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| **DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**  **Doctor of Philosophy** **(PhD)** **Programme** | | | | | |
| Code | Course Name | ECTS | T+P+L | C/E | Language |
| Güz Dönemi | | | | | |
| 521201305 | ANATOMY OF THE CENTRAL NERVOUS SYSTEM | 12 | 3+2+0 | ELECTIVE | TURKISH |
| 521201307 | INTEGRATION OF THE CORTICAL FUNCTIONS | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521202302 | SENSORY AND MOTOR SYSTEMS | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 21301319 | CONTROL OF MOTOR FUNCTIONS | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521301309 | CHEMISTRY OF CENTRAL NERVOUS SYSTEM | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521301311 | NEURO-IMMUNO MODULATION | 6 | 2+0+0 | ELECTIVE | TURKISH |
| 522101301 | NEUROBIOPHYSICS I | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521702303 | PHARMACOLOGY OF CENTRAL NERVOUS SYSTEM I | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521701303 | PHARMACOLOGY OF THE AUTONOM NERVOUS SYSTEMS I | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 22601700 | SPECIALITY FIELD STUDIES | 5 | 3+0+0 | ELECTIVE | TURKISH |
| Fall Semester Total: | | **86** |  |  |  |
| Bahar Dönemi | | | | | |
| 521902303 | DEVELOPMENT AND HİSTOLOGY OF NERVOUS SYSTEM ORGANS | 6 | 2+0+0 | ELECTIVE | TURKISH |
| 521202303 | ANATOMY OF THE PERIPHERAL NERVOUS SYSTEM | 10.5 | 3+1+0 | ELECTIVE | TURKISH |
| 521202309 | ANATOMY OF THE AUTONOMIC NERVOUS SYSTEM | 7.5 | 2+1+0 | ELECTIVE | TURKISH |
| 521202306 | DEVELOPMENTAL NEUROBIOLOGY OF THE NERVOUS SYSTEM | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521302309 | NEUROTRANSMITTERS | 6 | 2+0+0 | ELECTIVE | TURKISH |
| 521302311 |  | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522102301 | NEUROBIOPHYSICS II | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521102304 | CELLULAR MECHANISMS OF DEVELOPMENT | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522402313 | MOLECULAR APPROACHES OF NEUROSCIENCE | 6 | 2+0+0 | ELECTIVE | TURKISH |
| 521702305 | PHARMACOLOGY OF CENTRAL NERVOUS SYSTEM II | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521701306 | PHARMACOLOGY OF THE AUTONOM NERVOUS SYSTEMS II | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522602301 | NEURODEGENERATIVE DISEASES AND MOLECULAR MECHANİSMS | 9 | 2+2+0 | ELECTIVE | TURKISH |
| 22601700 | SPECIALITY FIELD STUDIES | 5 | 3+0+0 | ELECTIVE | TURKISH |
| Spring Semester Total: | | **104** |  |  |  |
| Year Total: | | **190** |  |  |  |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521201305** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Anatomy of the Central Nervous System** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr. Ferruh YÜCEL | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | 🗴 |  |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.Sc.** | **Ph.D.** | **COURSE of PROVINCE** |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE of** | | | | | |
| **Theoric** | **Practice** | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | | |
| Spring □  Autumn 🗵 | 3 | 2 | - | | 4 | 12 | | COMPULSORY ELECTIVE  □🗵 | | |
|  | | | | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | **ACTIVITY** | | | | | | **Quantity** | | **Percentage (%)** |
| 1st Mid-Term | | | | | | **1** | | **50** |
| 2 nd Mid- Term | | | | | |  | |  |
| Quiz | | | | | |  | |  |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other (………) | | | | | |  | |  |
| **FINAL** | | Quiz | | | | | | **1** | | **50** |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other(……………….) | | | | | |  | |  |
| **MAKE-UP EXAM** | | Oral | | Written | | | Oral and Written | | Multiple Choice | |
|  | |  | | | 🗴 | |  | |
| **PREREQUISITE(S)** | | - | | | | | | | | |
| **COURSE CONTENT** | | Describe the central nervous system and its parts. A description of the functions and connections of the central nervous system. Consider their clinical significance. | | | | | | | | |
| **COURSE AIMS** | | To describe the morphology of the central nervous system. To discuss the clinical significance of the central nervous system and its functions. | | | | | | | | |
| **COURSE OBJECTIVES** | | At the end of the course students should: Have a sufficient knowledge on the central nervous system. Be able to evaluate the clinical problems arised from the central nervous system. | | | | | | | | |
| **TEXTBOOK(S)** | | -Arıncı, K, Elhan, A: Anatomi, Cilt 1-2, 2. Baskı, Güneş Kitabevi, Ankara, 1997.-Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.-Moore, KL: Clinically Oriented Anatomy. 3th Edition, Williams and Wilkins, Baltimore, 1992.-Williams P.L.: Gray’s Anatomy, 38.edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | | | | | | | |
| **REFERENCES** | | -Netter F.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.-Putz R, Pabst R.: Sobotta İnsan Anatomisi (çeviri: K.Arıncı), Beta Basım Yayın Dağıtım A.Ş., İstanbul, 1993. | | | | | | | | |
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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS** |
| 1 | Development of central nervous system |
| 2 | Neurons and their types |
| 3 | Organization of senses |
| 4 | Features of sensory receptors, classification of receptors |
| 5 | Spinal cord |
| 6 | Bulbus |
| 7 | Pons |
| 8 | MID-TERM EXAM |
| 9 | Cerebellum |
| 10 | Mesencephalon, |
| 11 | Diencephalon |
| 12 | Telencephalon, the main cortical areas |
| 13 | Rhinencephalon, limbic lobe and olfactory pathways |
| 14 | Basal nuclei and extrapyramidal system |
| 15 | Ventricular system, meninges of the brain, cranial vessels |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM QUTCOMES** | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | 🗴 |
| 2 | ask scientific questions and form hypothesis |  |  | 🗴 |
| 3 | search and interpret scientific literature |  |  | 🗴 |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | 🗴 |  |
| 5 | learn how to use the experimental equipment effectively |  | 🗴 |  |
| 6 | function on multi-disciplinary teams |  |  | 🗴 |
| 7 | identify, formulate, and solve medical problems |  |  | 🗴 |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | 🗴 |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | 🗴 |  |
| 10 | use effective written and oral communication/presentation skills |  | 🗴 |  |
| 11 | get an understanding of professional and ethical responsibility |  | 🗴 |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | 🗴 |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name:**  **Sign:**  Prof.Dr. Ferruh YÜCEL |  | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

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| **COURSE CODE:** | **521201307** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **İntegration of the Cortical Functions** | | | | | |
| **INSTRUCTOR NAME**    Prof.Dr. Emel ULUPINAR | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | 🗴 |  |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.Sc.** | **Ph.D.** | **COURSE of PROVINCE** |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE of** | | | | | |
| **Theoric** | **Practice** | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | | |
| Spring □  Autumn 🗵 | 3 | - | - | | 3 | 9 | | COMPULSORY ELECTIVE  □🗵 | | |
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| **ASSESMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | **ACTIVITY** | | | | | | **Quantity** | | **Percentage (%)** |
| 1st Mid-Term | | | | | | **1** | | **50** |
| 2 nd Mid- Term | | | | | |  | |  |
| Quiz | | | | | |  | |  |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other (………) | | | | | |  | |  |
| **FINAL** | | Quiz | | | | | | **1** | | **50** |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other(……………….) | | | | | |  | |  |
| **MAKE-UP EXAM** | | Oral | | Written | | | Oral and Written | | Multiple Choice | |
|  | |  | | | 🗴 | |  | |
| **PREREQUISITE(S)** | | - | | | | | | | | |
| **COURSE CONTENT** | | In this course, basic anatomic knowledge is taught about spinal cord, bulbus, pons, mesencephalon, cerebellum, cranial nerves, diencephalons, cerebral hemispheres. It is told the ascending and descending tracts of spinal cord, is given the knowledge about the control of the activity and somatic sensory systems and given some examples about the clinical tables of neuroanatomy. | | | | | | | | |
| **COURSE AIMS** | | Gain the knowledge about the functional areas of the cortex and relation of spinal cord, cerebellum, thalamus, hypothalamus, extrapyramidal systems and cranial nerves. | | | | | | | | |
| **COURSE OBJECTIVES** | | The understanding of the integration of cortical functions by using anatomy knowledge. | | | | | | | | |
| **TEXTBOOK(S)** | | -Waxman, SG.: Korrelatif Nöroanatomi. (Çev editörü: Mehmet Yıldırım) Nobel Istanbul.2002.  -Arıncı, K, Elhan, A: Anatomi, Cilt 1-2, 2. Baskı, Güneş Kitabevi, Ankara, 1997.  -Çimen, A: Anatomi. Uludağ Üniversitesi Basımevi, Bursa, 1987.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Thompson, JS: Core Textbook of Anatomy. J.B. Lippincott Company. 1977.  -Williams P.L.: Gray’s Anatomy, 38.edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | | | | | | | |
| **REFERENCES** | | -Snell, SR.: Clinical Neuroanatomy for medical students. Second Edition, Little, Brown and Company Boston/ Toronto, 1987.  -Netter F.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.  -Putz R, Pabst R.: Sobotta İnsan Anatomisi (çeviri: K.Arıncı), Beta Basım Yayın Dağıtım A.Ş., İstanbul, 1993. | | | | | | | | |
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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS** |
| 1 | Spinal cord |
| 2 | The descending tracts of the spinal cord |
| 3 | The ascending tracts of the spinal cord |
| 4 | Microscopic anatomy of the spinal cord |
| 5 | The medulla oblongata, pons, mesencephalon and cerebellum. |
| 6 | The basic information about cranial nerves. |
| 7 | The anatomy and functions of Diencephalon (Thalamus, hypothalamus, subthalamus, epithalamus). |
| 8 | MIDTERM |
| 9 | Anatomy of the cerebral hemispheres |
| 10 | The structure and Functional localization of the cerebral cortex. |
| 11 | Segmental innervation of skin. |
| 12 | Control of the activity |
| 13 | Somatic sensory systems. |
| 14 | The reticular Formation and the limbic system. |
| 15 | The relationships between neuroanatomy and neurology, Clinical problems. |
| 16 | Spinal cord |

