|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**  **Master of Science (MSc) Programme** | | | | | |
| Code | Course Name | ECTS | T+P+L | C/E | Language |
| Fall Semester | | | | | |
| 522601201 | BIOPHYSICAL APPROACH TO NEUROSCIENCE | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522601202 | CELLULAR AND MOLECULAR NEUROBİOLOGY | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522601203 | NEURO-PSYCHO-PHARMACOLOGY | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522601204 | DEVELOPMENT AND HISTOLOGY OF NERVOUS TİSSUE | 6 | 2+0+0 | ELECTIVE | TURKISH |
| 521301205 | NEURONAL AND HORMONAL CONTROL MECHANİSMS | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521801205 | BIOLOGICAL BASIS OF HUMAN BEHAVIORS |  | 3+0+0 | ELECTIVE | TURKISH |
| 522601700 | SPECIALITY FIELD STUDIES | 5 | 3+0+0 | ELECTIVE | TURKISH |
| Fall Semester Total: | | 38 |  |  |  |
| Spring Semester | | | | | |
| 522602201 | NERVE PHYSIOLOGY | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 521202202 | BASIC PRINCIPLES IN NEUROSCIENCE | 9 | 2+2+0 | ELECTIVE | TURKISH |
| 521202210 | ANATOMY OF THE NERVOUS SYSTEM | 12 | 3+2+0 | ELECTIVE | TURKISH |
| 521702204 | TRANSMISSION MECHANISMS  İN NERVOUS SYSTEM | 9 | 3+0+0 | ELECTIVE | TURKISH |
| 522601700 | SPECIALITY FIELD STUDIES | 5 | 3+0+0 | ELECTIVE | TURKISH |
| Spring Semester Total : | | 44 |  |  |  |
| Year Total : | | 82 |  |  |  |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 522601201 | | **DEPARTMENT: Interdisciplinary Neuroscience** | | | |
| **COURSE NAME:** | **Biophysical Approach to Neuroscience** | |  | | | |
| **INSTRUCTOR NAME** | | **COURSE LANGUAGE**  **Turkish: X**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
| **Prof.Dr. Ferhan Esen** | |  | |  | 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 | | 0 | 3 |  | COMPULSORY ELECTIVE  **X** | |
|  | | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | |  |  |
| 2 nd Mid- Term | | | |  |  |
| Quiz | | | | 1 | 50 |
| Homework | | | |  |  |
| Project | | | |  |  |
| Oral Exam | | | |  |  |
| 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** | | | Investigation of the basic concepts of the neuroscience | | | | | |
| **COURSE AIMS** | | | To teach the basic functioning mechanisms of the nervous system and provide general information about the functional and anatomical structure of the nervous system | | | | | |
| **COURSE OBJECTIVES** | | | Acquisition of the basic knowledge necessary to understand the Neuroscience topics | | | | | |
| **TEXTBOOK(S)** | | | Essentials of neural science and behavior: Kandel ER, Schwartz,JH, Jessell TM, Appleteon&Lange, 1995. | | | | | |
| **REFERENCES** | | |  | | | | | |

|  |  |  |
| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Particle transport through the cell membrane |
| 2 |  | Ion channels |
| 3 |  | Resting membrane potential |
| 4 |  | Electrotonic potentials |
| 5 |  | Action potential |
| 6 |  | Voltage and Patch-Clamp Techniques |
| 7 |  | Signaling between nerve cells |
| 8 |  | **Mid-term examination** |
| 9 |  | Chemical synaptic transmission (Quantal analysis of neurotransmission) |
| 10 |  | Electrical synaptic transmission |
| 11 |  | Excitatory postsynaptic potentials |
| 12 |  | Inhibitory postsynaptic potentials |
| 13 |  | Biophysical view of the chemical senses |
| 14 |  | Biophysical view of the vision and hearing |
| 15 |  | Biological control |
| 16 |  | Review |

**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 center of ethical problems | |  |  | **X** |
| **Instructor Name**  **Sign**  Prof.Dr.Ferhan ESEN | | **Date**  12.04.2013 | | | | |

