

# VOCATIONAL SCHOOL OF HEALTH SERVICES

## ELECTRONEUROPHYSIOLOGY PROGRAM

2022-2023

### 1st YEAR FALL SEMESTER

#### **ATA101 PRINCIPLES OF ATATÜRK AND HISTORY OF REVOLUTIONS I** **THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

Recession of Ottoman Social and State Order and Reform Movements; The Disintegration of the Ottoman State and the Beginning of the National Struggle; Mustafa Kemal Pasha's Organization of the National Struggle in Anatolia; Opening of the First T.B.M.M.; Military and Political Developments Between 1920-1922; Revolutions and Counter-Reactions; Establishment of the Constitutional System; Domestic and Foreign Politics in the Republican Era; The Basic Features of the Turkish Revolution and the Thought Movements Affected by it; Innovations in Law, Education, Economy and Social Life; Atatürk's Principles and General Characteristics of These Principles; Evaluation of Kemalism in Ideological Perspective.

#### **ENF103 ELECTROENCEPHALOGRAPHY-EEG (PEC) THEORETICAL: 2 PRACTICAL APPLICATION: 2 CREDIT: 3 ECTS: 7**

Introduction to electroneurophysiology, EEG generators and rhythmic EEG activity, EEG device, EEG electrodes and placement, polarity and field detection in EEG, Technical standards in clinical EEG recording, Artifacts, Definition of normal EEG, Activation methods, Neonatal EEG, Abnormal EEG patterns and Relationship with neurological diseases, Classification of seizures, Computerized and interictal EEG analysis methods, Video EEG monitoring, Ictal, EEG semiology.

#### **FZY101 PHYSIOLOGY THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

Introduction to Physiology, Homeostasis, Cell Physiology, Blood Physiology, Cardiovascular System Physiology, Respiratory System Physiology, Excretory System Physiology, Digestive System Physiology, Reproductive Physiology, Nervous System Physiology, Endocrine System Physiology, Sensory Physiology.

#### **INGU101 ENGLISH I THEORETICAL: 3 PRACTICAL APPLICATION: 0 CREDIT: 3 ECTS: 3**

tokens; Prepositions: Place, Time, Movement; Singular and Plural Nouns: Countable and Uncountable Nouns; Tenses: Present tense, Past tense structures; Modals: Will, Should, Should not, Must, Must not, Can; Comparative structures; Pronouns: Personal pronouns, Possessive pronouns; Adjectives; Affirmative sentences, Negative sentences and Interrogative sentences; Conjunctions: and, but, -while, Because.

**ENF123 NEUROPHYSIOLOGICAL DEVICE AND EQUIPMENT TECHNOLOGIES**  
**THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 4**

Basic electrical knowledge, Load and Current, Current and Voltage, Ohm's law, Factors affecting resistance, Biopotentials (EEG, EMG), General imaging principles, General sensor types (pressure, temperature), Basic components of physiological signal trackers (sensor, amplifier), Biopotential electrodes and their types, Digital EEG device features, Digital EEG device features, EEG device and its basic components and possible problems, EMG device and its basic components and possible problems, PSG device and its basic components and possible problems.

**MYO103 BASIC ANATOMY THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

Introduction to Anatomy, Locomotor System Anatomy, Respiratory System Anatomy, Circulatory System Anatomy, Digestive System Anatomy, Urinary System Anatomy, Genital System Anatomy, Endocrine System Anatomy, Nervous System Anatomy, Sensory Organs Anatomy.

**FAR105 BASIC PHARMACOLOGY THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

Introduction to pharmacology, Pharmaceutical drug forms, Absorption and distribution of drugs. Metabolism and excretion of drugs. Drugs interactions. (Antagonism, Synergism) Mechanisms of action of drugs. Autonomic nervous system drugs (Cholinergic Drugs) Anticholinergic drugs. Autonomic nervous system drugs. (Sympathomimetic Drugs) Sympatholytic drugs. Drugs that affect the central nervous system. Drugs affecting the cardiovascular system. Anti-inflammatory drugs. Narcotic analgesics. Nonnarcotic analgesics.