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| **NO** | **PROGRAM QUTCOMES** | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | 🗴 |
| 2 | ask scientific questions and form hypothesis |  |  | 🗴 |
| 3 | search and interpret scientific literature |  |  | 🗴 |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | 🗴 |  |
| 5 | learn how to use the experimental equipment effectively |  | 🗴 |  |
| 6 | function on multi-disciplinary teams |  |  | 🗴 |
| 7 | identify, formulate, and solve medical problems |  |  | 🗴 |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | 🗴 |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | 🗴 |  |
| 10 | use effective written and oral communication/presentation skills |  | 🗴 |  |
| 11 | get an understanding of professional and ethical responsibility |  | 🗴 |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | 🗴 |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name:**  **Sign:**  Prof.Dr. Emel ULUPINAR |  | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

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| **COURSE CODE:** | **521202302** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Sensory and Motor Systems** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr. Emel ULUPINAR | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | 🗴 |  |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.Sc.** | **Ph.D.** | **COURSE of PROVINCE** |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE of** | | | | | |
| **Theoric** | **Practice** | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | | |
| Spring 🗵  Autumn □ | 3 |  | - | | 3 | 9 | | COMPULSORY ELECTIVE  □🗵 | | |
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| **ASSESMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | **ACTIVITY** | | | | | | **Quantity** | | **Percentage (%)** |
| 1st Mid-Term | | | | | | **1** | | **50** |
| 2 nd Mid- Term | | | | | |  | |  |
| Quiz | | | | | |  | |  |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other (………) | | | | | |  | |  |
| **FINAL** | | Quiz | | | | | | **1** | | **50** |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other(……………….) | | | | | |  | |  |
| **MAKE-UP EXAM** | | Oral | | Written | | | Oral and Written | | Multiple Choice | |
|  | |  | | | 🗴 | |  | |
| **PREREQUISITE(S)** | | - | | | | | | | | |
| **COURSE CONTENT** | | This course first describes the general arrangement and organization of each sensory system by bringing information from the peripheral receptors to all the way up to the cortex. The second part on the other hand describes the motor systems, in one way, turning the sensory system backward. | | | | | | | | |
| **COURSE AIMS** | | To explain how the information enters the sensory system through receptors and move up to the top of the system. Then motor information moves down through stages to the effectors: the muscles. | | | | | | | | |
| **COURSE OBJECTIVES** | | By the end of this course, students will learn the basic principles of sensory and motor systems. | | | | | | | | |
| **TEXTBOOK(S)** | | -Haines D.E.: Fundamental Neuroscience, Churchill Livingstone, 1997.  -Arıncı, K, Elhan, A: Anatomi, Cilt 1-2, 2. Baskı, Güneş Kitabevi, Ankara, 1997.  -Dere, F: Anatomi, Cilt 1-2, 2. Baskı, Okullar Pazarı Kitabevi, Adana, 1990.  -Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.  -Moore, KL: Clinically Oriented Anatomy. 3th Edition, Williams and Wilkins, Baltimore, 1992.  - Snell R.S.: Uygulamalı Anatomi (çeviri editörü: K. Arıncı), Türkiye Klinikleri Yayınevi, Ankara, 1993.  -Thompson, JS: Core Textbook of Anatomy. J.B. Lippincott Company. 1977.  -Williams P.L.: Gray’s Anatomy, 38.edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | | | | | | | |
| **REFERENCES** | | -Netter F.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.-Putz R, Pabst R.: Sobotta İnsan Anatomisi (çeviri: K.Arıncı), Beta Basım Yayın Dağıtım A.Ş., İstanbul, 1993. | | | | | | | | |
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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS** |
| 1 | Fundamentals of sensory systems and parallel processing |
| 2 | Receptors and sensory transduction |
| 3 | Structure, function and connections of sensory cortex |
| 4 | Chemical senses: taste and olfaction |
| 5 | The somatosensory system |
| 6 | The auditory system |
| 7 | The visual system |
| 8 | MID-TERM EXAM |
| 9 | Fundamentals of motor systems |
| 10 | Motor neurons and muscle afferents |
| 11 | Principles of spinal motor control |
| 12 | Supraspinal control of posture |
| 13 | Control of voluntary movements |
| 14 | Organization of the motor cortex |
| 15 | Eye movements |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM QUTCOMES** | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | 🗴 |
| 2 | ask scientific questions and form hypothesis |  |  | 🗴 |
| 3 | search and interpret scientific literature |  |  | 🗴 |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | 🗴 |  |
| 5 | learn how to use the experimental equipment effectively |  | 🗴 |  |
| 6 | function on multi-disciplinary teams |  |  | 🗴 |
| 7 | identify, formulate, and solve medical problems |  |  | 🗴 |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | 🗴 |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | 🗴 |  |
| 10 | use effective written and oral communication/presentation skills |  | 🗴 |  |
| 11 | get an understanding of professional and ethical responsibility |  | 🗴 |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | 🗴 |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name:**  **Sign:**  Prof.Dr. Emel ULUPINAR |  | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521301314** | | **DEPARTMENT: Physiology** | | | |
| **COURSE NAME*:* Control of Motor Functions** | | | | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Ziya KAYGISIZ | | **COURSE LANGUAGE**  **Turkish: X**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |
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**COURSE LEVEL**

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

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring  Autumn **X** | 3 | 0 |  |  | 3 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | **1** | **50** |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(…Final Writtrn…………….) | | | **1** | **50** |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | | **X** |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Cerebral cortex, motor areas, control of motor functions | | | | |
| **COURSE AIMS** | | | To teach cerebral cortex, motor areas and control of motor functions | | | | |
| **COURSE OBJECTIVES** | | | To answer the questions about cerebral cortex, motor areas and control of motor functions | | | | |
| **TEXTBOOK(S)** | | | Baret K. Ganong’s Review of Medical Physiology, 23 Edition Mc Graw Hill, Lange, 2010: Hall JE. Guyton and Hall Textbook of Medical Physiology, 12th Edition; Saunders; Elsevier, 2011. | | | | |
| **REFERENCES** | | |  | | | | |
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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Cerebral motor cortex and motor areas |
| 2 |  | Cerebral motor cortex and motor areas |
| 3 |  | Corticospinal tract |
| 4 |  | Corticospinal and corticobulbar tract |
| 5 |  | Control of axial and distal muscle |
| 6 |  | Voluntary movement |
| 7 |  | Voluntary movement |
| 8 |  | Midterm Exam |
| 9 |  | Brain stem pathways in controlling motor functions |
| 10 |  | Decerebration |
| 11 |  | Cerebellum |
| 12 |  | Basal ganglia |
| 13 |  | Contribution of the cerebellum to motor control |
| 14 |  | Contribution of the basal ganglia to motor control |
| 15 |  | Contribution of the spinal cord to motor control |
| 16 |  |  |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | **x** |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  | **x** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  | **x** |  |
| 6 | function on multi-disciplinary teams |  |  | **x** |
| 7 | identify, formulate, and solve medical problems |  |  | **x** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | **x** |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **x** |
| 10 | use effective written and oral communication/presentation skills |  | **x** |  |
| 11 | get an understanding of professional and ethical responsibility |  | **x** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |
| 13 | other (……………………………………….) |  |  | **x** |
| 14 | other (……………………………………….) |  | **x** |  |

|  |  |
| --- | --- |
| **Instructor Name**  **Sign**  Prof. Dr. Ziya Kaygısız | **Date**  12.04.2013 |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521301309** | | **DEPARTMENT: Physiology** | | | |
| **COURSE NAME*:***  **Chemistry of Central Nervous System** | | | | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Neşe TUNÇEL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |

