**Courses – ECTS Credits**

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| 1. **and Year 2** | | | | | |
| Code | Course Name | ECTS | T+U+L | T/S | Language |
| Fall Semester | | | | | |
| 521203311 | [ADVANCED RESPIRATORY AND CARDIOVASCULAR SYSTEM ANATOMY](#DERS521201311) | 7.5 | 2+2+0 | COMPULSORY | TURKISH |
| 521203312 | [ADVANCED GASTROINTESTINAL AND UREOGENETITAL SYSTEM ANATOMY](#DERS521201312) | 7.5 | 2+2+0 | COMPULSORY | TURKISH |
| 521203301 | [ADVANCED DISSECTION TECHNIQUES](#DERS521201301) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521203303 | [SOME STEREOLOGICAL METHODS USED IN BIOLOGICAL RESEARCH](#DERS521201303) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521203304 | [SYSTEMATIC ANATOMY I](#DERS521201304) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521203305 | [CENTRAL NERVOUS SYSTEM ANATOMY](#DERS521201305) | 7.5 | 3+2+0 | ELECTIVE | TURKISH |
| 521203306 | [TOPOGRAPHIC SECTION ANATOMY](#DERS521201306) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521203307 | [INTEGRATION OF CORTICAL FUNCTIONS](#DERS521201307) | 7.5 | 3+0+0 | ELECTIVE | TURKISH |
| 521203310 | [ADVANCED DIGESTIVE SYSTEM ANATOMY](#DERS521201310) | 7.5 | 3+2+0 | ELECTIVE | TURKISH |
| 521201600 | SPECIALIZED FIELD COURSE | 5 | 3+0+0 | COMPULSORY | TURKISH |
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| Spring Term | | | | | |
| 521204314 | [ADVANCED NERVOUS SYSTEM ANATOMY](#DERS521202314) | 7.5 | 2+2+0 | COMPULSORY | TURKISH |
| 521206301 | [CLINICAL ANATOMY](#DERS521202301) | 5.0 | 2+1+0 | ELECTIVE | TURKISH |
| 521204302 | [SENSORY AND MOTOR SYSTEMS](#DERS521202302) | 7.5 | 3+0+0 | ELECTIVE | TURKISH |
| 521204303 | [PERIPHERAL NERVOUS SYSTEM ANATOMY](#DERS521202303) | 7.5 | 3+1+0 | ELECTIVE | TURKISH |
| 521204304 | [SYSTEMATIC ANATOMY II](#DERS521202304) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521204305 | [SELECTED SPECIAL TOPICS IN ANATOMY](#DERS521202305) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521204306 | [DEVELOPMENTAL NEUROBIOLOGY OF THE NERVOUS SYSTEM](#DERS521202306) | 7.5 | 3+0+0 | ELECTIVE | TURKISH |
| 521204307 | [SYSTEMS REGULATING BODY FUNCTIONS](#DERS521202307) | 7.5 | 3+0+0 | ELECTIVE | TURKISH |
| 521206308 | [RADIOLOGICAL ANATOMY](#DERS521202308) | 5.0 | 2+1+0 | ELECTIVE | TURKISH |
| 521206309 | [ANATOMY OF THE AUTONOMIC NERVOUS SYSTEM](#DERS521202309) | 5.0 | 2+1+0 | ELECTIVE | TURKISH |
| 521204310 | [ADVANCED UROGENITAL SYSTEM ANATOMY](#DERS521202310) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521204311 | [FUNCTIONAL ANATOMY OF THE MOVEMENT SYSTEM](#DERS521202311) | 7.5 | 3+2+0 | ELECTIVE | TURKISH |
| 521204312 | [PRINCIPLES AND APPLICATIONS OF IMMUNOFLUORESCENCE AND ENZYME-BASED IMAGING](#DERS521202312) | 7.5 | 3+2+0 | ELECTIVE | TURKISH |
| 521204313 | [ADVANCED MOVEMENT SYSTEM ANATOMY](#DERS521202313) | 7.5 | 2+2+0 | ELECTIVE | TURKISH |
| 521201600 | SPECIALIZED FIELD COURSE | 5 | 3+0+0 | COMPULSORY | TURKISH |
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| **COURSE CODE:** | **521203301** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **ADVANCED DISSECTION TECHNIQUES** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| Mid-Term | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Report |  |  |
| Other (………) |  |  |
| **Final Examination** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | For students who have taken the cadaver dissection course and have grasped general dissection, the boundaries and dissection of topographically characteristic areas of the body will be emphasized. In addition, cross-sectional anatomy will be practiced in the central nervous system. | | |
| **COURSE AIMS** | It is aimed to provide the necessary theoretical and practical information for dissection in special areas of the human body that may require deep or microscopic dissection techniques. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students are expected to have knowledge about the structures within the selected region and to be able to dissect these specific regions. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To develop the ability to perform and apply advanced dissection techniques with precision, and to gain the detailed anatomical knowledge necessary for clinical practice, research, and surgical planning. | | |
| **TEXTBOOK** | Sauerland EK: Grant's dissector (12th ed.), Lippincott Williams & Wilkins, 1999.  Jacobs JJ: Shearer's manual of human dissection (7th ed.) McGraw-Hill, 1989.  McMinn RMH, Hutchings RT, Pegington J., Abrahams P.: Color atlas of human anatomy (3rd ed.), 1993.  Williams PL: Gray's Anatomy, (38th ed.) Churchill Livingstone, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993.  Rohen JW, Yokoch C., Drecoll L.: Color atlas of anatomy: A photographic study of the human body (4th ed.), Williams & Wilkins, 1998. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | General principles of dissection |
| 2 | Tools |
| 3 | Theoretical information about the area to be dissected (student presentation) |
| 4 | Theoretical information about the area to be dissected |
| 5 | Variations related to structures in the region (student presentation) |
| 6 | Variations related to structures in the region |
| 7 | Lifting the skin, subcutaneous muscle |
| 8 | MIDTERM EXAM |
| 9 | Dissection - superficial structures |
| 10 | Dissection- deep structures |
| 11 | Dissection- deep structures |
| 12 | Head sections-coronal plane |
| 13 | Head sections-coronal plane |
| 14 | Head sections-sagittal plane |
| 15 | Head sections-sagittal plane |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| LO 1 | Demonstrates fundamental dissection skills and applies basic anatomical knowledge during cadaveric dissection. |  |  | **x** |
| LO 2 | Performs advanced dissection of major anatomic regions with attention to anatomical detail. |  |  | **x** |
| LO 3 | Identifies and isolates anatomical structures in important anatomic regions and interprets their spatial and clinical relationships through dissection. |  | **x** |  |
| LO 4 | Correlates findings from dissection with anatomical data obtained from medical imaging techniques. | **x** |  |  |
| LO 5 | Interprets anatomical variations and structural relationships observed during dissection in the context of clinical symptoms and functional anatomy. |  | **x** |  |
| LO 6 |  |  |  |  |
| LO 7 |  |  |  |  |
| LO 8 |  |  |  |  |
| LO 9 |  |  |  |  |
| LO 10 |  |  |  |  |
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| LO 14 |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | **History** |

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| **COURSE CODE:** | **521203303** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | SOME STEREOLOGICAL METHODS USED IN BIOLOGICAL RESEARCH | | | | | | |
| **LECTURER GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Brief review of some problems encountered in measuring and counting biological tissues. Introduction of the concept of stereological methods used in biological research. Definition of 3-dimensional methods and their applications on biological tissues. Evaluation and interpretation of data. Length, number per unit volume (Nv), volume, total particle number, volume fraction (Vv), volume-weighted average volume and number-weighted average volume. | | |
| **COURSE AIMS** | At the end of this course, students will be able to understand the problems that arise in measuring and counting biological tissues. They will be able to apply 3D stereological methods in their experimental studies. They will have sufficient knowledge about the interpretation of biological data. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Review the role of fundamental morphometric problems in biological tissues. Select effective methods in studies. Understand the importance of these methods used in studies. Provide practice in the application of these methods. Define practical methods for stereological determination of volume, length, surface, number and average particle sizes. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To gain the ability to apply stereological methods for the quantitative analysis of biological structures, and to acquire the theoretical and practical knowledge necessary for designing, conducting, and interpreting unbiased morphometric research. | | |
| **TEXTBOOK** | Howard, CV and Reed, MG: Unbiased Stereology. BIOS Scientific Publishers Limited, 1998. | | |
| **OTHER REFERENCES** | - | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Lab animal organs or tissues, stereology microscope, stereology software and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Basic concepts, sampling and objectivity for microscopy |
| 2 | Rates and frequencies of occurrence |
| 3 | Determination of reference volume using the Cavalieri Method |
| 4 | Volume fraction calculations |
| 5 | Number calculation: Average number of particles per unit area (Na) |
| 6 | Disector Method: Average number of particles per unit volume (Nv) |
| 7 | Unfolding Method |
| 8 | MIDTERM EXAM |
| 9 | Optical dissector |
| 10 | Total number calculation |
| 11 | Fractionator |
| 12 | Optical fractionator |
| 13 | Surface density), |
| 14 | Volume weighted average volume |
| 15 | Number weighted average volume |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D.)** | **1**  Low | **2**  Mid | **3**  High |