**ESOGÜ INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **:** 522601202 | | **DEPARTMENT: INTERDISCIPLINARY NEUROSCIENCE** | | | |
| **COURSE NAME:** | Cellular and Molecular Neurobiology | | | | | |
| **INSTRUCTOR NAME** | | **COURSE LANGUAGE**  **Turkish: x**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
| Doç. Dr. Didem TURGUT COŞAN | |  | |  | 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 | | 0 | 3 | 9 | COMPULSORY ELECTIVE  ** x** | |
|  | | | | | | | | |
| **ASSESMENT CRITERIA** | | | | | | | | |
| **MID-TERM** | | | **ACTIVITY** | | | | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | | | | 1 | 30 |
| 2 nd Mid- Term | | | |  |  |
| Quiz | | | |  |  |
| Homework | | | |  |  |
| Project | | | | 1 | 30 |
| Oral Exam | | | |  |  |
| Other (………) | | | |  |  |
| **FINAL** | | | Quiz | | | |  |  |
| Homework | | | | **1** | **40** |
| Project | | | |  |  |
| Oral Exam | | | |  |  |
| Other(……………….) | | | |  |  |
| **MAKE-UP EXAM** | | | Oral | | | Written | Oral and Written | Multiple Choice |
|  | | | **x** |  |  |
| **PREREQUISITE(S)** | | |  | | | | | |
| **COURSE CONTENT** | | | Biological structures and properties of nerve cells. Molecular functions of nerve cells. At the molecular level the interaction of neurons. Gap connections of neuronal cell. Molecular pathways of neurochemical message. Molecular mechanisms of secretion to neuron sinaps of neuro-hormones and neuro-transmitters. Microtubules proteins interact with microtubules and microtubule-dependent motor proteins in neurons. The importance of the changes in the molecular level in neurons in neurodegenerative conditions. | | | | | |
| **COURSE AIMS** | | | Nerve cell biology is an area of ​​huge advances occurred in the last decade. Neurological sciences, modern biology to understand the activities of the brain is developing into the most dynamic area of ​​the cellular and molecular biological approaches. The main purpose of neurobiology, constituted the understanding of how the behavior of nerve cells. This is possible with the understanding of the cellular and molecular characteristics of neurons. In this course will be taught the structures and mechanisms of nerve cells and students will understand how they create these mechanisms. | | | | | |
| **COURSE OBJECTIVES** | | | This course is aimed to understanding of the structure and function of nerve cells, nervous system diseases and understanding of the mechanisms at the cellular level. | | | | | |
| **TEXTBOOK(S)** | | | An introduction to cellular and molecular neuroscience, Bryne Roberts, 2004, Elsevier. | | | | | |
| **REFERENCES** | | | (1) I. B. Levitan, L. K. Kaczmarek, 1997, The Neuron: Cell and Molecular Biology, Oxford University Press (2) J. R. Cooper., F. E. Bloom, R. H. Roth, 1996, The Biochemical Basis of Neuropharmacology, Oxford University Press (3) Gary Banker, 1998. Culturing Nerve Cells (Cellular and Molecular Neuroscience) (2nd edition), MIT Press (4) Dale Purves, 2000. Neuroscience (2nd Bk&cdr edition), Sinauer Assoc.  (5) L. Gordon, Fain,1999. Molecular and Cellular Physiology of Neurons, Harvard University Press (6) W. Maxwell Cowan, 2000. Synapses. Johns Hopkins University Press | | | | | |

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| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Biological structures and molecular properties of nerve cells |
| 2 |  | General functions of nerve cells at the molecular level |
| 3 |  | Molecular mechanisms of secretion to neuron sinaps of neuro-hormones and neuro-transmitters |
| 4 |  | The interaction of neurons at the molecular level |
| 5 |  | The role of protein phosphorylation in regulating neuronal cell growth and and the importance of neuronal signal transduction pathway |
| 6 |  | The importance of the mechanisms in neuronal cell of communication between cells with gap connections |
| 7 |  | Microtubules proteins interact with microtubules and microtubule-dependent motor proteins in neurons |
| 8 |  | The importance of mechanisms of neurodegeneration in cells |
| 9 |  | The importance of development of disease and changes in neurons in neurodegenerative conditions |
| 10 |  | Mechanisms of neuronal cell death |
| 11 |  | Various cellular mechanisms and pathways in cell death |
| 12 |  | The importance in neuronal mechanism of cell death associated with free radical damage |
| 13 |  | The importance of repair and regeneration at the molecular level after injury to the nervous system |