**COURSE LEVEL**

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

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  ** X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 25 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | | **3** | **5** |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | | **2** | **10** |
| Project | | |  |  |
| Oral Exam | | | **x** | **60** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
| **X** | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Physiologic role of glutamatergic, dopaminergic, noradrenegic, adrenergic, cholinergic GABAergic and peptidergic nörons. Localisation and synaptic junctions in the brain. | | | | |
| **COURSE AIMS** | | | Improve knowledge on complicated neurotranmission in the brain. Experimental designs for study on various behavior model and related mediators in the brain | | | | |
| **COURSE OBJECTIVES** | | | To teach the molecules that responsible for various brain activity such as behavior, defence, memory and emotion. | | | | |
| **TEXTBOOK(S)** | | | Neuroscience, edited by Solomon H. Snyder  Textbook of Physiology, Patton, Fushs, Hille, Scher, Steiner  Textbook of Medical Physiology, Guyton  Medical physiology, Ganong | | | | |
| **REFERENCES** | | | Various Journals related with neuroscience | | | | |

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| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Aminergic systems in the brain |
| 2 |  | Serotonergic systems in the brain |
| 3 |  | Noradrenergic systems in the brain |
| 4 |  | Adrenergic systems in the brain |
| 5 |  | Dopaminergic systems in the brain |
| 6 |  | Histaminergic systems in the brain |
| 7 |  | Cholinergic systems in the brain |
| 8 |  | Mid-term exam |
| 9 |  | Opiatergic systems in the brain |
| 10 |  | Other peptidergic systems in the brain |
| 11 |  | GABAergic systems in the brain |
| 12 |  | Paper discussion |
| 13 |  | Paper discussion |
| 14 |  | Paper discussion |
| 15 |  | Paper discussion |
| 16 |  | Paper discussion |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **x** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  | **x** |  |
| 6 | function on multi-disciplinary teams |  | **x** |  |
| 7 | identify, formulate, and solve medical problems |  | **x** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **x** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **x** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **x** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |

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| --- | --- |
| **Instructor Name**  **Sign**  Prof. Dr. Neşe TUNÇEL | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521301311 | | **DEPARTMENT: Physiology** | | | |
| **COURSE NAME*:*** | **Neuroimmunomodulation** | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Neşe TUNÇEL | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |

**COURSE LEVEL**

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

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring ****  Autumn **X** | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  ** X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 25 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | | **3** | **5** |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | | **2** | **10** |
| Project | | |  |  |
| Oral Exam | | | **x** | **60** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
| **X** | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Bidirectional interactions between nervous and immune system. Croos-talk of immune and nervous system. Molecules that share both immune and nervous system. The role of immune system in neuronal activation. | | | | |
| **COURSE AIMS** | | | Provide two-sided understaning of immune and neuronal reponses. | | | | |
| **COURSE OBJECTIVES** | | | Functional relationship between nervous and immune system. | | | | |
| **TEXTBOOK(S)** | | | - | | | | |
| **REFERENCES** | | | NIPS and Various Journals | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Neuroimmünomodulation definition |
| 2 |  | Neuroendocrine regulation of the immune system structures |
| 3 |  | Neuroendocrine regulation of thymus-dependent immune system |
| 4 |  | Opioid peptides and immunity |
| 5 |  | The role of melatonin in immune regulation |
| 6 |  | Conditioning and natural immunity |
| 7 |  | Sleep and immunity |
| 8 |  | Mid-term exam |
| 9 |  | Common molecules of neurons and immune cells |
| 10 |  | Paper discussion |
| 11 |  | Paper discussion |
| 12 |  | Paper discussion |
| 13 |  | Paper discussion |
| 14 |  | Paper discussion |
| 15 |  | Paper discussion |
| 16 |  | Paper discussion |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **x** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  | **x** |  |
| 6 | function on multi-disciplinary teams |  | **x** |  |
| 7 | identify, formulate, and solve medical problems |  | **x** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **x** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **x** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **x** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name**  **Sign**  Prof. Dr. Neşe TUNÇEL | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COURSE CODE: 522101301** |  | **DEPARTMENT: BIOPHYSICS** | | |
| **COURSE NAME: NEUROBIOPHYSICS I** |  |  | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Ferhan ESEN** | **COURSE LANGUAGE**  **Turkish: X**  **English:** | **Course Catagory** | | |
| Technical | Medical | Other (……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

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

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring  Autumn **X** | 3 | - | - | 3 | 9 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | **1** | **40** |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | | **1** | **20** |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Written | | | **1** | **40** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | |  | **X** |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Membranes and their Role in Functioning of Excitable Cells, Structure of Biological Membranes, Passive Transport, Active Transport, Description of Membranes by Equivalent Electric Circuits, Passive Spread of Potential Changes, Active Propagation of The Electric Signals, The Nerve Impulse, Voltage And Patch Clamp Techniques, Potentials in A Volume Conductor. | | | | |
| **COURSE AIMS** | | | The purpose of this course is to present the basic knowledge associated with excitable biological membranes. | | | | |
| **COURSE OBJECTIVES** | | | Students should be able to apply the fundamental principles given here to the second part of this course, for a deeper understanding of “excitability” as a whole. | | | | |
| **TEXTBOOK(S)** | | | **Vasilescu V. Margineanu D.G**.: Introduction to Neurobiophysics. Abacus Press. 1982. | | | | |
| **REFERENCES** | | | **Hoppe W., Lohmann W., Markl H., Ziegler H. (eds):** Biophysics, Springer-Verlag, Berlin 1983. **Pehlivan F.:** Biyofizik (2.Baskı), Hacettepe-Taş Kitapçılık, Ankara, 1997. **Esen F.:** Ders Notları, ESOGÜTF Biyofizik Anabilim Dalı. **Ruch T.C, Patton H.D**: Physiology and Biophysics (19.Edition), Saunders. | | | | |

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| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Models of the Molecular Architecture of Biological Membranes |
| 2 |  | Membrane Transport |
| 3 |  | Resting Potential of Cells |
| 4 |  | Transport Mediators and Ionic Channels |
| 5 |  | Active Transport |
| 6 |  | Models of Na-K Pumps |
| 7 |  | Origins of Membrane Potential |
| 8 |  | Description of Membranes by Equivalent Electric Circuits |
| 9 |  | Cable Properties of The Axons |
| 10 |  | Electrotonic (Passive) Spread of the Electric Signals over the Cell Membrane |
| 11 |  | Active Properties of the Cell Membrane |
| 12 |  | Conduction of Action Potentials in Nerve Fibers |
| 13 |  | Voltage and Patch Clamp Techniques |
| 14 |  | Propagation of the Electric Signals in Excitable Membrane |
| 15 |  | Hodgkin-Huxley Equation |
| 16 |  | Electrical Potentials in a Volume Conductor |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **X** |
| 3 | search and interpret scientific literature |  | **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X** |
| 5 | learn how to use the experimental equipment effectively |  |  | **X** |
| 6 | function on multi-disciplinary teams |  | **X** |  |
| 7 | identify, formulate, and solve medical problems |  |  | **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | **X** |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **X** |
| 10 | use effective written and oral communication/presentation skills |  |  | **X** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **X** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **X** |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

|  |  |
| --- | --- |
| **Instructor Name**  **Sign**  **Prof.Dr. Ferhan ESEN** | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521702303 | | **DEPARTMENT: Pharmacology** | | | |
| **COURSE NAME:** | Pharmacology of Central Nervous System I | | | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Fatma Sultan KILIÇ | | **COURSE LANGUAGE**  **Turkish: x**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | x |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