**MYO003 MEDICAL TERMINOLOGY THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

Basic definitions and terms related to human structure, basic information about disease, basic elements that make up medical terms, terms related to movement system, terms related to respiratory system, terms related to heart and circulatory system, terms related to digestive system, terms related to nervous system, reproductive system, terms related to endocrine system.

**TURK101 TURKISH LANGUAGE I THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

What is Language: Theories about the birth of language, Language-culture-nation relationship; Language Revolution: Turkish Language Institution and its studies; Languages of the World: Language families, the place of Turkish among the world languages; Features of Turkey Turkish: Phonetic features, Form features, Sentence features; Writing rules; Punctuation; Correspondence: CV, Petition, Letter, Business letter, Telegram.

**RKUL101 UNIVERSITY CULTURE I (UEC) THEORETICAL: 0 PRACTICAL APPLICATION: 2 CREDIT: 1 ECTS: 1**

Each semester includes seminars, conferences, panels, workshops and talks to be held for 14 weeks within the framework of a program consisting of suggestions from academic units, student council and student clubs at the university.

## **1st YEAR SPRING SEMESTER**

### **ATA102 PRINCIPLES OF ATATÜRK AND HISTORY OF REVOLUTIONS II** **THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

Recession of Ottoman Social and State Order and Reform Movements; The Disintegration of the Ottoman State and the Beginning of the National Struggle; Mustafa Kemal Pasha's Organization of the National Struggle in Anatolia; Opening of the First T.B.M.M.; Military and Political Developments Between 1920-1922; Revolutions and Counter-Reactions; Establishment of the Constitutional System; Domestic and Foreign Politics in the Republican Era; The Basic Features of the Turkish Revolution and the Thought Movements Affected by it; Innovations in Law, Education, Economy and Social Life; Atatürk's Principles and General Characteristics of These Principles; Evaluation of Atatürkism in Ideological Perspective.

### **ENF118 BIOPHYSICS THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2** **ECTS: 2**

Basic Electrical Concepts and Applications in Medicine, Membrane Biophysics, Electrical Properties of Cell Membranes, Local Potentials, Action Potentials, Transducers, Filters, Amplifiers, Measurement Instruments and Oscilloscope, Biophysical Fundamentals of EEG, Excitation Potentials.

### **INGU102 ENGLISH II THEORETICAL: 3 PRACTICAL APPLICATION: 0 CREDIT: 3** **ECTS: 3**

Tenses: Present tense, Present tense, Past tense, Future tense structures; Modes: Might, Could, Can, Must, May; Adverbs: Place, Direction, Purpose, Adverbs of State; Adjectives: Order of adjectives, Comparison, Superlative structures; Passive Structure: Present, Extended, Past, Future passive structure; Conditional Phrases; Adjective Phrases; Transfer Sentences; Verb Structures: to, -ing; Noun Phrases; Adverb Phrases; Comparative Structures.

### **ENF102 COGNITIVE NEUROPHYSIOLOGY I (PEC) THEORETICAL: 2 PRACTICAL** **APPLICATION: 0 CREDIT: 2 ECTS: 4**

Physiological basis of behavior and introduction to cognitive neurophysiology, introduction to physiological mechanisms of intellectual functions of the brain, Cerebral Asymmetry, Motor Asymmetry, Spatial Processing, Verbal Processing, Attention in cognitive neurophysiology, Physiopathology of visual attention deficit, Hemispatial neglect, Selective attention, Sleep.

### **ENF104 NEUROLOGY I THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2** **ECTS: 4**

Consciousness Disorders and Coma, Primary Headaches, Secondary Headaches, Parkinson's Disease and Movement Disorders, Epilepsy, Cerebrovascular Diseases, Spinal cord diseases, Neuromuscular junction and muscle diseases, Amnesia and

Dementia diseases, Neglect Syndromes, treatment methods used, importance of EEG in neurological diseases.

**RPSI209 POSITIVE PSYCHOLOGY AND COMMUNICATION SKILLS (UEC)**  
**THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

Definition of positive psychology, basic concepts, theoretical foundations and applications, socioemotional experience and behavior, examining the brain-behavior systems examined in cognitive sciences, self and others recognition, awareness and empathy, psychosocial life skills and problem solving skills, motivation and planning, anger, aggression and violence, relationship management and sound decision making, perseverance and compromise.