**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 |  |  |  |
| 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**  Doç. Dr. Didem TURGUT COŞAN | **Date**  **04.04.2013** |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 522601203 | | **DEPARTMENT: Interdisciplinary Neuroscience** | | | |
| **COURSE NAME:** | **Neuropsychopharmacology** | |  | | | |
| **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** | | | Providing information about the neuropsychiatric disorders, substance abuse and mechanisms of action. | | | | |
| **COURSE AIMS** | | | Evaluating the knowledge about development of neuropsychiatric disorders with pharmacological mechanisms.  Defining the features of substance abuse and pharmacological approach to its mechanism of occurrence. | | | | |
| **COURSE OBJECTIVES** | | | Pharmacological approach to the knowledge about neuropsychiatric disorders, instructing thw pharmacological approach to the addiction, and achievement of skill acquisition in understanding and interpreting the studies on neuropsycopharmacology and substance abuse. | | | | |
| **TEXTBOOK(S)** | | | 1. KAYAALP, S O. (2012); Akılcı 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. | | | | |

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| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Introduction to neuropsychopharmacology 1 |
| 2 |  | Introduction to neuropsychopharmacology 2 |
| 3 |  | Pharmacologic approach and mechanisms in the development of pain |
| 4 |  | Pharmacologic approach and mechanisms in neuropathic pain |
| 5 |  | Pharmacologic approach and mechanisms in epilepsy |
| 6 |  | Pharmacologic approach and mechanisms in Parkinson’s Disease |
| 7 |  | Midterm exam |
| 8 |  | Pharmacologic approach and mechanisms in affective disorder |
| 9 |  | Pharmacologic approach and mechanisms in schizophrenia |
| 10 |  | Pharmacologic approach and mechanisms in Obsessive compulsive disorder |
| 11 |  | Pharmacologic approach to the substance abuse 1 |
| 12 |  | Pharmacologic approach to the substance abuse 2 |
| 13 |  | Pharmacologic approach to the substance abuse 3 |
| 14 |  | Pharmacologic approach and mechanisms in other neuropsychiatric disorders |
| 15 |  | 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**  **Sign**  Prof. Dr. Fatma Sultan KILIÇ | | **Date**  12-4-2013 | | | |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 522601204 | | **DEPARTMENT: Interdisciplinary Neuroscience** | | | |
| **COURSE NAME:** | **Development and histology of nervous tissue** | |  | | | |
| **INSTRUCTOR NAME** | | **COURSE LANGUAGE**  **Turkish: X**  **English:** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
| **Prof. Dr. Varol ŞAHİNTÜRK** | |  | |  | 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** | 2 | 0 | 0 | 2 |  | 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** | | | Developmental and histological futures of nervous tissue | | | | |
| **COURSE AIMS** | | | Teaching of development and histology of nervous tissue | | | | |
| **COURSE OBJECTIVES** | | | To prepare to understanding of abnormal developmental and microscopic structures of nervous tissue via teaching 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** | | |  | | | | |

