T.C.

LOKMAN HEKIM UNIVERSITY

FACULTY OF MEDICINE

PHASE – I

2023-2024 EDUCATION TEACHING GUIDE

T.R.

LOKMAN HEKIM UNIVERSITY MEDICAL FACULTY

PHASE I COURSES and ECTS

CODE	COMPULSORY COURSES	T	P	TC	ECTS
MED-100	**BASIC MEDICAL SCIENCE – I (Phase I)**	**408**	**104**	**512**	**33**
RAPPORT101	***Adapting To University Life***	***1***	***0***	***1***	***0***
21010001	***Introduction to Medicine***	***75***	***12***	***87***	***6***
21010002	***Cell Organization and Metabolism***	***102***	***14***	***116***	***7***
21010003	***Introduction to Tissue Biology and Locomotor System***	***75***	***28***	***103***	***6***
21010004	***Locomotor System I***	***51***	***20***	***71***	***5***
21010005	***Locomotor System-II and Skin***	***59***	***11***	***70***	***5***
21010006	***Scientific and Clinical Approaches***	***35***	***15***	***49***	***4***
100103	Information Technologies	2	0	2	2
100102	Turkish Language and Literature I	2	0	2	2
100202	Turkish Language and Literature II	2	0	2	2
100101	Ataturk's Principles and History of Revolution I	2	0	2	2
100201	Ataturk's Principles and History of Revolution II	2	0	2	2
	TOTAL ECTS COMPULSORY				**43**
	ELECTIVE COURSES	**T**	**P**	**C**	**ECTS**
	University Elective 1	2	2	3	3
	University Elective 2	2	2	3	3
	University Elective 3	2	2	3	3
	University Elective 4	2	2	3	3
	Faculty Elective 1	2	0	2	4
	Faculty Elective 2	3	0	3	4
	Faculty Elective 3	1	1	2	4
	Faculty Elective 4	2	0	2	4
	TOTAL ECTS TO BE COLLECTED AS ELECTIVES				**22**
	TOTAL ECTS TO BE COLLECTED IN PHASE I				**65**

PHASE I OBJECTIVES AND LEARNING OUTCOMES

Aim:

During this period, the cell, which is the most essential unit in medical education, will be covered in detail. It is aimed at upskilling our students by the fundamentals of basic chemical and biological structures forming the organism, the concept of cell, which is the smallest structural and functional unit of living organisms, the basic structure of the tissue and skeletal system, the dynamics and general working principles of the system, basic communication skills, the importance of scientific research and methods of accessing scientific information and the approach and basic professional skills in social medicine.

Learning Objectives:

1. Defines the basic structure and functions of the cell.
2. Explains the interaction between cells, receptors, messenger systems and their functions.
3. Explains the role of the cell cycle in the growth and development stages of the organism and its importance in terms of the homeostasis of the organism.
4. Defines the structure, function and metabolism of biomolecules.
5. Explains the structure, synthesis and function of hereditary material.
6. Explains the basic processes, molecular mechanisms and regulation required for homeostasis.
7. Learns the basic histological examination methods and the use of microscope.
8. Distinguishes different cells and tissues with their structural and histochemical properties at the light microscope level.
9. Classifies microorganisms as disease agents, defines their general characteristics, has information about contamination and protection.
10. Discusses the importance of embryology and its place among other disciplines.
11. Explains the concept of basic health.
12. Recognizes the structures related to the movement system, explains the peripheral nervous system and the relationships between them and the peripheral vascular system.
13. Interprets the basic information about the movement system clinically.
14. Applies the necessary basic professional skill techniques in clinical practice.
15. Defines the sources for accessing information.
16. Explains the importance of being scientific in medicine.

INTRODUCTION TO MEDICINE COMMITTEE

COURSES	THEORETICAL COURSE DURATION (h)	PRACTICAL COURSE DURATION(h)	TOTAL COURSE DURATION (h)
21010001-01 Introduction to Committee	2	0	2
21010001-02 Anatomy	5	0	5
21010001-03 Biophysics	10	0	10
21010001-04 Physiology	2	0	2
21010001-05 Public Health	8	0	8
21010001-06 Medical Biochemistry	27	6	33
21010001-07 Medical Biology	21	6	27
TOTAL	**75**	**12**	**87**

AIMS AND LEARNING OBJECTIVES OF THE COMMITTEE

Aim:

By the end of this phase, where the information on compliance with the medical education process and introduction to basic sciences is explained, our students; will learn basic anatomical terminology, learn about medical history and basic health concepts and physician-patient communication, and comprehend the basic chemical and biological structure of the organism.

