 |  | The interpretations of the results |
| 12 |  | FINAL EXAM |
| 13 |  |  |
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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | The student acquires basic knowledge regarding therapeutic drug level monitoring. |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Basar SIRMAGUL  **Sign** | **Date**  22.05.2025 |

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| **COURSE CODE:** | 521706208 | | **DEPARTMENT:** MEDICAL PHARMACOLOGY | | | |
| **COURSE NAME:** | RATIONAL DRUG USE | |  | | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Engin YILDIRIM** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** |  | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 2 | 0 |  | 2 | 5 | COMPULSORY ELECTIVE  **X** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Recently, the use of medicines is considered to be very important. By hearing the drug names from each other, individuals can easily provide the medicines from pharmacies and use them. In addition, according to the principles of rational medicine use, it is necessary to choose the right medicine for the right patient. Patients shpould receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community. It is required to raise the knowledge and awareness for the rational drug use. | | | | |
| **COURSE AIMS** | | | To provide awareness about the principles which are considered as important for the medication use | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To provide awareness about the efficacy, safety, adequacy and cost of medicines | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | To ensure that the appropriate drug is selected and used in the appropriate dose and for the appropriate duration by paying attention to the individual treatment characteristics of the drugs used in the treatment of diseases. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  3. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  4. Basic and Clinical Pharmacology: Bertram G. Katzung,  5. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  6. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  7.Human Pharmacology, Molecular to Clinical: Brody, Larner, Mınneman.  8. Hardman JG, Limbird LE, Gilman AG, The Pharmacological Basis of Therapeutics, McGraw-Hill, New York  9.Rang HP, Dale MM, Ritter JM, Pharmacology, Churchill Livingstone, Edinburgh, (3th ed.)1995.  10. Lüllmann H, Mohr K, Ziegler A.Atlas de Poche de Pharmacologie, Medecine- Sciences Flammarion, Paris (2.baskı), 1996  11. Taner D. Fonksiyonel Nöroanatomi,METU press | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | |  | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Introduction, |
| 2 |  | The importance of drug efficacy 1, |
| 3 |  | The importance of drug efficacy 2, |
| 4 |  | The importance of drug safety 1 |
| 5 |  | The importance of drug safety 2, |
| 6 |  | The importance of drug adequacy 1, |
| 7 |  | The importance of drug adequacy 2, |
| 8 |  | **Mid term exam** |
| 9 |  | The importance of drug cost 1 |
| 10 |  | The importance of drug cost 2 |
| 11 |  | The principles of drug use 1 |
| 12 |  | The principles of drug use 1 |
| 13 |  | The importance of pharmaceutical preparations in medical treatment |
| 14 |  | The importance of drug-drug interactions |
| 15 |  | The importance of drug-nutrient interactions |
| 16 |  | **Final exam** |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | To ensure that the appropriate drug is selected and used in the appropriate dose and for the appropriate duration by paying attention to the individual treatment characteristics of the drugs used in the treatment of diseases. |  |  | **X** |

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| **INSTRUCTOR NAME**  **Prof.Dr. Engin YILDIRIM** | **Date**  **27-03-2025** |

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| **COURSE CODE:** | **521706209** | | **DEPARTMENT: MEDICAL PHARMACOLOGY** | | | |
| **COURSE NAME:** | **PHARMACOLOGICAL BASIS OF DIABETES MELLITUS** | | | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Semra YİĞİTASLAN | | **COURSE LANGUAGE**  **Turkish: X**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
|  | **X** |  |  |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 2 | 0 |  | 2 | 5 | COMPULSORY ELECTIVE | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | Basic concepts and treatment of diabetes mellitus  Experimental diabetes models  The complications of diabetes and experimental models of diabetic neuropathy, nephropathy and retinopathy | | | | |
| **COURSE AIMS** | | | The main objectives of the course are to identify the basic concepts, treatment and complications of diabetes mellitus, to explain animal models for experimental diabetes studies and comparing experimental diabetes models in order to understand the principles of choosing an appropriate animal model for a diabetes research | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | By the end of this module students will be able to:  1- explain the treatment principles, complications and experimental models of diabetes mellitus.  2- choose an appropriate animal model for a diabetes research | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Learning about the treatment of diabetes, its complications and experimental diabetes models | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji.  2. Basic and Clinical Pharmacology: Bertram G. Katzung,  3. Toksikoloji (Akut zehirlenmelerde Tanı ve tedavi) | | | | |
| **OTHER REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | barcovision | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | Epidemiology and pathophysiology of diabetes mellitus |
| 2 |  | Treatment of diabetes mellitus |
| 3 |  | The pathophysiology of diabetic complications |
| 4 |  | Chemically induced type I DM |
| 5 |  | Spontaneous autoimmune and genetically induced type I DM |
| 6 |  | Obese models of type II DM |
| 7 |  | High fat feeding type II DM |
| 8 |  | **Mid-term Exam** |
| 9 |  | Nonrodent models of type I and II diabetes mellitus |
| 10 |  | Knock-out and transgenic mice in diabetes research |
| 11 |  | Role of glycation and advanced glycation end-products (AGEs) in the pathogenesis of diabetic complications. |
| 12 |  | Oxidative stress and abnormal lipid metabolism in diabetes research |
| 13 |  | Diabetic neuropathy models |
| 14 |  | Diabetic nephropathy models |
| 15 |  | Diabetic retinopathy models |
| 16 |  | **Final Exam** |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | Knows the pathophysiology of diabetes |  |  | **X** |
| LO 2 | Understands the types of diabetes |  |  | **X** |
| LO 3 | Knows the agents used in diabetes treatment |  |  | **X** |
| LO 4 | Knows and applies diabetes experimental models |  |  | **X** |
| LO 5 | Knows diabetic complications and their treatments |  |  | **X** |
| LO 6 | Knows and applies diabetic complication experimental models |  |  | **X** |