**ENF124 NERVE AND MUSCLE ANATOMY THEORETICAL: 2 PRACTICAL APPLICATION: 2 CREDIT: 3 ECTS: 3**

It is aimed to gain basic anatomy knowledge so that they can apply EMG (Electromyography) under the supervision of experts in the electrophysiology laboratory of the relevant clinics. Overview of peripheral nervous system, autonomic nervous system and muscle anatomy. Understanding the holistic understanding of muscle and nerve anatomy, functionality, topography.

**TURK102 TURKISH LANGUAGE II THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

To gain the ability to use the mother tongue correctly; Punctuation marks and spelling rules, composition rules, writing types are discussed with examples and writing activities are carried out in this course, in which students who have acquired this skill and come to university are based on generating ideas and writing their thoughts in order to improve their abilities in this field. In addition, various novels, poetry books and theater works are read and studied. A reading theater is made in the classroom and applied emphasis and intonation lessons are given with various diction techniques.

**ENF120 SLEEPING EEG AND PSG THEORETICAL: 2 PRACTICAL APPLICATION: 4 CREDIT: 4 ECTS: 4**

Clinical seizure features, Localized and generalized epileptiform patterns, Slow waves and asymmetries, EEG report writing, Focal brain lesions, Between diffuse, toxic and metabolic encephalopathies, Organic brain syndromes and dementia, Coma and other changes in consciousness, Drug effect, Psychiatric diseases and EEG, Electroencephalography, Chronic intracerebral recording, Sleep disorders, Intraoperative monitoring.

**RKUL102 UNIVERSITY CULTURE II (UEC) THEORETICAL: 0 PRACTICAL APPLICATION: 2 CREDIT: 1 ECTS: 1**

Each semester includes seminars, conferences, panels, workshops and talks to be held for 14 weeks within the framework of a program consisting of suggestions from academic units, student council and student clubs at the university.

## **2nd YEAR FALL SEMESTER**

### **ENF215 ELECTROMIOGRAPHY-EMG THEORETICAL: 2 PRACTICAL APPLICATION: 4 CREDIT: 4 ECTS: 10**

Basic information about EMG devices and electrodes, artifacts, EMG safety, Motor conduction studies, Sensory conduction studies, Needle electromyography, Late responses, Neuromuscular junction physiology, Electrophysiological examination in radiculopathies, Electrophysiological findings in plexopathies, Electrophysiological examination in polyneuropathies, Electrophysiological examination in entrapment neuropathies, Peripheral Electrophysiological examination in nerve traumas, Electrophysiological findings in anterior horn diseases, Electrophysiological findings in neuromuscular junction and muscle diseases, EMG examination planning. Single fiber electromyography, EMG techniques, Electromyographic examination of cranial nerves, Reflexology in electrophysiology laboratory, Electromyography in children, Electrophysiological examinations in movement disorders, Spasticity and other CNS diseases, Autonomic nervous system examinations, EMG device information, Strategies in EMG examination, EMG report, Signal analysis methods in electromyography, Planning of clinical electromyography studies, Statistics in clinical electromyography studies.

### **ILK101 FIRST AID (PEC) THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

First aid definition, importance, principles, first aid kit. Bleeding. Shock and its types. Injuries. CPR (Cardio-Pulmonary Resuscitation) Foreign body aspiration. Fractures, dislocations and sprains. They burn. Exposure to heat and cold. Poisonings. First aid in medical situations. Geriatric emergencies and first aid.

### **ENF211 COGNITIVE NEUROPHYSIOLOGY II (PEC) THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 5**

Learning; Nonassociative Learning, Associated Learning, Neuroplasticity, Long Term Potency (LTP), Long Term Depression (LTD). Memory; Short-Term Memory, Working Memory, Long-Term Memory, Explicit memory; Episodic Memory, Semantic Memory, Types of Implicit Memory, Amnesias and dementia. Lateralization in the Brain, Neuronal Mechanism of Speech, Catagorization in the Brain, Frontal processes, Neural systems of affect, Neurophysiology of language.