Learning Objectives:

1. Gains knowledge of the structure, functions and metabolism of biomolecules by acquiring knowledge of organic chemistry.
2. Defines the structural features in organic molecules.
3. Can name organic compounds based on their functional groups.
4. Classifies organic compounds according to their structural properties.
5. Learns the basic concepts of molecular biology and genetics.
6. Understands the structure, synthesis and function of hereditary material.
7. Gains knowledge about the damages in genetic material, its causes and its place in medicine.
8. Explains the basic principles of biophysics.
9. Explains the functions of living systems with a mathematical approach, explains the resting state of the mammalian cell membrane.
10. Learns the basic anatomical terminology.
11. Defines the basic grammatical features of the words in medical terminology.
12. Understands the basic processes, molecular mechanisms and regulation required for homeostasis.

13. Explains the concept of basic health.
14. Makes a general explanation about the history of medicine from past to present.
15. Explains patient-doctor communication.
16. Defines important problems in terms of public health.
17. Interprets the important elements of communication in health.

TOPICS

ANATOMY		
Topic	**Type**	**Time**
Introduction to medical terminology	Theoretical	1
Latin grammar: Basic knowledge structure, pronunciation and spelling	Theoretical	1
Latin grammar: Noun, adjective, noun phrase, adjective phrase, comparison in adjectives (ranking), reduction in meaning	Theoretical	1
Latin grammar: Nouns derived from verbs, adjectives derived from nouns, adjectives derived from verbs, compound nouns and adjectives	Theoretical	1
Abbreviations, singular and plural, prepositions, prefixes and suffixes	Theoretical	1
BIOPHYSICS		
Topic	**Type**	**Time**
Introduction to biophysics and general concepts	Theoretical	1
Living things as an open system approach	Theoretical	1
Principles of matter and energy transport in biological systems	Theoretical	1
Its role in water and biological systems	Theoretical	1
Energy conversions in biological systems and biomolecules	Theoretical	1
Basic principles of thermodynamics and biological systems	Theoretical	1
Biophysical foundations of diffusion and osmosis processes in biological systems	Theoretical	2
The bioelectrical processes in living systems	Theoretical	2
PHYSIOLOGY		
Topic	**Type**	**Time**
Introduction to physiology and the concept of homeostasis	Theoretical	2
PUBLIC HEALTH		
Topic	**Type**	**Time**
Individual and social communication in health	Theoretical	2
Physician rights	Theoretical	1
The concepts of health and disease	Theoretical	1
Success stories in public health	Theoretical	1
Critical thinking in healthcare	Theoretical	1

Evidence-based medicine	Theoretical	1
Tobacco control	Theoretical	1
MEDICAL BIOCHEMISTRY		
Topic	**Type**	**Time**
Carbon atom bonds, molecular geometry and their charges	Theoretical	1
The structural formulas of organic compounds and the concept of functional groups	Theoretical	2
Isomerization of organic compounds	Theoretical	1
Reactive species and basic reaction mechanisms in organic chemistry	Theoretical	1
The concept of acidity and basicity in organic chemistry	Theoretical	2
Amino acids	Theoretical	4
Solution preparation	Practical	2
Protein structure	Theoretical	2
Globular proteins	Theoretical	2
Fibrous proteins	Theoretical	2
Enzymes I	Theoretical	2
Enzymes II	Theoretical	2
Amin acid separation by paper chromatography	Practical	2
Bioenergetics and Oxidative Phosphorylation	Theoretical	4
Spectrophotometer and spectrophotometric measurements	Practical	2
Nucleotide Metabolism	Theoretical	2
MEDICAL BIOLOGY		
Topic	**Type**	**Time**
Introduction to medical biology	Theoretical	1
Nucleic acids: Nucleoties, DNA and RNA	Theoretical	2
Structure and function of DNA	Theoretical	1
DNA synthesis and its control	Theoretical	1
DNA packaging and the chromatin structure	Theoretical	1
Isolation of DNA	Practical	2
Mutations and their mechanisms	Theoretical	2
DNA repair	Theoretical	2
Transcription	Theoretical	2
RNA structure and types	Theoretical	2
Genetic control mechanisms	Theoretical	2
Epigenetic mechanisms and cellular control mechanisms	Theoretical	2
DNA analysis by electrophoresis	Practical	2
Amplification of DNA by Polymerase Chain Reaction	Practical	2
Genetic code and protein synthesis	Theoretical	3