| LO 1 | Explains the basic principles and theoretical foundations of stereology. |  |  | **x** |
| LO 2 | Describes the commonly used stereological techniques in biological research. |  |  | **x** |
| LO 3 | Applies appropriate stereological methods for the quantitative analysis of tissue and organ structures. |  |  | **x** |
| LO 4 | Evaluates biological data obtained from histological sections and imaging methods using stereological approaches. |  | **x** |  |
| LO 5 | Interprets stereological findings in relation to research hypotheses and draws biologically meaningful conclusions. |  | **x** |  |
| LO 6 |  |  |  |  |
| LO 7 |  |  |  |  |
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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL | **History** |

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| **COURSE CODE:** | **521203304** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | SYSTEMATIC ANATOMY I | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | To understand the morphology and functions of the organs of the locomotor and nervous systems and sensory organs in the human body and to study the clinical problems of the organs of different systems. | | |
| **COURSE AIMS** | Introducing general concepts in the structure and functions of systems. Describing the morphological and topographical structure of organs. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students will be able to; Understand the relationship between normal and abnormal functions of systems in the human body. Be sufficiently familiar with the topographic anatomy of these systems. Interpret critical information about these systems. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To understand the morphology and functions of the organs of the locomotor and nervous systems, as well as the sensory organs, and to acquire the anatomical knowledge necessary to interpret clinical problems related to these systems. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** |  | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Introduction to anatomy, terminology, general information about bones, joints and muscles |
| 2 | Upper and lower extremity bones, skull bones, columna vertebralis, costae, sternum |
| 3 | Upper and lower extremity joints, entire head and face, columna vertebralis joints, thorax |
| 4 | Muscles of the head and neck region, trunk muscles |
| 5 | Upper and lower extremity muscles |
| 6 | Introduction to the central nervous system, neurons, receptors, senses |
| 7 | Spinal cord, brainstem and cerebellum |
| 8 | MIDTERM EXAM |
| 9 | Diencephalon, rhinencephalon, basal ganglia |
| 10 | Telencephalon, cortical centers, meninges and vessels |
| 11 | Introduction to the peripheral nervous system, receptors |
| 12 | Cranial nerves |
| 13 | Spinal nerves |
| 14 | Autonomic Nervous System |
| 15 | Sense organs |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  Low | **2**  Mid | **3**  High |
| LO 1 | Explains the general anatomical organization of the human body within the framework of systematic anatomy. |  |  | **x** |
| LO 2 | Describes the structure and function of the organs of the locomotor system, including bones, joints, and muscles. |  |  | **x** |
| LO 3 | Identifies the main components and functional organization of the central and peripheral nervous systems. |  |  | **x** |
| LO 4 | Defines the anatomical features and roles of sensory organs, and explains their integration with related systems |  |  | **x** |
| LO 5 | Evaluates clinical conditions by correlating them with the structural and functional anatomy of the affected system. |  | **x** |  |
| LO 6 |  |  |  |  |
| LO 7 |  |  |  |  |
| LO 8 |  |  |  |  |
| LO 9 |  |  |  |  |
| LO 10 |  |  |  |  |
| LO 11 |  |  |  |  |
| LO 12 |  |  |  |  |
| LO 13 |  |  |  |  |
| LO 14 |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521203305** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | CENTRAL NERVOUS SYSTEM ANATOMY | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK. | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 3 | 2 | - | 4 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn 🗵 | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Information on the anatomy of the central nervous system will be given. | | |
| **COURSE AIMS** | Providing anatomical information about the system and indicating its functional importance. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Determining the location of the structures belonging to the system in the body, understanding their relationship with functions, and providing clinical connections. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To acquire comprehensive knowledge of the structural and functional organization of the central nervous system, and to develop the ability to relate this knowledge to clinical conditions and neuroanatomical correlations. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Formation of the nervous system |
| 2 | Neuron and its types |
| 3 | Classification of senses and general information |
| 4 | Receptors and their grouping |
| 5 | Spinal cord |
| 6 | Bulbus |
| 7 | Pons |
| 8 | MIDTERM EXAM |
| 9 | Cerebellum |
| 10 | Mesencephalon |
| 11 | Diencephalon |
| 12 | Telencephalon, cortical centers |
| 13 | Rhinencephalon |
| 14 | Basal ganglia and extrapyramidal system |
| 15 | Meninges and vessels of the brain |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  Low | **2**  Mid | **3**  High |
| LO 1 | Describes the general organization and development of the central nervous system. |  |  | **x** |
| LO 2 | Identifies the anatomical structures of the brain and spinal cord and explains their functions. |  |  | **x** |
| LO 3 | Explains the internal organization and functional pathways of the brainstem, cerebellum, diencephalon, and cerebral hemispheres. |  |  | **x** |
| LO 4 | Interprets the vascular supply and protective structures of the central nervous system, including meninges and cerebrospinal fluid circulation. |  |  | **x** |
| LO 5 | Evaluates clinical and radiological findings in relation to central nervous system anatomy. |  | **x** |  |
| LO 6 |  |  |  |  |
| LO 7 |  |  |  |  |
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| LO 14 |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521203306** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **TOPOGRAPHIC SECTION ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn🗵 | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | This course aims to examine anatomical structures and their neighborhoods in sections taken from certain levels of the human body using modern imaging techniques such as computerized tomography and magnetic resonance. Comparative examinations will be conducted with tomographic images of the upper extremity, lower extremity, head and neck, thorax, abdomen and pelvis regions. | | |
| **COURSE AIMS** | Providing topographic anatomy information of the systems. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Determining the location of structures belonging to systems in the body and providing topographic connections. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To gain the ability to understand and interpret the anatomical structures of the human body in sectional views, and to develop the skills necessary to analyze topographic relationships for clinical and radiological applications. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH: Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Topographic Anatomy of the head, face and sensory organs |
| 2 | Topographic Anatomy of the Neck Region |
| 3 | Topographic Anatomy of the Vertebral Column and Spinal Medulla |
| 4 | Topographic Anatomy of the Chest Region (pleura, lungs, mediastinum) |
| 5 | Topographic Anatomy of the Shoulder and Axillary Region |
| 6 | Topographic Anatomy of the Arm, Elbow and Forearm Region |
| 7 | Topographic Anatomy of the Wrist Region and Hand |
| 8 | MIDTERM EXAM |
| 9 | Topographic Anatomy of the Abdominal Region |
| 10 | Topographic Anatomy of the Inguinal Region |
| 11 | Topographic Anatomy of the Perineal Region |
| 12 | Topographic Anatomy of the Pelvic Region |
| 13 | Topographic Anatomy of the hip joint, femur region |
| 14 | Topographic Anatomy of the knee, leg and ankle region |
| 15 | Surface Topographic Anatomy |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Defines the basic principles and terminology related to sectional and topographic anatomy. |  |  | **x** |
| **LO 2** | Identifies anatomical structures in cross-sectional, sagittal, and coronal planes using visual and imaging materials. |  |  | **x** |
| **LO 3** | Explains the spatial relationships between organs and structures in different body regions through sectional anatomy. |  |  | **x** |
| **LO 4** | Correlates sectional anatomy with surface landmarks and clinical procedures. |  | **x** |  |
| **LO 5** | Interprets radiological images (CT, MRI) based on topographic anatomical knowledge. |  | **x** |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
| **LO 8** |  |  |  |  |
| **LO 9** |  |  |  |  |
| **LO 10** |  |  |  |  |
| **LO 11** |  |  |  |  |
| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521203307** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **INTEGRATION OF CORTICAL FUNCTIONS** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 3 | 0 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn🗵 | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | In this course; basic anatomy information about medulla spinalis, brain stem, mesencephalon, cerebellum, cranial nerves, diencephalon, cerebral hemispheres will be given. Descending and ascending pathways from medulla spinalis will be explained. Information about movement control and somatic sensory systems will be given. Examples from neurological clinical pictures will be given. In this course; locomotor system, respiratory and cardiovascular system, digestive and urogenital system will be explained. | | |
| **COURSE AIMS** | To provide information about the functional areas of the cortex. The relationship between the medulla spinalis, cerebellum, thalamus, hypothalamus, extrapyramidal system and cranial nerves will be given. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Understanding of the integration of cortical functions by the student with the help of anatomy knowledge. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To understand the organization and integration of cortical areas responsible for sensory, motor, and cognitive functions, and to relate this knowledge to functional networks and clinical conditions involving the cerebral cortex. | | |
| **TEXTBOOK** | -Waxman, SG.: Correlative Neuroanatomy. (Edited by: Mehmet Yıldırım) Nobel Istanbul.2002.  -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Spinal cord |
| 2 | Descending pathways in the spinal cord |
| 3 | Pathways in the medulla spinalis |
| 4 | Microscopic Anatomy of the Spinal Medulla |
| 5 | Brain stem, midbrain and cerebellum |
| 6 | Basic information about cranial nerves |
| 7 | Anatomy and functions of the Diencephalon (Thalamus, hypothalamus, subthalamus, epithalamus) |
| 8 | MIDTERM EXAM |
| 9 | Anatomy of the Cerebral Hemispheres |
| 10 | Structure and functional areas of the cerebral cortex |
| 11 | Segmental innervation of the skin (dermatomes) |
| 12 | Control of movement |
| 13 | Somatic sensory systems |
| 14 | Reticular formation and limbic system |
| 15 | Relationship between neuroanatomy and neurology, Clinical problems |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Phd)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the anatomical organization and cytoarchitecture of the cerebral cortex. |  |  | **x** |
| **LO 2** | Identifies primary and association cortical areas involved in motor, sensory, language, and cognitive functions. |  |  | **x** |
| **LO 3** | Explains the functional connectivity between cortical regions and their roles in integrated brain functions. |  |  | **x** |
| **LO 4** | Analyzes clinical conditions resulting from lesions or dysfunctions in specific cortical areas. |  | **x** |  |
| **LO 5** | Interprets neuroimaging and electrophysiological data in relation to cortical functional integration. | **x** |  |  |
| **LO 6** |  |  |  |  |
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| **LO 11** |  |  |  |  |
| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521203310** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **ADVANCED DIGESTIVE SYSTEM ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 3 | 2 | - | 4 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Digestive system: Oral cavity and its contents, pharynx, esophagus, stomach, small intestines, large intestines, anal canal, peritoneum, liver, pancreas, anterior abdominal wall topographic regions | | |
| **COURSE AIMS** | To teach the anatomy of the topographic region of the oral cavity and its contents, pharynx, esophagus, stomach, small intestines, large intestines, anal canal, peritoneum, liver, pancreas, and anterior abdominal wall. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | The aim is for students to understand the organs that make up the digestive system, their morphological structures and their relationships with each other. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To develop in-depth knowledge of the anatomical structures and functional organization of the digestive system, and to interpret their clinical, surgical, and radiological relevance. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos. | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Introduction to the Digestive System |
| 2 | Oral Cavity: Tongue, Teeth, Tonsils and Salivary Glands |
| 3 | Pharynx and Esophagus: Parts, Muscles, Nerves and Vessels |
| 4 | Abdominal Regions and Their Contents |
| 5 | Peritoneum: Its Cavity, Parts and Contents |
| 6 | Stomach Muscles, Nerves and Veins |
| 7 | Small Intestines: Duodenum, Jejunum and Ileum |
| 8 | MIDTERM EXAM |
| 9 | Large Intestines: Caecum, Colon and Rectum |
| 10 | Structure, Muscles and Veins of the Anal Canal |
| 11 | Vessels, Lymphatic Drainage and Nerves of the Digestive Tract |
| 12 | Large Veins and Portal System in the Posterior Abdominal Wall |
| 13 | Liver |
| 14 | Gallbladder and Bile Ducts |
| 15 | Pancreas and Spleen |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the detailed anatomy of the organs forming the gastrointestinal tract and associated glands. |  |  | **x** |
| **LO 2** | Explains the vascular, lymphatic, and neural supply of the digestive system and their clinical implications. |  |  | **x** |
| **LO 3** | Identifies anatomical relationships between digestive organs and adjacent structures in various body regions. |  |  | **x** |
| **LO 4** | Evaluates congenital and acquired pathologies of the digestive system based on anatomical principles. |  | **x** |  |
| **LO 5** | Interprets advanced radiological and endoscopic images in relation to digestive system anatomy. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
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| **LO 9** |  |  |  |  |
| **LO 10** |  |  |  |  |
| **LO 11** |  |  |  |  |
| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE: 521203311** | | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **ADVANCED RESPIRATORY AND CARDIOVASCULAR SYSTEM ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
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| Autumn🗵 | 🗵 | □ |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Respiratory system: Anatomy of the nose, pharynx, larynx, trachea and lungs  Circulatory system: Pericardium, parts of the heart, vessels, nerves and conduction. | | |
| **COURSE AIMS** | To teach the nose, pharynx, larynx, trachea, lungs, pericardium, and the parts of the heart, their vessels, nerves and conduction system. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | The aim is for students to understand the organs that make up the respiratory and cardiovascular systems, their morphological structures and their relationships with each other. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To acquire advanced knowledge of the anatomical structures and functional organization of the respiratory and cardiovascular systems, and to analyze their clinical, surgical, and radiological significance in detail. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg ThiemeVerlag, Stuttgart-New York.  -Moore, KL: ClinicallyOrientedAnatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray'sAnatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -NetterF.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Introduction to the Circulatory System, Pericardium and External Appearance of the Heart |
| 2 | Atrium and Ventricles of the Heart |
| 3 | Great Vessels of the Heart and General Circulation |
| 4 | Arteries and Veins of the Heart |
| 5 | Conduction System of the Heart |
| 6 | Innervation of the heart |
| 7 | Fetal Circulation |
| 8 | MIDTERM EXAM |
| 9 | Introduction to the Respiratory System |
| 10 | Nose Anatomy and Paranasal Sinuses |
| 11 | Parts of the Pharynx and Larynx |
| 12 | Muscles, Vessels and Nerves of the Larynx |
| 13 | Trachea, Bronchus, and Bronchiolus |
| 14 | Lungs, Pleura and Diaphragm |
| 15 | Mediastinum and Its Structures |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Phd)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the detailed anatomy of the organs and structures of the respiratory and cardiovascular systems. |  |  | **x** |
| **LO 2** | Explains the vascular, lymphatic, and neural connections of the heart, lungs, and associated structures. |  |  | **x** |
| **LO 3** | Identifies topographic relationships between thoracic organs and surrounding anatomical regions. |  |  | **x** |
| **LO 4** | Evaluates the anatomical basis of common and complex pathologies affecting the respiratory and cardiovascular systems. |  | **x** |  |
| **LO 5** | Interprets advanced radiological, angiographic, and surgical images in the context of thoracic anatomy. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
| **LO 8** |  |  |  |  |
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| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521203312** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **ADVANCED GASTROINTESTINAL AND UROGENITAL SYSTEM ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring□ | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn🗵 | 🗵 | □ |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | The development, anatomy and clinic of the digestive system (oral cavity and its contents, pharynx, esophagus, stomach, small intestines, large intestines, anal canal, peritoneum, liver, pancreas, anterior abdominal wall topographic regions) and the urogenital system are explained. | | |