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

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring  Autumn **X** | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  **x** | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 50 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(……written………….) | | | **1** | **50** |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Neurotransmitter systems in central nervous system, amine neurotransmittres, amino acide neurotransmitters, peptide neurotransmitters, adenosinergic system, nitrergic system, neurosteroid system | | | | |
| **COURSE AIMS** | | | To teach the neurotransmitter systems in central nervous system | | | | |
| **COURSE OBJECTIVES** | | | To be able to realize the basic neurotransmitters | | | | |
| **TEXTBOOK(S)** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman | | | | |

|  |  |  |
| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | History and introduction |
| 2 |  | Neuromediators, synaps amd interactions |
| 3 |  | Dopaminergic system |
| 4 |  | Epinephrine and norepinephrine |
| 5 |  | Serotonine |
| 6 |  | Acetylcholine |
| 7 |  | Histamine |
| 8 |  | **Mid term exam** |
| 9 |  | GABA and glycine |
| 10 |  | Aspartate and glutamate |
| 11 |  | Opioide peptides |
| 12 |  | Substance P, other kinines and neuropeptides |
| 13 |  | Nitrergic system |
| 14 |  | Adenosinergic system |
| 15 |  | Neurosteroides |
| 16 |  | **Final exam** |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NO** |  | | **1** | **2** | | **3** |
| 1 | gather as well as apply knowledge of health sciences | |  |  | | **x** |
| 2 | ask scientific questions and form hypothesis | |  |  | | **x** |
| 3 | search and interpret scientific literature | |  |  | | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data | |  |  | | **x** |
| 5 | learn how to use the experimental equipment effectively | |  | **x** | |  |
| 6 | function on multi-disciplinary teams | |  |  | | **x** |
| 7 | identify, formulate, and solve medical problems | |  | **x** | |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | |  | **x** | |  |
| 9 | understand the impact of experimental solutions on national and international sciences | |  |  | | **x** |
| 10 | use effective written and oral communication/presentation skills | |  | **x** | |  |
| 11 | get an understanding of professional and ethical responsibility | |  |  | | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | |  |  | | **x** |
| **Instructor Name**  Prof. Dr. Fatma Sultan KILIÇ | | **Date**  15.11.2012 | | |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521701303 | | **DEPARTMENT: Pharmacology** | | | |
| **COURSE NAME:** | Pharmacology of the Autonom Nervous Systems I | | | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Kevser EROL | | **COURSE LANGUAGE**  **Turkish: x**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | x |  |

**COURSE LEVEL**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring****  Autumn**x** | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  **x ** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 50 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(……written………….) | | | **1** | **50** |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | General information about the autonomous nerve system and providing information about autonomic ganglions | | | | |
| **COURSE AIMS** | | | Overseeing the information about autonomus nerve systems | | | | |
| **COURSE OBJECTIVES** | | | Informing the students about endications, counterendications and effects of the medicines of this system: | | | | |
| **TEXTBOOK(S)** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Introduction to Autonomic Nervous Systems |
| 2 |  | Introduction to Autonomic Nervous Systems |
| 3 |  | Neurohumoral Transmission of Autonom Nervous System |
| 4 |  | Neurohumoral Transmission of Autonom Nervous System |
| 5 |  | Biosynthesis and Biotransformation of Acetylcholine |
| 6 |  | Cholinergic receptors |
| 7 |  | **Mid-Term Exam** |
| 8 |  | Biosynthesis and Biotransformation of Catecholamines |
| 9 |  | Biosynthesis and Biotransformation of Catecholamines |
| 10 |  | Adrenergic receptors |
| 11 |  | Adrenergic receptors |
| 12 |  | Structures and neurotransmitters of autonomic ganglia |
| 14 |  | Ganglionic stimulatory drugs |
| 15 |  | Ganglionic blocker drugs |
| 16 |  | **Final exam** |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO** |  | | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences | |  | **X** |  |
| 2 | ask scientific questions and form hypothesis | |  |  | **X** |
| 3 | search and interpret scientific literature | |  |  | **X** |
| 4 | design and conduct experiments as well as analyze and interpret the data | |  | **X** |  |
| 5 | learn how to use the experimental equipment effectively | |  | **X** |  |
| 6 | function on multi-disciplinary teams | |  | **X** |  |
| 7 | identify, formulate, and solve medical problems | |  |  | **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | |  | **X** |  |
| 9 | understand the impact of experimental solutions on national and international sciences | |  |  | **X** |
| 10 | use effective written and oral communication/presentation skills | |  |  | **X** |
| 11 | get an understanding of professional and ethical responsibility | |  |  | **X** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | |  |  | **X** |
| **Instructor Name**  Prof. Dr. Kevser EROL  **Sign** | | **Date**  15.11.2012 | | | | |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:521902303** |  | | **DEPARTMENT: Histology and Embryology** | | | |
| **COURSE NAME:**  **Development and histology of nervous system organs** | | | | | | |
| **INSTRUCTOR NAME** | | **COURSE LANGUAGE**  **Turkish: X**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
| **Prof. Dr. Varol ŞAHİNTÜRK** | |  | |  | X |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

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

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 2 | 0 | 0 | 2 | 6 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | |  |  |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | | 1 | 50 |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | | **1** | **50** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
| **X** | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Development and histology of nervous system organs | | | | |
| **COURSE AIMS** | | | Teaching of development and histology of nervous system organs | | | | |
| **COURSE OBJECTIVES** | | | To prepare to understanding of abnormal developmental and microscopic structures of nervous system organs via learning their normal structures | | | | |
| **TEXTBOOK(S)** | | | Embriyoloji ve doğum defektlerinin temelleri, Çeviri editörü: Sevda Müftüoğlu, 7. Baskıdan çeviri, Güneş Kitabevi, 2009.Histology A Text and Atlas, Michael H. Ross and Wojciech Pawlina, sixth edition, Wolters kluwer Lippincott Williams & Wilkins, 2011. | | | | |
| **REFERENCES** | | |  | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Introduction to nervous system |
| 2 |  | Cells of nervous system |
| 3 |  | Cells of nervous system |
| 4 |  | General features of nervous system |
| 5 |  | Early developmental period of nervous system |
| 6 |  | Development of brain |
| 7 |  | Histology of brain |
| 8 |  | Development of spinal chord |
| 9 |  | Histology of spinal chord |
| 10 |  | Development of cerebellum |
| 11 |  | Histology of cerebellum |
| 12 |  | Development and histology of ganglion |
| 13 |  | **Mid-term examination** |
| 14 |  | Development and histology of peripheral nerve |
| 15 |  | Histology of capsulated nerve endings |
| 16 |  | **Final exam** |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X** |
| 5 | learn how to use the experimental equipment effectively |  | **X** |  |
| 6 | function on multi-disciplinary teams |  |  | **X** |
| 7 | identify, formulate, and solve medical problems |  | **X** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | **X** |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **X** |
| 10 | use effective written and oral communication/presentation skills |  | **X** |  |
| 11 | get an understanding of professional and ethical responsibility |  | **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **X** |
| 13 | Know basic medical themes |  |  | **X** |
| 14 | get a skill to place basic themes in centre of ethical problems |  |  | **X** |

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| **Instructor Name**  **Sign**  Prof. Dr. Varol ŞAHİNTÜRK | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

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| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521202303** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Anatomy of the Peripheral Nervous System** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr. Ferruh YÜCEL | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.Sc.** | **Ph.D.** | **COURSE of PROVINCE** |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE of** | | | | | |
| **Theoric** | **Practice** | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | | |
| Spring 🗵  Autumn □ | 3 | 1 | - | | 3,5 | 10,5 | | COMPULSORY ELECTIVE  □🗵 | | |
|  | | | | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | **ACTIVITY** | | | | | | **Quantity** | | **Percentage (%)** |
| 1st Mid-Term | | | | | | **1** | | **50** |
| 2 nd Mid- Term | | | | | |  | |  |
| Quiz | | | | | |  | |  |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other (………) | | | | | |  | |  |
| **FINAL** | | Quiz | | | | | | **1** | | **50** |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other(……………….) | | | | | |  | |  |
| **MAKE-UP EXAM** | | Oral | | Written | | | Oral and Written | | Multiple Choice | |
|  | |  | | | 🗴 | |  | |
| **PREREQUISITE(S)** | |  | | | | | | | | |
| **COURSE CONTENT** | | Describe the peripheric nerves and their distributions in body. A description of the fibers in the peripheric nerves. Briefly consider their clinical significance.. | | | | | | | | |
| **COURSE AIMS** | | To describe the distribution of the peripheric nerves in the human body. To discuss the clinical significance of the peripheric nerves. | | | | | | | | |
| **COURSE OBJECTIVES** | | At the end of the course students should: Have a sufficient knowledge on the cranial nerves and their major branches. Be able to evaluate the clinical problems arised from the cranial nerves. | | | | | | | | |
| **TEXTBOOK(S)** | | -Arıncı, K, Elhan, A: Anatomi, Cilt 1-2, 2. Baskı, Güneş Kitabevi, Ankara, 1997.-Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.-Moore, KL: Clinically Oriented Anatomy. 3th Edition, Williams and Wilkins, Baltimore, 1992.-Williams P.L.: Gray’s Anatomy, 38.edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | | | | | | | |
| **REFERENCES** | | -Netter F.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.-Putz R, Pabst R.: Sobotta İnsan Anatomisi (çeviri: K.Arıncı), Beta Basım Yayın Dağıtım A.Ş., İstanbul, 1993. | | | | | | | | |