CELL ORGANIZATION AND METABOLISM COMMITTEE

COURSES	THEORETICAL COURSE DURATION (h)	PRACTICAL COURSE DURATION (h)	TOTAL COURSE DURATION (h)
21010002-01 Introduction to Committee	1	0	1
21010002-02 Biophysics	16	0	16
21010002-03 Physiology	10	0	10
21010002-04 Histology and Embryology	10	6	16
21010002-05 Medical Biochemistry	35	4	39
21010002-06 Medical Biology	30	4	34
TOTAL	**102**	**14**	**116**

AIMS AND LEARNING OBJECTIVES OF THE COMMITTEE

Aim:

At the end of this committee, they will learn about the smallest structural and functional unit of living organism, cell and genetic material, genetic mechanisms that control the formation and survival of normal structure, nucleic acid metabolism and cellular concepts related with basic sciences.

Learning Objectives:

1. Learns the basic histological examination methods and the use of microscope.
2. Distinguish different cells with their structural and histochemical features at the light microscope level.
3. Knows the principles of processing, protection and transmission of genetic information through generations.
4. Establishes the connection between the causes and consequences of errors and anomalies in genetic information.
5. Defines the basic structure and functions of the cell.
6. Explains the structure and functions of organelles and membranes in the cell.
7. Explains the cell membrane with electrical elements.
8. Explains cell physiology, interaction between cells, receptors, messenger systems and functions.
9. Explains the carbohydrate mechanism.
10. Classifies carbohydrates.
11. Defines lipid structure and metabolism.

12. Explains the role of the cell cycle in the growth and development stages of the organism and its importance in terms of homeostasis of the organism.
13. Explains the importance of apoptosis for the homeostasis of the organism.
14. Applies the basic professional skill techniques required in clinical practice.
15. Defines the sources of access to information.
16. Explains the importance of being scientific in medicine.

TOPICS

BIOPHYSICS		
Topic	**Type**	**Time**
The electrical potential/potential difference in cells responses to electrical stimulation	Theoretical	2
The electric field across membranes	Theoretical	2
Discussion on thermodynamic processes on the transport of ions across cells	Theoretical	2
The biophysical interpretation of Goldman-Hodgin-Katz (GHK) equation	Theoretical	2
Excitability of the membrane: the concept of threshold potential	Theoretical	1
Action potential of cell membranes, excitability and refractory periods of cells	Theoretical	2
Active conduction of membrane potential and action potential process in cells	Theoretical	1
Factors affecting the action potential pattern	Theoretical	2
The working principles and kinetic properties of ionic channels	Theoretical	2
PHYSIOLOGY		
Topic	**Type**	**Time**
Characteristics of the cell membrane	Theoretical	2
Substance transport across the cell membrane	Theoretical	2
Interaction between cells	Theoretical	2
Cell receptors and signal transduction	Theoretical	2
Cellular communications and secondary messengers	Theoretical	2
HISTOLOGY AND EMBRIOLOGY		
Topic	**Type**	**Time**
Introduction to histology, the types, working and handling principles of microscopes	Theoretical	2
Routine histological laboratory techniques	Theoretical	2
Advanced histological laboratory techniques	Theoretical	1
Digital Microscopy	Practical	2