| **COURSE AIMS** | To teach the topographic region anatomy of the oral cavity and its contents, pharynx, esophagus, stomach, small intestines, large intestines, anal canal, peritoneum, liver, pancreas, urinary and genital organs, anterior abdominal wall and pelvis. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | The aim is for students to understand the organs that make up the digestive and urogenital systems, their morphological structures and their relationships with each other. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To develop advanced understanding of the anatomical structures, spatial relationships, and functional organization of the gastrointestinal and urogenital systems, and to apply this knowledge in clinical, surgical, and radiological contexts. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: ClinicallyOrientedAnatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray'sAnatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter F.H.: Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Entrance to the digestive system and oral cavity |
| 2 | Pharynx, esophagus and stomach |
| 3 | Abdominal regions and contents, peritoneum |
| 4 | Small and large intestines and anal canal |
| 5 | Blood supply of the digestive system, nerves, veins and portal circulation |
| 6 | Liver, gallbladder and bile ducts |
| 7 | Pancreas and spleen |
| 8 | MIDTERM EXAM |
| 9 | Development of urinary and genital organs |
| 10 | Kidney, adrenal glands, ureter, bladder and urethra |
| 11 | Clinic of the urinary system |
| 12 | Male genital organs |
| 13 | Female genital organs |
| 14 | Pelvic floor and ischiorectalis fossa, retroperitoneal structures |
| 15 | Clinic of genital organs |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the detailed anatomy of the gastrointestinal and urogenital organs and their regional organization. |  |  | **x** |
| **LO 2** | Explains the vascular, lymphatic, and neural supply of the abdominal and pelvic organs and their clinical relevance. |  |  | **x** |
| **LO 3** | Identifies topographic and spatial relationships between gastrointestinal and urogenital structures in the abdomen and pelvis. |  |  | **x** |
| **LO 4** | Evaluates congenital anomalies, pathological conditions, and surgical approaches in light of anatomical knowledge. |  | **x** |  |
| **LO 5** | Interprets radiological and endoscopic images related to the gastrointestinal and urogenital systems using advanced anatomical perspectives. |  | **x** |  |
| **LO 6** |  |  |  |  |
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| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521206301** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **CLINICAL ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 1 | - | 2.5 | 5.0 | COMPULSORY | ELECTIVE |
| Autumn□ | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | In this course, information will be given about the clinical anatomy of the locomotor system and other systems. Evaluation of the clinical anatomy of the locomotor system, important clinical anatomy tables of the thorax and abdominal organs, inguinal region and urogenital system, and the place of congenital anomalies in clinical anatomy will be explained. | | |
| **COURSE AIMS** | Providing information on clinical anatomy and indicating its functional importance. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Determining the location of structures belonging to systems in the body, understanding their relationship with functions, and establishing clinical connections. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To integrate anatomical knowledge with clinical practice by understanding the structural basis of disease, physical examination findings, imaging interpretation, and surgical procedures. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Clinical anatomy and general concepts |
| 2 | Clinical anatomy of the locomotor system |
| 3 | Clinical anatomy of columna vertebralis and medulla spinalis |
| 4 | Clinical anatomy of the thorax and lungs |
| 5 | Relationship of abdominal organs with peritoneum and clinical anatomy |
| 6 | Clinical anatomy of the inguinal region |
| 7 | Clinical anatomy of the central nervous system |
| 8 | MIDTERM EXAM |
| 9 | Clinical anatomy of the organs of vision and hearing |
| 10 | Clinical anatomy relationship between pelvis and birth object in labor |
| 11 | Fetus-newborn clinical anatomy |
| 12 | Place of congenital anomalies in clinical anatomy |
| 13 | Clinical anatomy of male and female reproductive organs |
| 14 | Clinical anatomy of the urinary system |
| 15 | Clinical anatomy of the endocrine system |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Explains the anatomical basis of common clinical signs, symptoms, and physical examination techniques. |  |  | **x** |
| **LO 2** | Identifies key anatomical landmarks and structures relevant to clinical procedures and surgical interventions. |  |  | **x** |
| **LO 3** | Correlates anatomical knowledge with radiological and endoscopic findings used in diagnosis and treatment. |  | **x** |  |
| **LO 4** | Evaluates the structural and functional consequences of injuries, pathologies, and congenital anomalies. |  |  | **x** |
| **LO 5** | Applies anatomical knowledge to interpret case-based clinical scenarios and problem-solving in medical practice. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
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| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204302** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **SENSORY AND MOTOR SYSTEMS** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 3 | - | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn□ | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | In this course; firstly, the general structures and organizations of different systems that carry sensory information from peripheral receptors to the cortex level will be examined. In the second part; the functioning of sensory systems will be reversed in a way and the functioning of motor systems will be explained. | | |
| **COURSE AIMS** | It is aimed to explain how sensory information enters from the receptor level and is transmitted to the top of the system, and from there how motor information is transmitted to the effector system at lower levels, namely the muscles. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students will learn the general principles of operation of sensory and motor systems. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To understand the anatomical and functional organization of the sensory and motor systems, and to analyze their roles in perception, movement, and clinical conditions affecting these systems. | | |
| **TEXTBOOK** | -Haines DE: Fundamental Neuroscience, Churchill Livingstone, 1997.  -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH: Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Fundamentals of sensory systems and similar transmission pathways |
| 2 | Receptors and sensory transduction |
| 3 | Structure, functions and connections of the sensory cortex |
| 4 | Chemical senses: taste and smell |
| 5 | Tactile sensory system |
| 6 | Auditory system |
| 7 | Visual system |
| 8 | MIDTERM EXAM |
| 9 | Fundamentals of motor systems |
| 10 | Motor neurons and muscle afferents |
| 11 | Fundamentals of spinal motor control |
| 12 | Supraspinal control of body posture |
| 13 | Control of voluntary movements |
| 14 | Organization of the motor cortex |
| 15 | Eye movements |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the anatomical structures involved in sensory and motor pathways within the central and peripheral nervous systems. |  |  | **x** |
| **LO 2** | Explains the organization and function of ascending and descending tracts. |  |  | **x** |
| **LO 3** | Identifies the cortical and subcortical centers responsible for the initiation, coordination, and modulation of movement. |  |  | **x** |
| **LO 4** | Evaluates clinical conditions such as motor deficits, sensory loss, and reflex abnormalities based on neuroanatomical pathways. |  | **x** |  |
| **LO 5** | Interprets neuroimaging and electrophysiological findings related to sensory and motor system anatomy. | **x** |  |  |
| **LO 6** |  |  |  |  |
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| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204303** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **PERIPHERAL NERVOUS SYSTEM ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 3 | 1 | - | 3.5 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Identification of cranial nerves and their distribution in the body and the fibers they carry; distribution of medulla spinalis and spinal nerves in the body and the fibers they carry; peripheral structures of the autonomic nervous system, fibers and their distribution. | | |