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| **INSTRUCTOR NAME**  Prof. Dr. Semra YİĞİTASLAN  **Sign** | **Date**  28/04/2025 |

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| **COURSE CODE:** | **521706210** | | **DEPARTMENT: MEDICAL PHARMACOLOGY** | | | |
| **COURSE NAME:** | **PHARMACOLOGICAL PRINCIPLES OF INFLAMMATION** | |  | | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Bilgin KAYGISIZ** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | **X** |  |

**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 2 | 0 |  | 2 | 5 | COMPULSORY ELECTIVE  **** | |
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| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| Mid-Term | | |  | **50** |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
|  | | | **Final Examination** | | | | **50** |
| **PREREQUISITE(S)** | | |  | | | | |
| **SHORT COURSE CONTENT** | | | In the first step the principles of inflammation and later the mediators associated with the inflammation will be discussed. In addition, experimental animal models of inflammation and pharmacotherapy of inflammation will be studied. | | | | |
| **COURSE AIMS** | | | The basic aim of the course is to learn the inflammatory mechanisms and the associated neuromediators, to manage an experiment by using the experimental inflammation models and to learn the pharmacological treatment of inflammation. | | | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATİON OBJECTİVES** | | | To be able to plan experimental studies based on the mechanisms of inflammation | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | Learn about the basics of inflammation and the drugs and mechanisms used in the treatment of inflammation. | | | | |
| **TEXTBOOK** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji.  2. Basic and Clinical Pharmacology: Bertram G. Katzung,  3. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  4-Pharmacology volume 2, The Pharmacotherapy of inflammation, editor: Harry Majewski. | | | | |
| **OTHER REFERENCES** | | |  | | | | |
| **TOOLS AND EQUIPMENTS REQUTRED** | | | Basic textbooks and technological equipment required for the course (computer, projector, etc.) | | | | |

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|  | **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **DATE** | **TTOPICS** |
| 1 |  | The principles of inflammation and the immune system |
| 2 |  | Major mediators of inflammation |
| 3 |  | Endogenous down regulators of inflammation |
| 4 |  | Cytokines and chemokines |
| 5 |  | The pharmacology of immunesupression |
| 6 |  | Neuroinflammation and related diseases |
| 7 |  | Experimental animal models of inflammation-1(Acute inflammation) |
| 8 |  | **Mid-term Exam** |
| 9 |  | Experimental animal models of inflammation-2 (Chronic inflammation) |
| 10 |  | Mediator receptor antagonists in pharmacotherapy of inflammation |
| 11 |  | Cytokine neutralizing agents in pharmacotherapy of inflammation |
| 12 |  | Disease modifying antirhomatoid agents in pharmacotherapy of inflammation |
| 13 |  | Immunsupressants in pharmacotherapy of inflammation |
| 14 |  | The treatment of gout disease |
| 15 |  | **Final Exam** |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **1**  Low | **2**  MId | **3**  HIgh |
| LO 1 | The student learns about the basic concepts of pharmacology. |  |  | **x** |

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| **INSTRUCTOR NAME**  Prof. Dr. Bilgin KAYGISIZ  **Sign** | **Date**  26.03.2025 |