Histochemical methods	Practical	2
Histology of the human cell - I	Theoretical	2
Histology of the human cell - II	Theoretical	2
Histology: Cell types	Theoretical	1
Practice: Cell types	Practical	2
MEDICAL BIOCHEMISTRY		
Topic	**Type**	**Time**
Introduction to Carbohydrates	Theoretical	2
Carbohydrates Metabolism and Glycolysis	Theoretical	2
Tricarboxylic Acid Cycle and Pyruvate Dehydrogenase Complex	Theoretical	2
Gluconeogenesis	Theoretical	2
Glycogen Metabolism	Theoretical	2
Monosaccharide and Disaccharide Metabolism	Theoretical	2
Pentose Phosphate Pathway and Nicotinamide Adenine Dinucleotide Phosphate	Theoretical	1
Glycosaminoglycans, Proteoglycans, and Glycoproteins	Theoretical	2
Qualitative carbohydrate analysis	Practical	2
Structure of lipids	Theoretical	2
Dietary Lipid Metabolism	Theoretical	1
Fatty Acid, Triacylglycerol, and Ketone Body Metabolism	Theoretical	4
Phospholipid, Glycosphingolipid, and Eicosanoid Metabolism	Theoretical	2
Cholesterol, Lipoprotein, and Steroid Metabolism	Theoretical	4
Amino Acids: Nitrogen Disposal	Theoretical	3
Amino Acids: Degradation and Synthesis	Theoretical	2
Amino Acids: Conversion to Specialized Products	Theoretical	2
Urine bilirubin and urobilinogen measurement	Practical	2
MEDICAL BIOLOGY		
Topic	**Type**	**Time**
Basic cell structure and multicellularity	Theoretical	2
Membrane structure	Theoretical	2
Membrane transport mechanisms	Theoretical	2
Cell skeleton	Theoretical	2
Structure of nucleus	Theoretical	2
Endoplasmic reticulum and Golgi apparatus	Theoretical	2
Protein modification and targeting	Theoretical	2
Vesicular traffic, secretion and endocytosis	Theoretical	2
Lysosomes and peroxisomes	Theoretical	2
Mitochondria and energy production	Theoretical	2

Intracellular signal transduction I	Theoretical	2
Intracellular signal transduction II	Theoretical	2
Cell division: Mitosis and meiosis	Theoretical	2
Control of cell proliferation and neoplasia	Theoretical	2
Cell death: Apoptosis and other mechanisms	Theoretical	2
Cell culture I	Practical	2
Cell culture I	Practical	2

INTRODUCTION TO TISSUE BIOLOGY AND LOCOMOTOR SYSTEM COMMITTEE

COURSES	THEORETICAL COURSE DURATION (h)	PRACTICAL COURSE DURATION (h)	TOTAL COURSE DURATION (h)
21010003-01 Introduction to Committee	1	0	1
21010003-02 Anatomy	16	12	28
21010003-03 Physiology	11	2	13
21010003-04 Histology and Embryology	14	8	22
21010003-05 Medical Biology	8	0	8
21010003-06 Medical Biochemistry	4	0	4
21010003-07 Medical Microbiology	21	6	27
TOTAL	**75**	**28**	**103**

AIMS AND LEARNING OBJECTIVES OF THE COMMITTEE

Aim:

At the end of this course board, Phase I students; they will learn basic information about the basic structure of the tissue and skeletal system, the concept of microbiology, microorganisms such as bacteria and viruses.

Learning Objectives:

1. Classifies microorganisms as disease agents, defines their general characteristics, has information about contamination and protection.
2. Explains the importance of the structural properties of fungi in the diagnosis and treatment of diseases.
3. Lists the structural features and replications of viruses.
4. Explains the importance of the structural features of parasites in the diagnosis and treatment of diseases they cause.
5. Defines tissues by classifying them.
6. Recognizes epithelium, connective, blood and lymph, cartilage and bone tissues at microscopic level, describes their structural features and the development of the skeletal system.
7. Defines the general composition and functions of blood.
8. Defines anatomy, anatomical terms and anatomical posture.
9. Have the ability to use tools and materials such as atlas, models, bones and cadavers to be used in theoretical and practical lessons.
10. Gains knowledge about the naming and structure of the bones that make up the human body, describe joint types and joint movements.