| **COURSE AIMS** | Describe the distribution and clinic of the medulla spinalis and spinal nerves. Describe the distribution and clinic of cranial nerves in the human body. Describe the general distribution and clinic of the autonomic nervous system. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students will have sufficient knowledge about cranial nerves and their main branches. They will have detailed information about spinal nerves and medulla spinalis. They will have general information about the autonomic nervous system. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To gain comprehensive knowledge of the anatomical structure, organization, and clinical relevance of the peripheral nervous system, and to apply this knowledge in understanding peripheral nerve functions, injuries, and related pathologies. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Receptor and Receptor types, Medulla spinalis |
| 2 | Pathways of the spinal cord |
| 3 | Bulbus and Pons |
| 4 | Nn.olfactorii |
| 5 | N. opticus |
| 6 | N.oculomotorius, N.trochlearis, N.abducens |
| 7 | N. trigeminus |
| 8 | MIDTERM EXAM |
| 9 | N. facialis |
| 10 | N.vestibulocochlearis, N.glossopharyngeus |
| 11 | N.vagus |
| 12 | N.accessorius, N.hypoglossus |
| 13 | Autonomic Nervous System |
| 14 | Sympathetic System and Truncus sympathicus |
| 15 | Autonomic Plexuses |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the anatomical components of the peripheral nervous system, including cranial and spinal nerves. |  |  | **x** |
| **LO 2** | Explains the organization and distribution of nerve plexuses and their peripheral branches. |  |  | **x** |
| **LO 3** | Identifies the sensory and motor innervation patterns of peripheral nerves and their target structures. |  |  | **x** |
| **LO 4** | Evaluates the anatomical basis of peripheral nerve injuries, entrapment syndromes, and neuropathies. |  | **x** |  |
| **LO 5** | Interprets clinical findings and imaging related to peripheral nerve anatomy and pathologies. |  | **x** |  |
| **LO 6** |  |  |  |  |
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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204304** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | SYSTEMATIC ANATOMY II | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | To understand the morphology and functions of the organs of the locomotor and nervous systems and sensory organs in the human body and to study the clinical problems of the organs of different systems. | | |
| **COURSE AIMS** | Introducing general concepts in the structure and function of systems.  Describe the morphological and topographical structure of organs. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students will be able to: Understand the relationship between normal and abnormal functions of systems in the human body. Be sufficiently familiar with the topographic anatomy of these systems. Interpret critical information about these systems. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To provide advanced understanding of the structure and topographic anatomy of human body systems, and to enable students to interpret the relationship between normal and pathological functions based on anatomical knowledge. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Faces of the heart, parts of the heart, location of the heart, pericardium |
| 2 | Vessels of the heart, lymph drainage, nerves, conduction system of the heart |
| 3 | Arterial and venous circulation, great vessels, lymphatic circulation |
| 4 | Nose and paranasal sinuses, larynx |
| 5 | Trachea, lungs, cavitas thoracis, mediastinum |
| 6 | Cavum oris and its structures, fauces, pharynx, oesophagus |
| 7 | Stomach, small and large intestines |
| 8 | MIDTERM EXAM |
| 9 | Liver, gallbladder and bile ducts |
| 10 | Peritoneum, topographic regions of the abdomen and positions of organs |
| 11 | Kidneys, ureters, bladder, male and female urethra |
| 12 | Male external and internal genital organs |
| 13 | Female external and internal genital organs |
| 14 | Pelvic floor and ischiorectalis fossa |
| 15 | Glands in the endocrine system |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the detailed anatomy and organization of selected body systems covered in the second part of systematic anatomy. |  |  | **x** |
| **LO 2** | Explains the topographic relationships of organs and structures within each system. |  |  | **x** |
| **LO 3** | Interprets the anatomical basis of functional and pathological changes in the systems studied. |  |  | **x** |
| **LO 4** | Correlates anatomical knowledge with clinical findings, imaging, and diagnostic approaches. |  | **x** |  |
| **LO 5** | Evaluates case-based scenarios involving anatomical abnormalities and their functional consequences. |  | **x** |  |
| **LO 6** |  |  |  |  |
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| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204305** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | SELECTED SPECIAL TOPICS IN ANATOMY | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn□ | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | The student taking the course, together with the faculty member, chooses a topic related to special Anatomy and designs a study. | | |
| **COURSE AIMS** | Providing the student with the necessary infrastructure to design a study on Anatomy. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | The student will have the infrastructure to design a study related to Anatomy. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To explore current and advanced topics in anatomical science, and to provide students with the foundational knowledge and research skills necessary to design and conduct anatomy-related studies. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Scientific Databases and Journals, Computer and Presentation Software, 3D Anatomy Software or Virtual Dissection Tools, Radiological Image Viewing Tools, Basic Statistical Software | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Evaluation of various anatomical publications made in recent years. |
| 2 | Evaluation of various anatomical publications made in recent years. |
| 3 | Evaluation of various anatomical publications made in recent years. |
| 4 | Evaluation of various anatomical publications made in recent years. |
| 5 | Review and discussion of selected publications |
| 6 | Review and discussion of selected publications |
| 7 | Review and discussion of selected publications |
| 8 | MIDTERM EXAM |
| 9 | Basic Anatomy study techniques |
| 10 | Basic Anatomy study techniques |
| 11 | Formulating hypotheses and designing studies |
| 12 | Method selection and development |
| 13 | Evaluation and formulation of findings |
| 14 | Principles of turning the study into an article |
| 15 | Principles of turning the study into an article |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Discusses contemporary and specialized topics within the field of anatomy. |  |  | **x** |
| **LO 2** | Reviews and critically evaluates current literature related to selected anatomical subjects. |  |  | **x** |
| **LO 3** | Identifies research gaps and formulates relevant anatomical research questions. |  |  | **x** |
| **LO 4** | Designs a basic study protocol including objectives, methods, and ethical considerations in anatomical research. |  |  | **x** |
| **LO 5** | Applies anatomical knowledge to interdisciplinary research contexts and presents findings in an academic format. |  |  | **x** |
| **LO 6** |  |  |  |  |
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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204306** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | DEVELOPMENTAL NEUROBIOLOGY OF THE NERVOUS SYSTEM | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 3 | - | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | This course will cover neural induction and pattern formation, neurogenesis and migration, cellular differentiation, growth cones and axon guidance mechanisms, plasticity, early experience, and critical periods. Emphasis will be placed on programmed cell death and neurotrophic factors. | | |
| **COURSE AIMS** | The basic concepts of developmental neurobiology, especially those concerning mammals, will be explained and examples from studies on invertebrates will be given where appropriate. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students are expected to have up-to-date knowledge of this rapidly changing area of neuroscience and to demonstrate an understanding of the basic concepts of the development of the nervous system. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To understand the cellular and molecular mechanisms underlying the development of the nervous system, and to analyze normal and abnormal developmental processes in relation to neuroanatomy and neurological disorders. | | |
| **TEXTBOOK** | -Cowan WM, Jessell TM, Zipursky SL: Molecular and Cellular Approaches to Neural Development, Oxford University Press, New York, 1997.  -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Microscopy and Histological Imaging Tools, Access to Embryological Specimens or Models and Educational Videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Embryonic origins of the nervous system |
| 2 | Early neural morphogenesis and neural patterning |
| 3 | Neurogenesis and migration |
| 4 | Neuronal phenotypes and determinants |
| 5 | Growth cones and axon guidance |
| 6 | Axon guidance mechanisms |
| 7 | Control of topographical outcomes |
| 8 | MIDTERM EXAM |
| 9 | Synapse formation and elimination |
| 10 | Programmed cell death and its regulation |