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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS** |
| 1 | Introduction to the cranial nerves, nn.olfactorii |
| 2 | N.opticus |
| 3 | N.oculomotorius |
| 4 | N.trochlearis, N.abducens |
| 5 | N.trigeminus I |
| 6 | N.trigeminus II |
| 7 | N.facialis |
| 8 | MID-TERM EXAM |
| 9 | N.vestibulocochlearis |
| 10 | N.glossopharyngeus |
| 11 | N.vagus I |
| 12 | N.vagus II |
| 13 | N.accessorius, N.hypoglossus |
| 14 | The Spinal chord and Spinal nerves |
| 15 | The sympathetic Trunk |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM QUTCOMES** | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | 🗴 |
| 2 | ask scientific questions and form hypothesis |  |  | 🗴 |
| 3 | search and interpret scientific literature |  |  | 🗴 |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | 🗴 |  |
| 5 | learn how to use the experimental equipment effectively |  | 🗴 |  |
| 6 | function on multi-disciplinary teams |  |  | 🗴 |
| 7 | identify, formulate, and solve medical problems |  |  | 🗴 |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | 🗴 |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | 🗴 |  |
| 10 | use effective written and oral communication/presentation skills |  | 🗴 |  |
| 11 | get an understanding of professional and ethical responsibility |  | 🗴 |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | 🗴 |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name:**  Prof.Dr. Ferruh YÜCEL  **Sign:** |  | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

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| **COURSE CODE:** | **521202309** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Anatomy of the Autonomic Nervous System** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr. Ferruh YÜCEL | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.Sc.** | **Ph.D.** | **COURSE of PROVINCE** |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE of** | | | | | |
| **Theoric** | **Practice** | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | | |
| Spring 🗵  Autumn □ | 2 | 1 | - | | 2,5 | 7,5 | | COMPULSORY ELECTIVE  □🗵 | | |
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| **ASSESMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | **ACTIVITY** | | | | | | **Quantity** | | **Percentage (%)** |
| 1st Mid-Term | | | | | | **1** | | **50** |
| 2 nd Mid- Term | | | | | |  | |  |
| Quiz | | | | | |  | |  |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other (………) | | | | | |  | |  |
| **FINAL** | | Quiz | | | | | | **1** | | **50** |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other(……………….) | | | | | |  | |  |
| **MAKE-UP EXAM** | | Oral | | Written | | | Oral and Written | | Multiple Choice | |
|  | |  | | | 🗴 | |  | |
| **PREREQUISITE(S)** | |  | | | | | | | | |
| **COURSE CONTENT** | | Describe the autonomic nervous system and its connections with the body systems. Consider the effects of the autonomic innervation of the different organs and its significance in modulating the different body systems. | | | | | | | | |
| **COURSE AIMS** | | To present the scientific basis for understanding the presentation of the autonomic nervous system. To give an overview of the essential elements of the autonomic nervous system. To give its importance in controlling the different body systems. | | | | | | | | |
| **COURSE OBJECTIVES** | | At the end of the course students should: Have an understanding of the relationship between normal and abnormal functioning of this system. Be sufficiently familiar with the topographic and microscopic anatomy of this system. To be able to interpret critically information relevant to an understanding of this system. | | | | | | | | |
| **TEXTBOOK(S)** | | -Arıncı, K, Elhan, A: Anatomi, Cilt 1-2, 2. Baskı, Güneş Kitabevi, Ankara, 1997.-Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.-Moore, KL: Clinically Oriented Anatomy. 3th Edition, Williams and Wilkins, Baltimore, 1992.-Williams P.L.: Gray’s Anatomy, 38.edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | | | | | | | |
| **REFERENCES** | | -Netter F.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.-Putz R, Pabst R.: Sobotta İnsan Anatomisi (çeviri: K.Arıncı), Beta Basım Yayın Dağıtım A.Ş., İstanbul, 1993. | | | | | | | | |

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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS** |
| 1 | The development of autonomic nervous system |
| 2 | The sympathetic nervous system and their parts |
| 3 | Cranial part of the sympathetic nervous system |
| 4 | Cervical part of the sympathetic nervous system |
| 5 | Thoracic part of the sympathetic nervous system |
| 6 | Lumbar part of the sympathetic nervous system |
| 7 | Pelvic part of the sympathetic nervous system |
| 8 | MID-TERM EXAM |
| 9 | The parasympathetic nervous system and their parts |
| 10 | Cranial part of the parasympathetic nervous system |
| 11 | Sacral part of the parasympathetic nervous system |
| 12 | Plexuses of the autonomic nervous system I |
| 13 | Plexuses of the autonomic nervous system II |
| 14 | Upper centers which control the autonomic nervous system |
| 15 | Autonomic innervations of some organs |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM QUTCOMES** | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | 🗴 |
| 2 | ask scientific questions and form hypothesis |  |  | 🗴 |
| 3 | search and interpret scientific literature |  |  | 🗴 |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | 🗴 |  |
| 5 | learn how to use the experimental equipment effectively |  | 🗴 |  |
| 6 | function on multi-disciplinary teams |  |  | 🗴 |
| 7 | identify, formulate, and solve medical problems |  |  | 🗴 |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | 🗴 |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | 🗴 |  |
| 10 | use effective written and oral communication/presentation skills |  | 🗴 |  |
| 11 | get an understanding of professional and ethical responsibility |  | 🗴 |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | 🗴 |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name:**  Prof.Dr. Ferruh YÜCEL  **Sign** |  | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

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| **COURSE CODE:** | **521202306** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Developmental Neurobiology of the Nervous System** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr. Emel ULUPINAR | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
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**COURSE LEVEL**

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| **PROPAEDEUTIC** | **M.Sc.** | **Ph.D.** | **COURSE of PROVINCE** |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE of** | | | | | |
| **Theoric** | **Practice** | **Laboratory** | | **Credit** | **ECTS** | | **TYPE** | | |
| Spring 🗵  Autumn □ | 3 | - | - | | 3 | 9 | | COMPULSORY ELECTIVE  □🗵 | | |
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| **ASSESMENT CRITERIA** | | | | | | | | | | |
| **MID-TERM** | | **ACTIVITY** | | | | | | **Quantity** | | **Percentage (%)** |
| 1st Mid-Term | | | | | | **1** | | **50** |
| 2 nd Mid- Term | | | | | |  | |  |
| Quiz | | | | | |  | |  |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other (………) | | | | | |  | |  |
| **FINAL** | | Quiz | | | | | | **1** | | **50** |
| Homework | | | | | |  | |  |
| Project | | | | | |  | |  |
| Oral Exam | | | | | |  | |  |
| Other(……………….) | | | | | |  | |  |
| **MAKE-UP EXAM** | | Oral | | Written | | | Oral and Written | | Multiple Choice | |
|  | |  | | | 🗴 | |  | |
| **PREREQUISITE(S)** | |  | | | | | | | | |
| **COURSE CONTENT** | | Neural induction and pattern formation, neurogenesis and migration, cellular determination, growth cones, axon pathfinding, plasticity, early experience and critical periods. Throughout the emphasis will be on programmed cell death and neurotrophic factors. | | | | | | | | |
| **COURSE AIMS** | | To cover the basic concepts of developmental neurobiology, particularly that of mammals, but also to include examples from studies of invertebrates. | | | | | | | | |
| **COURSE OBJECTIVES** | | By the end of this course students will be able to familiarize themselves with this very rapidly changing area of neuroscience and demonstrate an understanding of the principles of the nervous system development. | | | | | | | | |
| **TEXTBOOK(S)** | | -Cowan W.M., Jessell T.M., Zipursky S.L.: Molecular and Cellular Approaches to Neural Development, Oxford University Press, New York, 1997. -Arıncı, K, Elhan, A: Anatomi, Cilt 1-2, 2. Baskı, Güneş Kitabevi, Ankara, 1997.-Langman Jan: Medizinische Embryologie, Band: 1-3, Georg Thieme Verlag, Stuttgart-New York.-Moore, KL: Clinically Oriented Anatomy. 3th Edition, Williams and Wilkins, Baltimore, 1992.-Williams P.L.: Gray’s Anatomy, 38.edition, ELBS with Churchill Livingstone, Great Britain, 1995. | | | | | | | | |
| **REFERENCES** | | -Netter F.H.:Atlas of Human Anatomy, Seventh Edition, Ciba-Geigy Corporation, 1994.-Putz R, Pabst R.: Sobotta İnsan Anatomisi (çeviri: K.Arıncı), Beta Basım Yayın Dağıtım A.Ş., İstanbul, 1993. | | | | | | | | |