11. Defines cell connections, cell adhesion and intercellular matrix.
12. Explains the importance of the connections that cells establish with other cells and extracellular matrix in terms of tissue formation.
13. Explains the role of the extracellular matrix in terms of cell survival, differentiation, tissue formation and functions.
14. Explains the function of stem cells in the normal functioning of tissues by specifying their properties.

TOPICS

ANATOMY		
Topic	**Type**	**Time**
Introduction to anatomy, the place of anatomy in medical education, its aims and objectives, terms of body regions, body lines, planes, movements, and directions	Theoretical	2
Osteology (osteology; bone science) and chondrologia (chondrology; cartilage science): general information	Theoretical	2
Pectoral arch bones and upper extremity bones and clinic anatomy	Theoretical	2
Pectoral arch bones and upper extremity bones	Practical	2
Bones of lower extremity and the pelvis	Theoretical	2
Vertebral column, costae and sternum	Theoretical	2
Bones of lower extremity and the pelvis	Practical	2
Vertebral column, costae and sternum	Practical	2
Cranium: Neurocranium	Theoretical	2
Cranium: Viscerocranium	Theoretical	2
Cranium: Neurocranium	Practical	2
Cranium: Viscerocranium	Practical	2
The skull	Theoretical	2
The skull	Practical	2
PHYSIOLOGY		
Topic	**Type**	**Time**
Hematopoiesis	Theoretical	1
Chemical characteristics of blood	Theoretical	2
Erythrocyte physiology	Theoretical	2
Platelet physiology and coagulation	Theoretical	2
Leukocyte physiology and immune system	Theoretical	2
Blood groups	Theoretical	2
Blood experiments	Practical	2
HISTOLOGY AND EMBRIOLOGY		
Topic	**Type**	**Time**
Introduction to tissues	Theoretical	2

Epithelial tissue - lining epithelium	Theoretical	2
Practice: Histology of epithelial tissue - lining epithelium	Practical	2
Histology of epithelial tissue - glandular epithelium	Theoretical	2
Practice: Histology of epithelial tissue - glandular epithelium	Practical	2
Histology of connective tissue	Theoretical	2
Connective tissue types and adipose tissue histology	Theoretical	2
Histology of connective tissue	Practical	2
Blood production and stem cells	Theoretical	2
Peripheral blood cells	Theoretical	2
Peripheral blood histology	Practical	2
MEDICAL BIOCHEMISTRY		
Topic	**Type**	**Time**
Erythrocyte biochemistry	Theoretical	2
Coagulation biochemistry	Theoretical	2
MEDICAL BIOLOGY		
Topic	**Type**	**Time**
Growth factors and their functions	Theoretical	2
Stem cells and their differentiation	Theoretical	2
Structure of extracellular matrix	Theoretical	2
Cell adhesion	Theoretical	2
MEDICAL MICROBIOLOGY		
Topic	**Type**	**Time**
Introduction to microbiology and classification of infectious agents	Theoretical	2
Structure and general characteristics of bacteria	Theoretical	2
Structure of Rickettsia, Mycoplasma, Chlamydia and spiral bacteria	Theoretical	1
Microbiology practice: working principles and basic microbiology knowledge in the laboratory	Practical	2
Bacterial metabolism and proliferation of bacteria	Theoretical	2
Microbiology practice: bacteriological staining techniques	Practical	2
Bacterial genetics	Theoretical	2
Microbiology practice: bacterial metabolism and proliferation of bacteria	Practical	2
Introduction to mycology: classification and general characteristics of fungi	Theoretical	2
Introduction to virology: classification and general characteristics of viruses	Theoretical	2
Introduction to parasitology: classification and general characteristics of parasites	Theoretical	2
Introduction to antibiotics: mechanisms of action and resistance	Theoretical	2
Sterilization and Disinfection	Theoretical	2
Laboratory Diagnosis of Infectious Diseases	Theoretical	2

LOCOMOTOR SYSTEM – 1 COMMITTEE

COURSES	THEORETICAL COURSE DURATION (h)	PRACTICAL COURSE DURATION (h)	TOTAL COURSE DURATION (h)
21010004-01 Introduction to Committee	1	0	1
21010004-02 Anatomy	18	10	28
21010004-03 Physiology	8	0	8
21010004-04 Histology and Embryology	14	10	24
21010004-05 Medical History and Ethics	10	0	10
TOTAL	**51**	**20**	**71**