| 11 | Patterns of cell death in developing neurons |
| 12 | The neurotrophin family, receptors and transmission mechanisms |
| 13 | Roles of neurotrophins in peripheral and central nervous system development |
| 14 | Early experience and critical periods |
| 15 | Concepts of constancy and plasticity |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the stages of nervous system development from neural induction to synaptogenesis and myelination. |  |  |  |
| **LO 2** | Explains the roles of genes, signaling pathways, and cellular interactions in neural differentiation and migration. |  |  |  |
| **LO 3** | Identifies key developmental events in the formation of the central and peripheral nervous systems. |  |  |  |
| **LO 4** | Evaluates congenital and developmental disorders of the nervous system from a neurobiological perspective. |  |  |  |
| **LO 5** | Interprets experimental findings and literature on neural development using current scientific methodologies. |  |  |  |
| **LO 6** |  |  |  |  |
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| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204307** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | SYSTEMS REGULATING BODY FUNCTIONS | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | This course examines the fundamental connections between the hypothalamus and various parts of the central nervous system and autonomic centers in order for the human body to maintain its functions in a stable manner. It also covers the organization and regulatory role of the autonomic nervous system in the regulation of these events and their clinical consequences. | | |
| **COURSE AIMS** | By examining the regulatory role and structural organization of the hypothalamus, it is aimed to review the connections it establishes with the main centers of the central nervous system or peripheral organ systems. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | At the end of this course, students will learn the hypothalamic connections necessary to regulate the functions of the human body in the face of changing environmental conditions. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To understand the integrative role of the hypothalamus, central nervous system, and autonomic nervous system in maintaining homeostasis, and to analyze their anatomical and functional organization in relation to clinical conditions | | |
| **TEXTBOOK** | -Zigmond MJ, Bloom FE, Landis SC, Roberts JL, Squire LR: Fundamental neuroscience, Academic press, 1999.  -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models, 3D Anatomy Imaging Softwares and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Boundaries and divisions of the hypothalamus |
| 2 | Functional organization of the hypothalamus |
| 3 | Hypothalamic afferents |
| 4 | Hypothalamic efferents |
| 5 | Central control of autonomic functions |
| 6 | Neural control of the heart |
| 7 | Neural control of breathing |
| 8 | MIDTERM EXAM |
| 9 | Central control of food intake |
| 10 | Central control of water intake and body fluids |
| 11 | Central control of body temperature |
| 12 | Anatomy of regulatory systems in the brainstem |
| 13 | Neuroendocrine systems: Brain-pituitary-organ axes |
| 14 | Circadian rhythms and adaptation of the organism |
| 15 | Neural mechanisms of motivation |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the anatomical organization and functional roles of the hypothalamus in regulating body functions. |  |  | **x** |
| **LO 2** | Explains the connections between the hypothalamus and other regions of the central nervous system. |  |  | **x** |
| **LO 3** | Identifies the structure and subdivisions of the autonomic nervous system and its role in homeostatic regulation. |  |  | **x** |
| **LO 4** | Evaluates the physiological mechanisms underlying autonomic control of cardiovascular, respiratory, digestive, and thermoregulatory functions. |  | **x** |  |
| **LO 5** | Interprets clinical conditions resulting from dysfunctions in hypothalamic and autonomic regulatory pathways. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
| **LO 8** |  |  |  |  |
| **LO 9** |  |  |  |  |
| **LO 10** |  |  |  |  |
| **LO 11** |  |  |  |  |
| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521206308** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | RADIOLOGICAL ANATOMY | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 1 | - | 2.5 | 5.0 | COMPULSORY | ELECTIVE |
| Autumn□ | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | In this course, basic information about Radiological Anatomy will be given. The x-ray anatomy of the locomotor system and other systems will be explained. The anatomy of the systems will be related to radiological anatomy. Topics: Skeletal, respiratory, digestive, urinary, genital system radiological anatomy. | | |
| **COURSE AIMS** | Identification of anatomical structures with the help of Radiological Anatomy. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | The student will relate radiological anatomy and anatomy knowledge. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To provide foundational knowledge of radiological anatomy by examining anatomical structures through imaging techniques, and to enable students to interpret normal anatomical features on radiographs across multiple body systems. | | |
| **TEXTBOOK** | Meschan, I: An Atlas of Anatomy Basic to Radiology, WB Saunders Company, Philadelphia, London, Toronto, 1975. | | |
| **OTHER REFERENCES** | Basic Radiology Technique, (editor: Tamer Kaya), Güneş&Nobel Bookstore, Bursa, 1997.  Moeller, TB, Reif, E.: Pocket Atlas of Radiographic Anatomy (Trans.: Tevfik Pınar), Hacettepe Doktorlar Publishing House, Ankara, 2001. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Annotated X-ray and Cross-sectional Image Sets, Projector or Display System for Image-Based Lectures and Access to Radiological Image Archives or PACS System | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Basic information about Radiological Anatomy |
| 2 | Bone development in radiological anatomy |
| 3 | Radiological Anatomy of the Upper Extremity |
| 4 | Radiological Anatomy of the Pelvis |
| 5 | Radiological Anatomy of the Lower Extremity |
| 6 | Radiological Anatomy of the Skull |
| 7 | Radiological Anatomy of the Brain |
| 8 | MIDTERM EXAM |
| 9 | Radiological Anatomy of the Vertebral Columna and Spinal Medulla |
| 10 | Radiological Anatomy of the Respiratory System |
| 11 | Radiological Anatomy of the Heart and Major Blood Vessels |
| 12 | Radiological Anatomy of the Upper Gastrointestinal System |
| 13 | Radiological Anatomy of the Small Intestine, Large Intestine and Bile Ducts |
| 14 | Radiological Anatomy of the Urinary System |
| 15 | Radiological Anatomy of the Genital System |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the basic principles and terminology of radiological anatomy and medical imaging. |  |  | **x** |
| **LO 2** | Identifies normal anatomical structures of the skeletal system on plain radiographs. |  |  | **x** |
| **LO 3** | Recognizes anatomical features of the respiratory, digestive, urinary, and genital systems in various imaging modalities. |  |  | **x** |
| **LO 4** | Correlates conventional anatomical knowledge with its radiological appearance in clinical practice. | **x** |  |  |
| **LO 5** | Interprets standard radiographic images to distinguish normal anatomical landmarks and variations. | **x** |  |  |
| **LO 6** |  |  |  |  |
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| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521206309** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **ANATOMY OF THE AUTONOMIC NERVOUS SYSTEM** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 1 | - | 2.5 | 5.0 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Identification of the autonomic nervous system and its connection with body systems,  To emphasize the effects of autonomic innervation on different organs and their importance in regulating different body systems. | | |
| **COURSE AIMS** | To provide the scientific basis for understanding the autonomic nervous system. To review the essential elements of the autonomic nervous system. To give their importance in controlling different body systems. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | By the end of this course, students should: Understand the relationship between normal and abnormal functions of the system. Be sufficiently aware of the topographic and microscopic anatomy of the system. Be able to interpret critical information appropriate to understanding this system. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To provide a comprehensive understanding of the structure and functional organization of the autonomic nervous system, and to analyze its connections with various body systems and its regulatory effects on organ function. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Development of the autonomic nervous system |
| 2 | Sympathetic system and its parts |
| 3 | Cranial division of the sympathetic system |
| 4 | Neck section of the sympathetic system |
| 5 | Thoracic section of the sympathetic system |
| 6 | Abdominal part of sympathetic system |
| 7 | Pelvic division of the sympathetic system |
| 8 | MIDTERM EXAM |
| 9 | Parasympathetic system and its parts |