|  |  |  |
| --- | --- | --- |
|  | **COURSE SYLLABUS** | |
| **WEEK** | **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Human developmental stages (first week) |
| 2 |  | Human developmental stages (second week) |
| 3 |  | Human developmental stages (third week) |
| 4 |  | Human developmental stages (third week) |
| 5 |  | Embryonic germ layers |
| 6 |  | **Mid-term examination** |
| 7 |  | Futures and derivatives of ectoderm |
| 8 |  | Initial development stages of nervous system |
| 9 |  | Development of neural plaque and neural tube |
| 10 |  | Futures of neuroepithelium |
| 11 |  | Derivatives of neural crest |
| 12 |  | Neuron structure |
| 13 |  | Types of neurons |
| 14 |  | Neuroglial cells |
| 15 |  | General futures of nervous tissue |
| 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**  12.04.2013 |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521301205 | | **DEPARTMENT: Physiology** | | | |
| **COURSE NAME:** | **Neuronal and hormonal control mechanisms** | |  | | | |
| **INSTRUCTOR NAME**  **Prof. Dr. Ziya KAYGISIZ** | | **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  AutumnX | 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 Written………) | | |  |  |
| **FINAL** | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other(…Final Written…………….) | | | **1** | **50** |
| **MAKE-UP EXAM** | | | Oral | | Written | Oral and Written | Multiple Choice |
|  | | **X** |  |  |
| **PREREQUISITE(S)** | | |  | | | | |
| **COURSE CONTENT** | | | Neuronal and hormonal control mechanisms | | | | |
| **COURSE AIMS** | | | To teach neuronal and hormonal control mechanisms | | | | |
| **COURSE OBJECTIVES** | | | To answer the questions about neuronal and hormonal control mechanisms | | | | |
| **TEXTBOOK(S)** | | | Baret K. Ganong’s Review of Medical Physiology, 23 Edition Mac GrawHill, 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 |  | Neuron types, glial cells, neurotrophins |
| 2 |  | Synapses |
| 3 |  | Neurotransmitters |
| 4 |  | Sensory receptors |
| 5 |  | Reflexes |
| 6 |  | Sensory pathways |
| 7 |  | Control of posture and movement,motor areas |
| 8 |  | Midterm exam |
| 9 |  | Cerebellum and basal ganglia |
| 10 |  | Hypothalamus, limbic system, autonomic nervous system |
| 11 |  | Pituitary hormones |
| 12 |  | Thyroid hormones |
| 13 |  | Adrenocortical hormones |
| 14 |  | Pancreas hormones |
| 15 |  | Gonadal hormones, calcium and phosphate metabolism and hormonlar |
| 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**  **Sign**  Prof. Dr. Ziya KAYGISIZ | **Date**  15.11.2012 |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 521801205 | | **DEPARTMENT: PSYCHIATRY** | | | |
| **COURSE NAME:** | Biological Basis of Human Behaviors | |  | | | |
| **INSTRUCTOR NAME** | | **COURSE LANGUAGE**  **Turkish: X**  **English: ** | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
| Prof. Dr. Cem KAPTANOĞLU | |  | |  | 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 | | |  |  |
| 2 nd Mid- Term | | |  |  |
| Quiz | | |  |  |
| Homework | | | 1 | 40 |
| Project | | |  |  |
| Oral Exam | | |  |  |
| Other (………) | | |  |  |
| **FINAL** | | | | Quiz | | |  |  |
| Homework | | |  |  |
| Project | | | 1 | 60 |
| Oral Exam | | |  |  |
| Other(……………….) | | |  |  |
| **MAKE-UP EXAM** | | | | Oral | | Written | Oral and Written | Multiple Choice |
| **100** | |  |  |  |
| **PREREQUISITE(S)** | | | |  | | | | |
| **COURSE CONTENT** | | | | Biological roots of human behaviours discussed in terms of evolutionary, filogenetic and neuroscientific findings. | | | | |
| **COURSE AIMS** | | | | Students will learn that biological basiscs of human behaviours are important but not sufficient to explain all dynamics of human behaviours. | | | | |
| **COURSE OBJECTIVES** | | | | Main aim of this course is to teach students those neuroscientific aspects of human behaviours and their relations to psychic life of hman beings. | | | | |
| **TEXTBOOK(S)** | | | | Descardes Error by Antonio R. Damasio, Emotional Intelligence by Daniel Goleman. | | | | |
| **REFERENCES** | | | | Brave New Brain by Nancy C. Andreasen. | | | | |
|  | | | | | | | | |
|  | **COURSE SYLLABUS** | | | | | | | |
| **WEEK** | **DATE** | | **SUBJECTS/TOPICS** | | | | | |
| 1 |  | | The Brain and Its Functioning | | | | | |
| 2 |  | | The Brain and Its Functioning | | | | | |
| 3 |  | | Revolution of Brain in Social Environment | | | | | |
| 4 |  | | Revolution of Brain in Social Environment | | | | | |
| 5 |  | | The Relationship Between Mental Formation and Biological Evolution | | | | | |
| 6 |  | | The Relationship Between Mental Formation and Biological Evolution | | | | | |
| 7 |  | | The Relationship Between Mental Formation and Biological Evolution | | | | | |
| 8 |  | | Mid-term exam | | | | | |
| 9 |  | | Biological Projections of Emotion | | | | | |
| 10 |  | | Biological Projections of Emotion | | | | | |
| 11 |  | | Biological Projections of Emotion | | | | | |
| 12 |  | | Biological Projections of Language | | | | | |
| 13 |  | | Biological Projections of Language | | | | | |
| 14 |  | | Biological Projections of Thought | | | | | |
| 15 |  | | Biological Projections of Thought | | | | | |
| 16 |  | | Biological Projections of Thought | | | | | |