AIMS AND LEARNING OBJECTIVES OF THE COMMITTEE

Aim:

The aim of this course committee is to provide phase I students to learn the basic structures of the locomotor system in general terms and to have anatomical, histological, embryological and physiological knowledge about the working principles. In addition to these, it is also to provide an understanding of Medical History

Learning Objectives:

1. Recognize joint and muscle tissues at the microscopic level, describe the structural features and development of muscle tissue.
2. Understands the types of joints and muscles in the upper extremity, explains the parts of the upper extremity muscles and their relationship with the joint.
3. Explains the anatomical nomenclature and functions of bones and joints in the skeleton.
4. Explains the anatomical structure of the upper extremity muscles.
5. Explain the organization of the nervous system and the physiology of nerve conduction.
6. Explain neurotransmitter substances and physiological properties of autonomic nervous system.
7. Describes the histologic structure of bone, joint and muscle tissue.
8. Explain the histologic features of nerve tissue and skin.
9. Explains the history of medicine and medicine in ancient civilizations.
10. Describes medical practices in Ancient Anatolian Civilizations and Roman Period respectively. Explains the medical science in Seljuk Period and Islam.

TOPICS

ANATOMY		
Topic	**Type**	**Time**
Arthrologia (joint science): general information	Theoretical	2
Upper extremity joints	Theoretical	2
Lower extremity joints and arches of the feet	Theoretical	2
Vertebral, craniovertebral, costal, sternal joints and temporomandibular joint	Theoretical	2
Upper and lower extremity joints, arches of the feet	Practical	2
Vertebral, craniovertebral, costal, sternal joints and temporomandibular joint	Practical	2
Myologia (muscle science): general information	Theoretical	1
Back and neck muscles, trigonum suboccipitale, shoulder and posterior arm region, humerotricipital and scapulotricipital spaces	Theoretical	2
Back and neck muscles, trigonum suboccipitale, shoulder and posterior arm region, humerotricipital and scapulotricipital spaces	Practical	2
Pectoral region, anterior arm muscles, trigonum deltopectorale (clavipectorale)	Theoretical	1
Axilla, plexus brachialis, arteria-vena axillaris and axillary lymph nodes	Theoretical	2
Forearm muscles and neurovascular structures, fossa cubitalis, fovea radialis and carpal tunnel	Theoretical	2
Hand muscles and neurovascular structures	Theoretical	2
Pectoral region and breast, anterior arm muscles, trigonum deltopectorale, axilla, plexus brachialis and arteria-vena axillaris	Practical	2
Forearm muscles and hand muscles, fossa cubitalis, fovea radialis, carpal tunnel and neurovascular structures	Practical	2
PHYSIOLOGY		
Topic	**Type**	**Time**
Organization of the nervous system	Theoretical	1
Synaptic transmission and action potential development	Theoretical	2
neurotransmitter substances	Theoretical	2
Physiological features of the autonomic nervous system	Theoretical	3
HISTOLOGY AND EMBRIOLOGY		
Topic	**Type**	**Time**
Histology of cartilage tissue	Theoretical	2
Histology of cartilage tissue	Practical	2
Histology of bone tissue and osteogenesis	Theoretical	3
Histology of bone tissue	Practical	2
Histology of muscle tissue	Theoretical	2
Histology of muscle tissue	Practical	2

Histology of nerve tissue	Theoretical	3
Histology of nerve tissue	Practical	2
Skin, appendages and nerve endings	Theoretical	4
Histology of skin	Practical	2
MEDICAL HISTORY		
Topic	**Type**	**Time**
Introduction to the History of Medicine	Theoretical	1
Medicine in Antiquity	Theoretical	2
Medicine in Mesopotamia	Theoretical	1
Medical Practices in Ancient Anatolian Civilizations	Theoretical	1
Medical Practices in Ancient Rome	Theoretical	1
Medicine in the Seljuk and Ottoman Empires	Theoretical	2
Medicine in Islam	Theoretical	2