| 10 | Cranial division of the parasympathetic system |
| 11 | Sacral division of the parasympathetic system |
| 12 | Plexuses of the autonomic nervous system I |
| 13 | Plexuses of the autonomic nervous system II |
| 14 | Higher centers that control the autonomic nervous system |
| 15 | Autonomic innervation of some organs |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the anatomical components and organization of the autonomic nervous system. |  |  | **x** |
| **LO 2** | Explains the structural and functional differences between the sympathetic and parasympathetic divisions. |  |  | **x** |
| **LO 3** | Identifies the autonomic pathways and their target organs across different body systems. |  | **x** |  |
| **LO 4** | Evaluates the role of autonomic innervation in the regulation of cardiovascular, respiratory, digestive, urinary, and reproductive functions. |  | **x** |  |
| **LO 5** | Interprets clinical conditions related to autonomic dysfunction based on anatomical principles. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
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| **LO 9** |  |  |  |  |
| **LO 10** |  |  |  |  |
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| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204310** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | ADVANCED UROGENITAL SYSTEM ANATOMY | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn□ | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | The development of the urogenital system, the mechanisms of the urinary and genital systems, the anatomy of the urinary organs, the anatomy and clinic of the male and female genital organs are explained at the doctoral level. | | |
| **COURSE AIMS** | Providing anatomical information about the systems and indicating their functional and clinical importance. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Being able to locate the structures of the systems in the body, comprehend their relationship with functions, and interpret them by providing clinical connections. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To provide doctoral-level knowledge on the development, structure, and function of the urinary and genital systems, and to analyze the clinical and surgical relevance of male and female urogenital anatomy. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Development of urinary organs |
| 2 | Development of genital organs |
| 3 | Kidneys |
| 4 | Ureter and bladder |
| 5 | Adrenal glands |
| 6 | Male and female urethra |
| 7 | Clinic of the urinary system |
| 8 | MIDTERM EXAM |
| 9 | Male external genitalia |
| 10 | Male internal genital organs |
| 11 | Female external genitalia |
| 12 | Female internal genital organs |
| 13 | Pelvic floor and ischiorectalis fossa |
| 14 | Retroperitoneal structures |
| 15 | Clinic of genital organs |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the detailed anatomy and functional organization of the urinary organs. |  |  | **x** |
| **LO 2** | Identifies the anatomical structures of male and female genital organs and explains their regional relationships. |  |  | **x** |
| **LO 3** | Explains the embryological development and differentiation of the urogenital system. | **x** |  |  |
| **LO 4** | Evaluates clinical, surgical, and pathological conditions of the urogenital system based on advanced anatomical knowledge. | **x** |  |  |
| **LO 5** | Interprets radiological, endoscopic, and cross-sectional images of the urinary and genital systems for clinical application. |  | **x** |  |
| **LO 6** |  |  |  |  |
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| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204311** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | FUNCTIONAL ANATOMY OF THE MOVEMENT SYSTEM | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 3 | 2 | - | 4 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Topics related to osteology, arthrology and myology will be discussed along with their functions and clinics. | | |
| **COURSE AIMS** | Providing detailed anatomical information regarding the movement system and stating its functional and clinical importance. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | To be able to locate the structures of the locomotor system in the body, understand their relationship with functions, and provide clinical connections. The student will be able to comment on this information. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To understand the anatomical structures of the locomotor system in relation to their functions, to identify their locations and interactions within the body, and to analyze their clinical relevance in movement and musculoskeletal disorders. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter FH:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Introduction to the movement system |
| 2 | Skull bones, columna vertebralis, costals, sternum |
| 3 | The whole head and face, columna vertebralis joints, thorax |
| 4 | Muscles of the head and neck region |
| 5 | Main vessels and nerves of the head and neck region |
| 6 | Back muscles, Chest muscles, diaphragm, main vessels and nerves |
| 7 | Abdominal muscles, major vessels and nerves |
| 8 | MIDTERM EXAM |
| 9 | Pelvic and perineal muscles, major vessels and nerves |
| 10 | Bones and joints of the upper extremity. |
| 11 | Upper extremity muscles |
| 12 | Upper extremity Main Vessels and Nerves |
| 13 | Lower extremity bones and joints. |
| 14 | Lower extremity muscles |
| 15 | Lower extremity main vessels and nerves |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Identifies the bones, joints, muscles, and connective tissues that make up the locomotor system. |  |  | **x** |
| **LO 2** | Explains the functional roles of locomotor system components in movement, posture, and force transmission. |  |  | **x** |
| **LO 3** | Describes the anatomical relationships between structures and how they coordinate during different types of movement. |  | **x** |  |
| **LO 4** | Evaluates the anatomical basis of musculoskeletal pathologies, functional limitations, and common clinical conditions. |  | **x** |  |
| **LO 5** | Interprets case studies and clinical scenarios using knowledge of functional anatomy. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
| **LO 8** |  |  |  |  |
| **LO 9** |  |  |  |  |
| **LO 10** |  |  |  |  |
| **LO 11** |  |  |  |  |
| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204312** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** [**IMMUNOFLUORESCENCE AND ENZYME-BASED** IMAGING PRINCIPLES AND APPLICATIONS](#DERS521202312) | | | | | | | |
| **LECTURER GIVING THE COURSE**  Prof. Dr. Yüksel AYDAR | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 3 | 2 | - | 4 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn□ | □ | 🗵 |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Antibodies, Basic immunohistochemistry, Basic immunofluorescence, Basic enzymology, Fixation, Antigen extraction, Staining methods, controls, background, In Situ Hybridization, Tissue processing, Possible difficulties and interpretation of results. | | |
| **COURSE AIMS** | To provide students with the knowledge, skills and principles of conducting scientific studies. To increase their ability to understand and interpret changes at the cellular and molecular level. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | To provide students with the knowledge, skills and principles of conducting scientific studies. To increase their ability to understand and interpret changes at the cellular and molecular level. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To provide a comprehensive understanding of the principles and practical applications of immunofluorescence and enzyme-based imaging techniques, focusing on tissue preparation, staining protocols, and the interpretation of microscopic results in biomedical research. | | |
| **TEXTBOOK** | Protein Localization by Fluorescence Microscopy: A Practical Approach by Victoria J. Allan., 2000; Immunohistochemistry: Basics and Methods,  Igor B. Buchwalow, Werner Böcker, 2010. | | |
| **OTHER REFERENCES** | - | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Microscopy and Histological Imaging Tools, Tissue Processing Equipment, Antibodies, Staining Kits and Enzymatic Substrates, Control Tissue Samples | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Antibodies I: Immunoglobulins, Polyclonal, Monoclonal Antibodies |
| 2 | Antibodies II: Antibody Affinity, Cross-Reactivity, Reaction Rates, and Antibody Durability, and Storage |
| 3 | Basic Immunohistochemistry: Antibody Titration, Dilution, and Incubation |
| 4 | Basic Immunofluorescence: Immunofluorescence Dyes, Working Principles |
| 5 | Basic Enzymology: Enzymes, Substrate and Chromogen Definition and Properties |
| 6 | Fixation: Cryostat Sections, Paraffin Embedded Sections, Cell Smears |
| 7 | Antigen Retrieval: Technique and Principles, Mechanism of Operation, Cytology, Target Retrieval for In Situ Hybridization, Use in Dual Staining |
| 8 | MIDTERM EXAM |
| 9 | Staining Methods I: Direct Staining, Two or Three-Step Indirect Staining, Soluble Enzyme Immunocomplex Techniques |
| 10 | Staining Methods II: (Strept)Avidin-Biotin (ABC) Staining Methods, Use of Labeled Streptavidin-Biotin, HRP, ALP, Staining with Several Antibodies Simultaneously |