### **ENF213 NEUROLOGY II THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 5**

Epilepsy and other neurological episodic diseases. Radiculopathies, Plexopathies, Polyneuropathies, Trap neuropathies, Peripheral nerve traumas, Language disorders, Behavioral Neurology, Muscle Diseases, Sleep Disorders, Demyelinating Diseases, Central Nervous System Infections, Gait and Posture Disorders, Visual Disorders.

### **SAH101 HEALTH LAW (PEC) THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

To convey the basic institutions and concepts of the Health Law, the legality of the interventions, the legal nature of the relations between the physician and the patient, and the responsibility for compensation.

## **VOCATIONAL SCHOOL OF HEALTH ELECTIVE COURSE**

### **MYO015 Social Responsibility Project THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

Introduction to the course, basic concepts, the concept of social responsibility and an overview of social responsibility campaigns, determination of project topics (children, elderly, women, environmental problems, people with education and learning problems, patients and health problems, etc.) project preparation presentation. Getting to know non-governmental organizations and their work.

### **MYO021 Entrepreneurship and Project Culture THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

In this course, in cooperation with Üsküdar University, GOSB Technopark and GOSB Technopark companies, the topics of marketing in entrepreneurship, human resources in entrepreneurship, financial management in entrepreneurship, technology management in entrepreneurship, technology management in entrepreneurship, patent law, R&D and innovation in entrepreneurship will be discussed.

### **MYO020 Career Planning and Professional Competencies THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

In some weeks, the courses will be taught by inviting industry professionals and guest educators from public institutions to establish industry connections. In the course, students will be informed about the methods and tools used in the recruitment processes, and applications and assignments will be given to reinforce these methods.

## **2nd YEAR SPRING SEMESTER**

### **ENF208 SENSORY EVOKED POTENTIALS THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 5**

Motor excitation potentials, Cortical excitation methods in neurophysiological research, Clinical use of excitation potentials, Event-related potentials: P300, CNV, P50, MMN, Excitation potentials and functional neuroimaging methods.

### **ENF200 CLINICAL ELECTRONEUROPHYSIOLOGY THEORETICAL: 2 PRACTICAL APPLICATION: 8 CREDIT: 6 ECTS: 13**

It consists of 2 hours of theory and 8 hours of practical training. Gaining basic skills such as theoretical overview of the peripheral nervous system and understanding the electrical activities of peripheral nerves, working principles of EMG and shooting techniques, normal EMG, recognizing and removing artifacts, abnormal nerve conduction; VEP vision testing training, SEP somatosensory, BAEP brainstem auditory evoked potential. Motor excitation potentials, Cortical stimulation methods in neurophysiological research, Clinical use of excitation potentials, Event-related potentials, MMN, Excitation potentials and functional neuroimaging methods and teaching them with practical applications through equipment in the electroneurophysiology laboratory.

### **MET101 PROFESSIONAL ETHICS THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 2**

What is Deontology, Definition and Introduction, What is Morality, Characteristics of Morally Mature Individuals, Concepts of Health and Disease, What is Occupation, Principles of Profession, Teamwork, Place of Health Personnel in Society, Universal Declaration of Human Rights, Patient Rights, Law on Health Method and Regulations, Euthanasia, Ethics in Transplantation.

**ENF 210 NEUROMODULATION TREATMENTS (PEC) THEORETICAL: 2 PRACTICAL APPLICATION: 0 CREDIT: 2 ECTS: 3**

Overview of the central nervous system and understanding of its cortical electrical activities, technical examination of neuromodulation devices, clinical use of neuromodulation techniques. Gaining tDCS, rTMS and deep TMS application theory and skills under expert supervision (Neurologist) in the electrophysiology laboratory of the relevant clinics.

**ENF999 SUMMER INTERNSHIP THEORETICAL: 0 PRACTICAL APPLICATION: (20 WORKING DAYS) CREDIT: 0 ECTS: 9**

To have information about the functioning of the Electroneurophysiology laboratory, to get to know the EEG, EMG and PSG devices, to have information about their operation and to use these devices, to meet and inform the patient who comes for the EEG recording, to connect the electrodes for the EEG recording without any problems, to make the recording according to the standards and to end the recording .