LOCOMOTOR SYSTEM – 2 AND SKIN COMMITTEE

COURSES	THEORETICAL COURSE DURATION (h)	PRACTICAL COURSE DURATION (h)	TOTAL COURSE DURATION (h)
21010005-01 Introduction to Committee	1	0	1
21010005-02 Anatomy	15	9	24
21010005-03 Biophysics	4	0	4
21010005-04 Physiology	6	2	8
21010005-05 Histology and Embryology	24	0	24
21010005-06 Medical History and Ethics	9	0	9
TOTAL	**59**	**11**	**70**

AIMS AND LEARNING OBJECTIVES OF THE COMMITTEE

Aim:

The aim of this course board is to ensure that Phase I students have anatomical, histological, physiological and biophysical knowledge about the dynamics of the locomotor system and the principles of general study.

Learning Objectives:

1. Recognizes muscle and nerve tissues at microscopic level, describes their structural features and development of muscle tissue.
2. Comprehends the types of muscles in the body, explains the parts of the skeletal muscle and the nerves that stimulate the muscles with their relationship with the bone.
3. Explains the anatomical nomenclature and functions of skeletal muscles.
4. Describes the histological structure and development of the skin.
5. Describes events that may occur because of nerve damage.
6. Explains neuromuscular junction, muscle types and contraction mechanisms.
7. Describes excitable tissues and arousal steps.
8. Discusses the importance of embryology and its place among other disciplines.
9. Describes the events that take place from the formation of the zygote to the end of embryogenesis of the germ cells.
10. Knows fetal period features, placenta; describes multiple pregnancies, developmental anomalies and teratogens.

TOPICS

ANATOMY		
Topic	**Type**	**Time**
Gluteal region and ischial openings, intramuscular injection sites	Theoretical	2
Back and outer thigh muscles and neurovascular structures, fossa poplitea and plexus sacralis	Theoretical	2
Gluteal region and intramuscular injection sites, posterior and outer thigh muscles, neurovascular structures, fossa poplitea and plexus sacralis	Practical	2
Anterior and inner thigh muscles and neurovascular structures, trigonum femorale, canalis adductorius, plexus lumbalis	Theoretical	2
Anterior and inner thigh muscles and neurovascular structures, trigonum femorale, canalis adductorius, plexus lumbalis	Practical	2
Anterior and external leg muscles and neurovascular structures	Theoretical	1
Posterior leg muscles, neurovascular structures and tarsal tunnel	Theoretical	1
Leg muscles and neurovascular structures, tarsal tunnel	Practical	2
Foot muscles and neurovascular structures	Theoretical	2
Facial anatomy: muscles and neurovascular structures	Theoretical	2
Foot muscles and neurovascular structures	Practical	1
Anterior and lateral neck regions, neck fascia, neck triangles, plexus cervicalis	Theoretical	3
Facial anatomy: muscles and neurovascular structures, anterior and lateral neck regions, neck triangles, plexus cervicalis	Practical	2
BIOPHYSICS		
Topic	**Type**	**Time**
The general properties of biological materials, solids and fluids	Theoretical	2
The concepts of biomechanics	Theoretical	2
PHYSIOLOGY		
Topic	**Type**	**Time**
Physical characteristics of muscle cells	Theoretical	2
Skeletal muscle physiology	Theoretical	2
Smooth muscle physiology	Theoretical	2
EMG (Electromyography) measurement	Practical	2
HISTOLOGY and EMBRYOLOGY		
Topic	**Type**	**Time**
Introduction to embryology	Theoretical	1
Cell cycle, gametogenesis and apoptosis	Theoretical	3
Menstrual cycle and ovulation	Theoretical	2

Beginning of human development: week 1	Theoretical	2
Formation of bilaminar embryonic disc and chorionic sac: 2nd week	Theoretical	2
Formation of germ layers: 3rd week	Theoretical	2
Organogenesis period: 4-8. week	Theoretical	2
Fetal period	Theoretical	2
Placenta and fetal membranes, multiple pregnancies	Theoretical	3
Human birth defects – teratogens	Theoretical	2
The development of the skeletal system and muscle tissue	Theoretical	3
MEDICAL HISTORY and ETHICS		
Topic	**Type**	**Time**
Hippocratic Oath	Theoretical	1
Medicine in The Renaissance	Theoretical	2
History and Basic Features of Medical Education in Turkey	Theoretical	2
The Relationship Between Science and Philosophy	Theoretical	2
Empirical Method and Methodology of Science	Theoretical	2