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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS** |
| 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 pathfinding |
| 6 | Mechanisms of growth cone guidance |
| 7 | Control of topographic projections |
| 8 | MID-TERM EXAM |
| 9 | Synapse formation and elimination |
| 10 | Programmed cell death of neurons and its regulation |
| 11 | Modes of cell death in developing neurons |
| 12 | The neurotrophin family, receptors and signaling |
| 13 | Developmental roles of neurotrophins in the peripheral and the central nervous system. |
| 14 | Early experience and critical periods |
| 15 | Constancy and plasticity |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM QUTCOMES** | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | 🗴 |
| 2 | ask scientific questions and form hypothesis |  |  | 🗴 |
| 3 | search and interpret scientific literature |  |  | 🗴 |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | 🗴 |  |
| 5 | learn how to use the experimental equipment effectively |  | 🗴 |  |
| 6 | function on multi-disciplinary teams |  |  | 🗴 |
| 7 | identify, formulate, and solve medical problems |  |  | 🗴 |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | 🗴 |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | 🗴 |  |
| 10 | use effective written and oral communication/presentation skills |  | 🗴 |  |
| 11 | get an understanding of professional and ethical responsibility |  | 🗴 |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | 🗴 |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name:**  Prof.Dr. Emel ULUPINAR  **Sign:** |  | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521302309** | | **DEPARTMENT: Physiology** | | | |
| **COURSE NAME*:*** |  | | **Neurotranmitters** | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Neşe TUNÇEL | |  | |  | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |

**COURSE LEVEL**

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

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 2 | 0 |  | 2 | 6 | COMPULSORY ELECTIVE  ** X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 25 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | | **3** | **5** |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | | **2** | **10** |
| Project | | |  |  |
| Oral Exam | | | **x** | **60** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
| **X** | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Molecules of chemical synapses in santral and peripheric nervous system. | | | | |
| **COURSE AIMS** | | | Comprehensive knowledge for chemical synaptic transmission. | | | | |
| **COURSE OBJECTIVES** | | | Molecular structure, biosynthesis and catabolism of various neurotransmitters. Receptors and signal transduction. Inhibitor and exitator neurotransmitter. Clasification of neurons according to neurotranmitter. | | | | |
| **TEXTBOOK(S)** | | | |  | | --- | | Textbook of Medical Physiology,Guyton  Medical physiology Ganong | |  | | | | | |
| **REFERENCES** | | | Various neuroscience journals | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Neurotransmitter description |
| 2 |  | Molecular structures, bio-synthesis and metabolism of neurotransmitters |
| 3 |  | Neurotransmitter receptors types |
| 4 |  | Intracellular signal transmission paths |
| 5 |  | Inhibitory and excitatory neurotransmitters |
| 6 |  | The carrier molecules (for vesicular and reuptake) |
| 7 |  | Classification |
| 8 |  | Mid-term exam |
| 9 |  | Amines |
| 10 |  | Acetylcholine |
| 11 |  | Amino acid |
| 12 |  | Neuropeptides |
| 13 |  | Gas ones (such as NO and CO) |
| 14 |  | Purines |
| 15 |  | Paper discussion |
| 16 |  | Paper discussion |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **x** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  | **x** |  |
| 6 | function on multi-disciplinary teams |  | **x** |  |
| 7 | identify, formulate, and solve medical problems |  | **x** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **x** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **x** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **x** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name**  **Sign**  Prof. Dr. Neşe TUNÇEL | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521302311** | | **DEPARTMENT: Physiology** | | | |
| **COURSE NAME*:*** |  | | **Molecular mechanisms of Learning and Memory** | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Neşe TUNÇEL | |  | |  | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |

**COURSE LEVEL**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  ** X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 25 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | | **3** | **5** |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | | **2** | **10** |
| Project | | |  |  |
| Oral Exam | | | **x** | **60** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
| **X** | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Specific regions of the brain for learning and memory. Synaptic plasticity and learning. Conditioning. Molecules that involve in learning and memory. | | | | |
| **COURSE AIMS** | | | Experimental studies on learning and memory | | | | |
| **COURSE OBJECTIVES** | | | Intellectual functions of the brain. | | | | |
| **TEXTBOOK(S)** | | | |  | | --- | | Textbook of Medical Physiology,Guyton  Medical physiology Ganong | | Neuroscience in Medicine Conn PM | | | | | |
| **REFERENCES** | | | Various neuroscience journals | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Synaptic transmission and synaptic plasticityAlpha |
| 2 |  | Posttetanik potentiation, habituation, increased precision |
| 3 |  | Long-term potentiation and depression |
| 4 |  | Learning and conditioned reflex |
| 5 |  | Memory and types |
| 6 |  | Short and long term memory |
| 7 |  | The molecular basis of learning and memory |
| 8 |  | Mid-term exam |
| 9 |  | Paper discussion |
| 10 |  | Paper discussion |
| 11 |  | Paper discussion |
| 12 |  | Paper discussion |
| 13 |  | Paper discussion |
| 14 |  | Paper discussion |
| 15 |  | Paper discussion |
| 16 |  | Final exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **x** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  | **x** |  |
| 6 | function on multi-disciplinary teams |  | **x** |  |
| 7 | identify, formulate, and solve medical problems |  | **x** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **x** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **x** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **x** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name**  **Sign**  Prof. Dr. Neşe TUNÇEL | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COURSE CODE: 522102301** |  | **DEPARTMENT: BIOPHYSICS** | | |
| **COURSE NAME: NEUROBIOPHYSICS II** |  |  | | |
| **INSTRUCTOR NAME**  **Prof.Dr. Ferhan ESEN** | **COURSE LANGUAGE**  **Turkish: X**  **English:** | **Course Catagory** | | |
| Technical | Medical | Other (……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

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

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 3 | - | - | 3 | 9 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | **1** | **40** |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | | **1** | **20** |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Written | | | **1** | **40** |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | |  | **X** |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Synaptic Transmission, Biophysics of The Functioning of Receptor Cells, Nervous System in The Context of Information Theory, Psychophysics, Biological Control. | | | | |
| **COURSE AIMS** | | | The intention of the Neurobiophysics courses as a whole is to enable the students to understand the functioning of the nervous system. | | | | |
| **COURSE OBJECTIVES** | | | Students should have acquired a fairly good understanding of current knowledge and future developments in this field | | | | |
| **TEXTBOOK(S)** | | | **Vasilescu V., Margineanu D.G**.: Introduction to Neurobiophysics. Abacus Press. 1982. | | | | |
| **REFERENCES** | | | **Hoppe W., Lohmann W., Markl H., Ziegler H. (eds):** Biophysics, Springer-Verlag, Berlin, 1983.  **Ruch T.C, Patton H.D**: Physiology and Biophysics (19.Edition), Saunders  **Pehlivan F.:** Biyofizik (2.Baskı), Hacettepe-Taş Kitapçılık, Ankara, 1997.  **Esen H.:**  Ders Notları, ESOGÜTF Biyofizik Anabilim Dalı. | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Communication Between Cells (Structural Conditions of Synaptic Transmission) |
| 2 |  | Sequence of Events in Chemical Synaptic Transmission |
| 3 |  | Quanta Release of Transmitter |
| 4 |  | Post-synaptic Potentials |
| 5 |  | Description of Synaptic Events by Equivalent Electric Circuits |
| 6 |  | Synaptic Summation |
| 7 |  | Electrical Synaptic Transmission |
| 8 |  | Receptor Structures |
| 9 |  | Types of Stimuli and the Corresponding Receptor Cells |
| 10 |  | Coding of the Strength and Distribution in Space and Time of Stimuli |
| 11 |  | Biopotentials of Receptor Cells |
| 12 |  | Subjective Sensation and Psychophysics |
| 13 |  | Information Theory |
| 14 |  | Application of Information Theory to Sensory Systems |
| 15 |  | Basic concepts of Biological Control |
| 16 |  | Examples of Biological Control |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **X** |
| 3 | search and interpret scientific literature |  | **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X** |
| 5 | learn how to use the experimental equipment effectively |  |  | **X** |
| 6 | function on multi-disciplinary teams |  | **X** |  |
| 7 | identify, formulate, and solve medical problems |  |  | **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | **X** |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **X** |
| 10 | use effective written and oral communication/presentation skills |  |  | **X** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **X** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **X** |
| 13 | other (……………………………………….) |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name**  **Prof.Dr. Ferhan ESEN**  **Sign** | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521102304** | | **DEPARTMENT:** Medical Biology | | | |
| **COURSE NAME:**  **Cellular Mechanisms of Development** | | | | | | |
| **INSTRUCTOR NAME**  Assoc. Prof. Dr. Hulyam KURT | | **COURSE LANGUAGE**  **Turkish:** X  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |

**COURSE LEVEL**

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

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring X  Autumn **** | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  **** X | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 24 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | | 1 | 16 |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(Final Exam) | | | 1 | 60 |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | | X |  |  |
| **PREREQUISITE(S)** | | | -- | | | | |
| **COURSE CONTENT** | | | Control of molecular level of formation of organism; zygote, morula, blastula and gastrula cycles; formation of ectoderm, endoderm and mesoderm; the mechanisms of formation of body; investigation of body formation on C. elegans. | | | | |
| **COURSE AIMS** | | | -To understand the event that control of each other body formation mechanisms | | | | |
| **COURSE OBJECTIVES** | | | -To understand the very a complicated system that operates the body formation from a simplest organism to well developed organism. | | | | |
| **TEXTBOOK(S)** | | | -Başaran, A.: Tıbbi Biyoloji Ders Kitabı, 6. Baskı, Nobel-Güneş Kitapevi, Eskişehir, 2002.  -Kayalı, H., Şatrooğlu, G., Taşyürekli, M.: İnsan Embriyolojisi (7.Baskı), Alfa Baskıevi, İstanbul,1992. | | | | |
| **REFERENCES** | | | -Alberts, B., Lewis, R., Watson, R.: Molecular Biyology of the Cell., Second Edition (p:879-946), Newyork, London, 1989. | | | | |

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|  | **COURSE SYLLABUS** |
| **WEEK** | **SUBJECTS/TOPICS (Theoretical)** |
| 1 | Morphogenetic movements and shaping of the body plan. |
| 2 | The polarity of the Amphibian embryo depends on the polarity of the egg. |
| 3 | Morula, blastula and gastrula cycles. |
| 4 | The organization of gastrulation movements of the dorsal lip of blasthapore. |
| 5 | The factors that effect three germ layers by gastrulation. |
| 6 | Formation of somites. |
| 7 | The regulation of morphogenetic movements of the cells at the molecular level. |
| 8 | Control of embryonic tissues through cell migrations. |
| 9 | The changes of early embryonic animal cells. |
| 10 | The whole cells of early mammalian embryo have same developmental potential. |
| 11 | The systems that effect the stem cells development in the mammalian embryo. |
| 12 | The analyses of cell determination by experimental transplantation. |
| 13 | The control of determination by the cytoplasm; the cellular potential on the formation of tissues. |
| 14 | To effect each others of proliferating cells on the regeneration event. |
| 15 | The contrıl of molecular level on the body development of C. elegans. |
| 16 | Overview of the whole subjects. |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | X |  |
| 2 | ask scientific questions and form hypothesis |  |  | X |
| 3 | search and interpret scientific literature |  |  | X |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | X |  |
| 5 | learn how to use the experimental equipment effectively |  |  | X |
| 6 | function on multi-disciplinary teams |  | X |  |
| 7 | identify, formulate, and solve medical problems |  |  | X |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | X |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  |  |
| 10 | use effective written and oral communication/presentation skills |  | X |  |
| 11 | get an understanding of professional and ethical responsibility |  | X |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | X |
| 13 | Ability of recognition of fundamental terms in Medical School teaching |  | X |  |
| 14 | Ability of handling ethic issues by considering fundamental terms |  | X |  |

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| **Instructor Name**  **Sign**  Assoc. Prof. Dr. Hulyam KURT | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** 522402313 | | | **DEPARTMENT: MEDICAL GENETICS** | | | |
| **COURSE NAME:** | MOLECULAR APPROACHES OF NEUROSCIENCE | | | | | |
| **INSTRUCTOR NAME**  **Prof.Dr.Sevilhan ARTAN** | | **COURSE LANGUAGE**  **Turkish: X**  **English: X** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 2 |  | |  | 2 | 6 | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | |  |  |
| 2 nd Mid- Term | | | |  |  |
| Quiz | | | |  |  |
| Homework | | | | 1 | 15 |
| Project | | | |  | 25 |
| Oral Exam | | | |  |  |
| Other (………) | | | | 1 | 20 |
| **FINAL** | | | Quiz | | | |  |  |
| Homework | | | |  |  |
| Project | | | |  |  |
| Oral Exam | | | | **1** | **40** |
| Other(……………….) | | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | | Written | Oral and Written | Multiple Choice |
|  | | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | | |
| **COURSE CONTENT** | | | Genetic aspects of brain development, genes involved in brain development, phenotypic results of mutations, genetic basis of neurological and psychiatric diseases | | | | | |
| **COURSE AIMS** | | | To learn molecular mechanisms and pathways of the genes involved in braişn development, to get knowledge related with the genetic aspects of specific neurological and psychiatric disease. | | | | | |
| **COURSE OBJECTIVES** | | | Ability to evaluate genetic and molecular aspects of normal brain functions and to discuss genetic basis of neurological and psychiatric diseases | | | | | |
| **TEXTBOOK(S)** | | | Warner TT ,Hammans SR Practical Guide to Neurogenetics. Saunders, 2008. | | | | | |
| **REFERENCES** | | | Akira Sawa , Melvin G. McIinnis Neurogenetics of Psychiatric Disorders (Medical Psychiatry Series), 2007 | | | | | |

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| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | DNA genes and mutations |
| 2 |  | Evidences in the genetics of brain development |
| 3 |  | Epilepsy genetics |
| 4 |  | Cerebellar ve spinocerebellar diseases genetics |
| 5 |  | Motor neuron disease genetics |
| 6 |  | Neuropathies and genetics |
| 7 |  | Muscle diseases genetics |
| 8 |  | Mitochondrial diseases |
| 9 |  | Tumor Predisposition Syndromes: VHL, NF1,NF2, |
| 10 |  | Tumor Predisposition Syndromes: VHL, NF1,NF2, |
| 11 |  | Cerebrovascular diseases and genetics |
| 12 |  | Degenerative Diseases and genetics |
| 13 |  | Genetic evidences in Alzheimer and Parkinson Diseases |
| 14 |  | Schizophrenia Genetics |
| 15 |  | Genetic tests |
| 16 |  | Genetic counselling |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | **x** |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  |  |  |
| 6 | function on multi-disciplinary teams |  |  | **x** |
| 7 | identify, formulate, and solve medical problems |  |  | **x** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **x** |
| 10 | use effective written and oral communication/presentation skills |  |  | **x** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |
| 13 | other (…ability to know basic concepts in medical education) |  |  | **x** |

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| --- | --- |
| **Instructor Name**  **Sign**  **Prof.Dr.Sevilhan ARTAN** | **Date** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521702305 | | **DEPARTMENT: Pharmacology** | | | |
| **COURSE NAME:** | Pharmacology of  central Nervous System II | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Fatma Sultan KILIC | | **COURSE LANGUAGE**  **Turkish: x**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | x |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  **x** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 50 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(……written………….) | | | **1** | **50** |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Drugs which have selective activity in central nervous system, analgesics, anesthetics, stimulants and depressants of central nervous system, drugs used Parkinson and Alzheimer diseases. | | | | |
| **COURSE AIMS** | | | To teach the detailed mechanisms of the drugs which have selective activity in central nervous system | | | | |
| **COURSE OBJECTIVES** | | | To be able to realize the groups of the drugs which affect the central nervous system | | | | |
| **TEXTBOOK(S)** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. DÖKMECİ, I. (2007); M.Y. Okulları için Farmakoloji Dersleri. Nobel Tıp Kitapevleri.  3. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  4. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  5. Basic and Clinical Pharmacology: Bertram G. Katzung,  6. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  7. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  8.Human Pharmacology, Molecular to Clinical: Brody, Larner, Mınneman.  9. Hardman JG, Limbird LE, Gilman AG, The Pharmacological Basis of Therapeutics, McGraw-Hill, New York  10.Rang HP, Dale MM, Ritter JM, Pharmacology, Churchill Livingstone, Edinburgh, (3th ed.)1995.  11. Lüllmann H, Mohr K, Ziegler A.Atlas de Poche de Pharmacologie, Medecine- Sciences Flammarion, Paris (2.baskı), 1996  12. Taner D. Fonksiyonel Nöroanatomi,METU press | | | | |