| 11 | Controls: Reagent Control, Tissue Control (Negative, Positive and Internal) |
| 12 | Background: Hydrophobic, Ionic, and Electrostatic Interactions, Endogenous Enzyme/Streptavidin Activity, Native and Contaminated Antibodies, Antigen Diffusion, Cross-Reactivity, Fc Receptors |
| 13 | In Situ Hybridization |
| 14 | Processing of Tissues: Cell Smears, Cryostat Sections, Paraffin Embedded Sections, Fixation and Dewaxing |
| 15 | Problem Solving and Reading Stainings: Under-Staining, Dense/Partial Background, Unwanted Specific Staining |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Explains the structure, types, and roles of antibodies in immunohistochemical and immunofluorescent applications. |  |  | **x** |
| **LO 2** | Describes the basic principles of immunohistochemistry, immunofluorescence, enzymology, and in situ hybridization. |  |  | **x** |
| **LO 3** | Applies knowledge of tissue fixation, antigen retrieval, and staining protocols in laboratory settings. |  | **x** |  |
| **LO 4** | Identifies common sources of error such as background staining, poor fixation, or antibody specificity issues. |  | **x** |  |
| **LO 5** | Interprets and evaluates imaging results critically, including controls and potential technical challenges. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
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| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Yüksel AYDAR | **History** |

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| **COURSE CODE:** | **521204313** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | ADVANCED MOVEMENT SYSTEM ANATOMY | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Topics related to osteology, arthrology and myology will be discussed along with their function, topography and clinics. | | |
| **COURSE AIMS** | Providing detailed anatomical information regarding the movement system and stating its functional and clinical importance. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | To be able to locate the structures of the locomotor system in the body, understand their relationship with functions, and provide clinical connections. The student will be able to comment on this information. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To provide in-depth knowledge of osteology, arthrology, and myology with a focus on their structural features, functional roles, topographic relationships, and clinical significance in the human movement system. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: MedizinischeEmbryologie, Band: 1-3, GeorgThiemeVerlag, Stuttgart-New York.  -Moore, KL: ClinicallyOrientedAnatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray'sAnatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -NetterF.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K.Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Introduction to the movement system |
| 2 | Skull bones, columnavertebralis, ribs, sternum |
| 3 | The entire head and face, columbenvertebralis joints, thorax |
| 4 | Muscles of the head and neck region |
| 5 | Main vessels and nerves of the head and neck region |
| 6 | Back muscles, Chest muscles, diaphragm, main vessels and nerves |
| 7 | Abdominal muscles, major vessels and nerves |
| 8 | MIDTERM EXAM |
| 9 | Pelvic and perineal muscles, major vessels and nerves |
| 10 | Bones and joints of the upper extremity. |
| 11 | Upper extremity muscles |
| 12 | Upper extremity Main Vessels and Nerves |
| 13 | Lower extremity bones and joints. |
| 14 | Lower extremity muscles |
| 15 | Lower extremity main vessels and nerves |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Describes the detailed anatomy of bones, joints, and muscles involved in human movement. |  |  | **x** |
| **LO 2** | Explains the biomechanical principles and functional interactions between skeletal and muscular structures. |  |  | **x** |
| **LO 3** | Identifies the topographic organization and regional relationships of locomotor system components. |  |  | **x** |
| **LO 4** | Evaluates clinical conditions such as joint instability, muscle injuries, and degenerative disorders in relation to anatomical structures. |  | **x** |  |
| **LO 5** | Interprets radiological, surgical, and functional findings using advanced anatomical knowledge of the movement system. | **x** |  |  |
| **LO 6** |  |  |  |  |
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| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |

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| **COURSE CODE:** | **521204314** | | **DEPARTMENT:** | **ANATOMY** | | | |
| **COURSE NAME:** | **ADVANCED NERVOUS SYSTEM ANATOMY** | | | | | | |
| **LECTURERS GIVING THE COURSE**  Prof. Dr. Ferruh YÜCEL  Prof. Dr. Hilmi ÖZDEN  Prof. Dr. Yüksel AYDAR  Assoc. Prof. Abdullah ORTADEVECİ  Assist. Prof. Dr. Hakan AY  Instr. Dr. Aybars KÖKCE  Instr. Dr. Yadigar AKBAŞ  Instr. Dr. Burak KÜÇÜK | | **COURSE LANGUAGE**  **Turkish :**🗵  **English :**□ | | | **Category of the Course** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **SCIENTIFIC PREPARATION** | **DEGREE** | **DOCTORATE** | **SPECIALIZED FIELD COURSE** |
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| **SEMESTER** | **WEEKLY CLASS HOURS** | | | **YOUR COURSE** | | | |
| **Theoretical** | **APPLICATION** | **Lab** | **Credit** | **ECTS** | **TYPE** | |
| Spring🗵 | 2 | 2 | - | 3 | 7.5 | COMPULSORY | ELECTIVE |
| Autumn□ | 🗵 | □ |

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| **EVALUATION CRITERIA** | | | |
| **SEMESTER ACTIVITIES** | **Type of activity** | **Number** | **Percentage (%)** |
| Midterm Exam | **1** | **50** |
| Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral examination |  |  |
| Other (………) |  |  |
| **Final Exam** | | **50** |
| **PREREQUISITE(S)** | - | | |
| **SHORT COURSE CONTENT** | Information on the anatomy of the central nervous system will be given. | | |
| **COURSE AIMS** | Providing anatomical information about the system and stating its functional importance. | | |
| **COURSE CONTRBUTION TO THE PROFESSIONAL EDUCATION OBJECTIVES** | Determining the location of the structures belonging to the system in the body, understanding their relationship with functions, and providing clinical connections. | | |
| **LEARNING OUTCOMES OF THE COURSE** | To develop advanced understanding of the anatomical organization of the nervous system by identifying the location of its structures, analyzing their functional relationships, and interpreting their clinical significance. | | |
| **TEXTBOOK** | -Arıncı, K, Elhan, A: Anatomy, Volume 1-2, 2nd Edition, Güneş Bookstore, Ankara, 1997.  -Langman Jan: Medizinische Embryologie, Band: 1-3, George Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3rd Edition, Williams and Wilkins, Baltimore, 1992.  -Williams PL: Gray's Anatomy, 38th edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | |
| **OTHER REFERENCES** | -Netter F.H.: Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta Human Anatomy (translation: K. Arıncı), Beta Printing Publishing Distribution Inc., Istanbul, 1993. | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | Cadavers, cadaveric organs, life-like models and educational videos | | |

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| **WEEKLY PLAN OF THE COURSE** | |
| **WEEK** | **TOPICS COVERED** |
| 1 | Formation of the nervous system |
| 2 | Neuron and its types |
| 3 | Classification of senses and general information |
| 4 | Receptors and their grouping |
| 5 | Medulla spinalis |
| 6 | Bulbus |
| 7 | Pons |
| 8 | MIDTERM EXAM |
| 9 | Cerebellum |
| 10 | Mesencephalon |
| 11 | Diencephalon |
| 12 | Telencephalon, cortical centers |
| 13 | Rhinencephalon, libido system and olfactory tracts |
| 14 | Basal ganglia and extrapyramidal system |
| 15 | Ventricles, meninges and vessels |
| 16 | END OF SEMESTER EXAM |

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| **CONTRIBUTION OF THE COURSE FOR LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Ph.D)** | **1**  **Low** | **2**  **Mid** | **3**  **High** |
| **LO 1** | Identifies the detailed anatomy and topographic location of central and peripheral nervous system structures. |  |  | **x** |
| **LO 2** | Explains the functional roles of different neural structures and pathways in sensory, motor, and integrative processes. |  |  | **x** |
| **LO 3** | Describes the structural connections between different regions of the brain, spinal cord, and peripheral nerves. |  |  | **x** |
| **LO 4** | Evaluates clinical conditions such as neurological deficits, lesions, and neuropathies based on anatomical localization. |  | **x** |  |
| **LO 5** | Interprets radiological, surgical, and electrophysiological data in relation to nervous system anatomy. | **x** |  |  |
| **LO 6** |  |  |  |  |
| **LO 7** |  |  |  |  |
| **LO 8** |  |  |  |  |
| **LO 9** |  |  |  |  |
| **LO 10** |  |  |  |  |
| **LO 11** |  |  |  |  |
| **LO 12** |  |  |  |  |
| **LO 13** |  |  |  |  |
| **LO 14** |  |  |  |  |

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| **Course Instructor Signature**  Prof. Dr. Ferruh YÜCEL,  Prof. Dr. Hilmi ÖZDEN,  Prof. Dr. Yüksel AYDAR,  Asst. Prof. Dr. Hakan AY,  Assoc. Prof. Abdullah ORTADEVECİ,  Lecturer Dr. Aybars KÖKCE,  Lecturer Dr. Yadigar AKBAŞ,  Lecturer Dr. Burak KÜÇÜK. | **History** |