**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. Cem KAPTANOĞLU | **Date**  30.11.2012 |

******ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | 522602201 | | **DEPARTMENT: Interdisciplinary Neuroscience** | | | |
| **COURSE NAME:** | **Nerve Physiology** | |  | | | |
| **INSTRUCTOR NAME**  **Pro. Dr. Ziya KAYGISIZ** | | **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 | 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 Written…………….) | | | **1** | **50** | |
| **MAKE-UP EXAM** | | | | Oral | | Written | Oral and Written | Multiple Choice | |
|  | | **X** |  |  | |
| **PREREQUISITE(S)** | | | |  | | | | | |
| **COURSE CONTENT** | | | | Physiology of the peripheral and central nervous systems | | | | | |
| **COURSE AIMS** | | | | To teach principle subjects of the peripheral and central nervous systems | | | | | |
| **COURSE OBJECTIVES** | | | | To answer the questions about Membrane Potentials, Synapses, ,Reflexes, Sensations, Control of Posture and Movement, Cerebellum, Basal Ganglia, Hypotalamus, Autonomic Nerveous System | | | | | |
| **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** | | | |  | | | | | |
|  | **COURSE SYLLABUS** | | | | | | | |
| **WEEK** | **DATE** | | **SUBJECTS/TOPICS** | | | | | |
| 1 |  | | Overview of the nerve physiology | | | | | |
| 2 |  | | Membrane Potentials | | | | | |
| 3 |  | | Stimulation of nerves and impulse transmission | | | | | |
| 4 |  | | Synaptic tranmission | | | | | |
| 5 |  | | Synaptic tranmission | | | | | |
| 6 |  | | Peripheral nerve physiology | | | | | |
| 7 |  | | Reflexes | | | | | |
| 8 |  | | Midterm Exam | | | | | |
| 9 |  | | The physiology of the central nervous system | | | | | |
| 10 |  | | Sensations | | | | | |
| 11 |  | | Reticular Formation, Sleep and Alert Behavior | | | | | |
| 12 |  | | Control of motor functions | | | | | |
| 13 |  | | Hypotalamus | | | | | |
| 14 |  | | Limbic system | | | | | |
| 15 |  | | Functions of the sympathetic and parasympathetic systems | | | | | |
| 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 (……………………………………….) |  |  | **X** |
| 14 | other (……………………………………….) |  | **X** |  |

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| **Instructor Name**  **Sign**  Prof. Dr. Ziya KAYGISIZ | **Date**  15.04.2013 |

**ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF INTERDISCIPLINARY NEUROSCIENCE**

**COURSE INFORMATION FORM**

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| --- | --- | --- | --- | --- | --- | --- |
| **COURSE CODE:** | **521202202** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Basic Principles in Neuroscience** | | | | | |
| **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 □ | 2 | 2 | - | | 3 | 9 | | 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** | | The first part of the course deals with the introductory concepts of the nervous system, such as cellular biology of the neuron and neuroglia, electrochemical properties of nervous transmission and neuronal proteins. In the second part, orientation to nervous system, anatomical organization of functional systems will be examined and special emphasis will be given to cerebral cortex. | | | | | | | | |
| **COURSE AIMS** | | This course is intended to provide the student with baseline information required for understanding the structure and function of the adult nervous system. | | | | | | | | |
| **COURSE OBJECTIVES** | | By the end of this course, students will be able to learn the structures that constitute the nervous system and processing principles of them. | | | | | | | | |
| **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 cellular components of nervous tissue |
| 2 | Electrochemical properties of nervous transmission |
| 3 | The membrane potential |
| 4 | The action potential |
| 5 | Release of neurotransmitters and neurotransmitter receptors |
| 6 | Cell-cell communication |
| 7 | Information processing in dendrites |
| 8 | MID-TERM EXAM |
| 9 | Orientation to central nervous system |
| 10 | Fundamentals of sensory systems |
| 11 | Fundamentals of motor systems |
| 12 | Cerebral topography |
| 13 | Laminar and columnar oranization of the neocortex |
| 14 | Sensory and motor cortical areas |
| 15 | Hemispheric asymmetries |
| 16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **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:** | **521202210** | | **DEPARTMENT: ANATOMY** | | | |
| **COURSE NAME:** | **Anatomy of the Nervous System** | | | | | |
| **INSTRUCTOR NAME**  Prof.Dr. Emel ULUPINAR | | **COURSE LANGUAGE**  **Turkish:** 🗵  **English:** □ | | **Course Catagory** | | |
| Technical | Medical | Other(……) |
|  | |  | 🗴 |  |