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|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Introduction,neuromediators ans synaps |
| 2 |  | General anesthetics |
| 3 |  | Local anesthetics |
| 4 |  | Anxiolytic drugs |
| 5 |  | Hypnotics |
| 6 |  | Muscle relaxants |
| 7 |  | Alcohols |
| 8 |  | **Mid term exam** |
| 9 |  | Antipsychotics |
| 10 |  | Drugs effective in the therpy of Parkinson and Alzheimer diseases |
| 11 |  | Antidepressants |
| 12 |  | Stimulants of central nervous system |
| 13 |  | Antiepileptics |
| 14 |  | Antiinflammatory analgesics |
| 15 |  | Opioids |
| 16 |  | **Final exam** |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | **x** |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **x** |
| 5 | learn how to use the experimental equipment effectively |  | **x** |  |
| 6 | function on multi-disciplinary teams |  |  | **x** |
| 7 | identify, formulate, and solve medical problems |  | **x** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **x** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **x** |
| 10 | use effective written and oral communication/presentation skills |  | **x** |  |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |

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| **Instructor Name**  Prof. Dr. Fatma Sultan KILIC | **Date**  15.11.2012 |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521701306 | | **DEPARTMENT: Pharmacology** | | | |
| **COURSE NAME:** | Autonom Nervous Systems II | |  | | | |
| **INSTRUCTOR NAME**  Prof. Dr. Kevser EROL | | **COURSE LANGUAGE**  **Turkish: x**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | x |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn | 3 | 0 |  | 3 | 9 | COMPULSORY ELECTIVE  **x** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | 1 | 50 |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(……written………….) | | | **1** | **50** |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | General information about the autonomous nerve system and providing information about sympathetic and parasympathetic system definitions of mechanisms: | | | | |
| **COURSE AIMS** | | | Overseeing the information about autonomus nerve systems | | | | |
| **COURSE OBJECTIVES** | | | Informing the students about endications, counterendications and effects of the medicines of this system: | | | | |
| **TEXTBOOK(S)** | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | |
| **REFERENCES** | | | 1. CİNGİ, I; EROL, K. (1996); Anadolu Üniversitesi Açık Öğretim Fakültesi Sağlık Personeli Önlisans Eğitimi, Farmakoloji.  2. SÜZER, O. (2005); Farmakolojinin Temelleri.. Nobel Tıp Kitapevleri.  3. GOODMAN AND GİLLMAN‘S (2011). The Pharmacological basis of Therapeutics. 12th edition  4. Basic and Clinical Pharmacology: Bertram G. Katzung,  5. Pharmacology: H.P.Rang, M.M Dale, J.M.Ritter,  6. Lippincott’sPharmacology: Richard Harvey, Pamela Champe,  7.Human Pharmacology, Molecular toClinical: Brody,Larner,Mınneman. | | | | |

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| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Introduction to Autonomic Nervous Systems |
| 2 |  | Introduction to Autonomic Nervous Systems |
| 3 |  | Introduction to Autonomic Nervous Systems |
| 4 |  | Sympathomimetisc |
| 5 |  | Sympathomimetisc |
| 6 |  | Sympatholitics |
| 7 |  | Sympatholitics |
| 8 |  | **Mid-Term Exam** |
| 9 |  | Parasympathomimetisc |
| 10 |  | Parasympathomimetisc |
| 11 |  | Parasympatholitics |
| 12 |  | Parasympatholitics |
| 13 |  | Drugs that effect to ganglions |
| 14 |  | Drugs that effect to ganglions |
| 15 |  | General Revise |
| 16 |  | **Final Exam** |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NO** | |  | | **1** | **2** | **3** |
| 1 | | gather as well as apply knowledge of health sciences | |  | **X** |  |
| 2 | | ask scientific questions and form hypothesis | |  |  | **X** |
| 3 | | search and interpret scientific literature | |  |  | **X** |
| 4 | | design and conduct experiments as well as analyze and interpret the data | |  | **X** |  |
| 5 | | learn how to use the experimental equipment effectively | |  | **X** |  |
| 6 | | function on multi-disciplinary teams | |  | **X** |  |
| 7 | | identify, formulate, and solve medical problems | |  |  | **X** |
| 8 | | use computer effectively both in conducting the experiments and analyzing the data | |  | **X** |  |
| 9 | | understand the impact of experimental solutions on national and international sciences | |  |  | **X** |
| 10 | | use effective written and oral communication/presentation skills | |  |  | **X** |
| 11 | | get an understanding of professional and ethical responsibility | |  |  | **X** |
| 12 | | get a recognition of the need for, and an ability to engage in lifelong learning | |  |  | **X** |
| **Instructor Name**  Prof. Dr. Kevser EROL | | **Date**  15.11.2012 | | | | |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** |  | | **DEPARTMENT: INTERDISCIPLINARY NEUROSCIENCE** | | | |
| **COURSE NAME:** | **Neurodegenerative diseases and molecular mechanisms** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr.Demet ÖZBABALIK ADAPINAR, Prof.Dr.Oğuz ERDİNÇ, Assoc.Prof.Dr. Hülyam KURT | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | |  | X | X |

**COURSE LEVEL**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | **COURSE OF** | | | |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** | |
| Spring **X**  Autumn **** | 1 | 1 | 1 |  |  | COMPULSORY ELECTIVE  ** X** | |
|  | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | |  |  |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | | 1 | 50 |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | | **1** | **50** |
| Oral Exam | | |  |  |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
| **x** | |  |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | To introduce neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, motor neuron disease, epilepsy having different clinical features but similar neuropathological mechanisms. | | | | |
| **COURSE AIMS** | | | To introduce mechanisms of neurodegeneration and properties of neurodegenerative diseases, | | | | |
| **COURSE OBJECTIVES** | | | To understand the causes of neurodegenerative diseases at cellular and molecular level and to develop original projects on these subjects | | | | |
| **TEXTBOOK(S)** | | | Principles of Neural Science, Fifth Edition (Principles of Neural Science (Kandel) 2012; Bradley, Neurology in Clinical Practice, 2011 | | | | |
| **REFERENCES** | | | Adams Principles Of Neurology, 2011Neurodegeneration. Edited by L. Miguel Martins and Samantha H.Y. Loh, ISBN 978-953-51-0502-2, Hard cover, 362 pages, Publisher: InTech, Published: April 11, 2012, - M. Flint Beal, Anthony E. Lang, Albert C. Ludolph. Neurodegenerative Diseases: Neurobiology, Pathogenesis and Therapeutics . Cambridge University Press, Jun 2, 2005 | | | | |

|  |  |  |
| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | The concept of neurodegeneration |
| 2 |  | Genetic epidemiology of neurodegenerative diseases |
| 3 |  | Neuro-degenerative mechanisms |
| 4 |  | Molecular mechanisms |
| 5 |  | Molecular mechanisms |
| 6 |  | Proteinopati |
| 7 |  | Diagnotic methods of neurodegenerative diseases |
| 8 |  | Midterm exam |
| 9 |  | Dementias and Alzheimer's disease |
| 10 |  | Amyotrofik lateral sklerosis (ALS) |
| 11 |  | Parkinson's disease |
| 12 |  | Movement disorders |
| 13 |  | Epilepsy and sleep disorders |
| 14 |  | Multiple Sclerosis |
| 15 |  | Diseases of the spinal cord |
| 16 |  | Overwiev |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | **x** |
| 2 | ask scientific questions and form hypothesis |  |  | **x** |
| 3 | search and interpret scientific literature |  |  | **x** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **x** |  |
| 5 | learn how to use the experimental equipment effectively |  |  | **x** |
| 6 | function on multi-disciplinary teams |  |  | **x** |
| 7 | identify, formulate, and solve medical problems |  |  | **x** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | **x** |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **x** |
| 10 | use effective written and oral communication/presentation skills |  |  | **x** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **x** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **x** |

|  |  |
| --- | --- |
| **Instructor Name**  **Sign**  Prof.Dr.Demet OZBABALIK ADAPINAR, Prof.Dr.Oğuz ERDİNÇ,  Assoc.Prof.Dr. Hülyam KURT | **Date** |