SCIENTIFIC AND CLINICAL APPROACHES COMMITTEE

COURSES	THEORETICAL COURSE DURATION (h)	PRACTICAL COURSE DURATION (h)	TOTAL COURSE DURATION (h)
21010006-01 Preparation for Scientific Knowledge	9	5	14
21010006-02 Clinical Overview I	25	2	27
21010006-03 Clinical Skill I	0	8	8
TOTAL	**35**	**15**	**49**

AIMS AND LEARNING OBJECTIVES OF THE COMMITTEE

Aim:

At the end of this committee, the students will learn basic professional skills on models in accordance with ethical principles; they will learn about the reflection of the basic information they have learned in the clinic and the ways in which they can access scientific information.

Learning Objectives:

1. Applies the basic professional skill techniques required in clinical practice.
2. Gains the hand washing skill.
3. Gains the ability to put on and take off protective equipment.
4. Counts respiration and pulse rate.
5. Gains the skill of intramuscular and subcutaneous injection.
6. Performs basic life support and Heimlich maneuver.
7. Understands and interprets techniques using molecular biology and genetic mechanisms.
8. Interprets basic knowledge of locomotor system clinically.
9. Defines the sources of accessing information.
10. Explains plagiarism and programs used to prevent plagiarism.
11. Counts article scanning methods.
12. Explains the importance of being scientific in medicine.

TOPICS

PREPARING FOR SCIENTIFIC INFORMATION		
Topic	**Type**	**Time**
Information technologies	Practical	5
What is Knowledge?	Theoretical	1
Classification of Science	Theoretical	1
Classification of Medical Research	Theoretical	1
What is Plagiarism? Methods Used to Prevent Plagiarism	Theoretical	1
Programs Used to Prevent Plagiarism	Theoretical	1
Medical Article Searching at TR index	Theoretical	1
Article Searching Methods	Theoretical	1
Types of Information Resources	Theoretical	1
Academic Journals and International Indexes	Theoretical	1
CLINICAL OVERVIEW		
Topic	**Type**	**Time**
Molecular diagnostic technics	Theoretical	1
Biotechnologie	Theoretical	1
Structure of chromosome	Theoretical	2
Chromosome types and karyotype analysis	Theoretical	1
Human chromosomes and karyotype analysis	Practical	2
Sex chromosomes and examples of chromosomal aberrations	Theoretical	1
Organization of human genome and genomic variations	Theoretical	1
Progress in genome science	Theoretical	1
Novel approaches in personal medicine and the use of genomic technics in medicine	Theoretical	1
Biotechnological applications in medicine	Theoretical	1
Blood transfusion and tissue transplantation	Theoretical	1
Clinical anatomy of upper extremity bones and pectoral girdle bones	Theoretical	1
Clinical anatomy of the bones of lower extremity and the pelvis	Theoretical	1
Clinical anatomy of the vertebral column, ribs and sternum	Theoretical	1
Clinical anatomy of the cranium	Theoretical	1
Clinical anatomy of the joints of upper extremity	Theoretical	1
Clinical anatomy of the joints of lower extremity	Theoretical	1
Clinical anatomy of the vertebral, craniovertebral, costal, sternal and temporomandibular joints	Theoretical	1
Clinical anatomy of the back muscles and muscles of the upper extremity	Theoretical	1
Clinical anatomy of brachial plexus	Theoretical	2
Lesions of the lumbar plexus and sacral plexus	Theoretical	2

Clinical anatomy of the muscles of lower extremity	Theoretical	1
Clinical anatomy of the head and neck regions	Theoretical	1
CLINICAL SKILL		
Topic	**Type**	**Time**
Hand washing skill	Practical	2
Ability to wear protective equipment (apron, mask, goggles/face shield, gloves)	Practical	2
Ability to count breathing and pulse rate	Practical	2
Basic life support and ability to perform the Heimlich maneuver	Practical	2