**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)** | | In this course, it is given basic anatomic knowledge about the nervous system | | | | | | | | |
| **COURSE CONTENT** | | Give the anatomical information about the nervous system and make clear the functional importance. | | | | | | | | |
| **COURSE AIMS** | |  | | | | | | | | |
| **COURSE OBJECTIVES** | | Determination of anatomic points of the related system and its place on human body system, understanding of the functional importance, the ability to provide the clinical integration (relations) of the 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 and spinal nerves |
| 6 | Bulbus |
| 7 | Pons |
| 8 | MID-TERM EXAM |
| 9 | Cerebellum |
| 10 | Mesencephalon, Diencephalon |
| 11 | Telencephalon, the main cortical areas |
| 12 | Rhinencephalon, limbic lobe and olfactory pathways |
| 13 | Basal nuclei and extrapyramidal system |
| 14 | Ventricular system, meninges of the brain, cranial vessels |
| 15 | Autonomic Nervous System |
| 16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **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:** | 521702204 | | **DEPARTMENT: Pharmacology** | | | |
| **COURSE NAME:** | Transmission Mechanisms  in Nervous System | |  | | | |
| **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** | | | | History of neurotransmission concept, aspect of neurohumoral transmission,synthesis, biotransformation and elimination of neurotransmitters,cholinergic transmission, cholinergic receptors, adrenergic transmission, adrenergic receptors,relationship between the nervous and endocrine systems | | | | | |
| **COURSE AIMS** | | | | To teach the general mechanisms of neurohumoral transmission | | | | | |
| **COURSE OBJECTIVES** | | | | By the end of this module students will be able to:  1- Lear history of neurotransmission concept, aspect of neurohumoral transmission,synthesis, biotransformation and elimination of neurotransmitters, cholinergic transmission, cholinergic receptors, adrenergic transmission, adrenergic receptors, relationship between the nervous and endocrine systems.  2- To be able to realize the neurohumoral transmission**.** | | | | | |
| **TEXTBOOK(S)** | | | | 1. KAYAALP, S O. (2012); Akılcıl Tedavi Yönünden Tıbbi Farmakoloji. | | | | | |
| **REFERENCES** | | | | 1.Hardman JG, Limbird LE, Gilman AG, The Pharmacological Basis of Therapeutics,McGraw-Hill, New York, (10th ed.)2001.  2. Katzung BG,Basic and Clinical Pharmacology, ,McGraw-Hill, New York (7th ed.)2001.  3.Brody TM, Larner J, Minneman KP, Human Pharmacology Molecular to Clinical Mosby, Boston, (3 th ed.) 1998.  4.Rang HP, Dale MM, Ritter JM, Pharmacology, Churchill Livingstone, Edinburgh, (3th ed.)1995. | | | | | |
|  | **COURSE SYLLABUS** | | | | | | | |
| **WEEK** | **DATE** | | **SUBJECTS/TOPICS** | | | | | |
| 1 |  | | History | | | | | |
| 2 |  | | Concept of neuroregulateur (Neurotransmitter, neuromodulator, neurohormon) | | | | | |
| 3 |  | | Synthesis, biotransformation and elimination of acetylcholine | | | | | |
| 4 |  | | Cholinergic receptors | | | | | |
| 5 |  | | Synthesis, biotransformation and elimination of catecholamines | | | | | |
| 6 |  | | Adrenergic receptors | | | | | |
| 7 |  | | Cotransmitters | | | | | |
| 8 |  | | **Mid term exam** | | | | | |
| 9 |  | | Cholinergic transmission | | | | | |
| 10 |  | | Adrenergic transmission | | | | | |
| 11 |  | | Enteric nervous system | | | | | |
| 12 |  | | Nerotransmission of somatic motor nervous system | | | | | |
| 13 |  | | Signal transduction systems | | | | | |
| 14 |  | | Relationship between the nervous and endocrine systems | | | | | |
| 15 |  | | Relationship between the nervous and endocrine systems | | | | | |
| 16 |  | | **Final exam** | | | | | |

**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 |