

COURSE INFORMATION					
Course Title	Code	Phase/Semester	L+P Hour	Credits	ECTS
Basic Medical Sciences	MED 104	1/1-2	490+55	40	40*

\*ECTS credits are the university credits of the courses in Yeditepe University, Faculty of Medicine, Undergraduate Medical Education Program

<b>Prerequisites</b>	Fullfilled the admission requirements for the program
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<b>Language of Instruction</b>	English
<b>Course Level</b>	Second Cycle including First Cycle Degree (One Tier Programme)
<b>Course Type</b>	Compulsory
<b>Course Coordinators</b>	<p><b>PHASE COORDINATION COMMITTEE</b></p> <p>Elif Çiğdem KELEŞ, Ph.D, Assist. Prof. (Coordinator)  Aylin YABA UÇAR, Ph.D, Assoc. Prof. (Co-coordinator)  Bilge GÜVENÇ TUNA Ph.D, Assoc. Prof. (Co-coordinator)  Seda Güleç YILMAZ, Ph.D, Assoc. Prof. (Co-coordinator)  Aikaterini PANTELI, MD, Assist. Prof. (Co-coordinator)  Cenk ANDAÇ, Ph.D. Assist Prof. (Co-coordinator)</p> <p><b>PBL COORDINATION COMMITTEE</b></p> <p>Serdar ÖZDEMİR, MD, PhD, Assist. Prof. (Coordinator)  Güldal İzbirak, MD. Prof (Co-Coordinator)  Deniz KIRAÇ, PhD, Assoc. Prof. (Co-Coordinator)</p>

<b>Goals</b>	<p><b>In evidence based manner,;</b></p> <p>1. <i>To convey basic knowledge on medical history, organic chemistry, biology, biophysics, biochemistry, biostatistics, anatomy, physiology, embryology, histology, microbiology, immunology, behavioral sciences, civilization history and medical ethics.</i></p>																																																																																																																																																																																																																																																						
<b>Content</b>	<p><b>Course Components:</b></p> <p>COMMITTEE I Basic Medical Sciences (7 weeks) COMMITTEE II Cell (8 weeks)  COMMITTEE III Tissue I (6 weeks) COMMITTEE IV Tissue II (8 weeks)  COMMITTEE V Energy and Metabolism (6 weeks)</p> <p style="text-align: center;"><b><u>CONTENT of COURSE</u></b></p> <p><b>Anatomy Department (total 76+26)</b></p> <table border="1" data-bbox="483 645 1457 2056"> <thead> <tr> <th rowspan="2">Topics</th> <th colspan="2">Hour</th> <th rowspan="2">Committee</th> </tr> <tr> <th>Theoretical</th> <th>Practical</th> </tr> </thead> <tbody> <tr><td>Introduction to Anatomy</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Terminology in Anatomy</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Introduction to Osteology</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Bones of the Shoulder</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Bones of the Upper Limb</td><td>2</td><td>0</td><td>1</td></tr> <tr><td>Bones of the Shoulder and Upper Limb</td><td>0</td><td>1</td><td>1</td></tr> <tr><td>Bones of the Pelvis</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Bones of the Lower Limb</td><td>2</td><td>0</td><td>1</td></tr> <tr><td>Bones of the Pelvis &amp; Lower Limb</td><td>0</td><td>1</td><td>1</td></tr> <tr><td>Vertebral column, ribs and sternum</td><td>2</td><td>1</td><td>2</td></tr> <tr><td>Neurocranium</td><td>3</td><td>1</td><td>2</td></tr> <tr><td>Viscerocranium</td><td>3</td><td>1</td><td>2</td></tr> <tr><td>Introduction to Arthrology</td><td>2</td><td>0</td><td>3</td></tr> <tr><td>Joints of the Upper Limb</td><td>3</td><td>1</td><td>3</td></tr> <tr><td>Joints of the Lower Limb</td><td>3</td><td>1</td><td>3</td></tr> <tr><td>Joints of the Vertebral Column</td><td>1</td><td>0</td><td>3</td></tr> <tr><td>Joints of the Axial Skeleton</td><td>1</td><td>0</td><td>3</td></tr> <tr><td>Joints of the Vertebral Column and Axial Skeleton</td><td>0</td><td>1</td><td>3</td></tr> <tr><td>Joints of the Cranium and Fontanelles</td><td>2</td><td>1</td><td>3</td></tr> <tr><td>Introduction to Myology</td><td>2</td><td>0</td><td>3</td></tr> <tr><td>Muscles of the Back</td><td>1</td><td>0</td><td>3</td></tr> <tr><td>Muscles of the Back and Nape</td><td>1</td><td>1</td><td>3</td></tr> <tr><td>Introduction to Peripheral Nervous System</td><td>1</td><td>0</td><td>3</td></tr> <tr><td>Spinal Nerves</td><td>1</td><td>0</td><td>3</td></tr> <tr><td>Muscles of the Shoulder Girdle</td><td>1</td><td>0</td><td>4</td></tr> <tr><td>Muscles of the Shoulder Girdle and Axilla</td><td>1</td><td>1</td><td>4</td></tr> <tr><td>Muscles of the Arm</td><td>2</td><td>1</td><td>4</td></tr> <tr><td>Muscles of the Forearm</td><td>2</td><td>1</td><td>4</td></tr> <tr><td>Muscles of the Hand</td><td>2</td><td>1</td><td>4</td></tr> <tr><td>Brachial Plexus</td><td>2</td><td>0</td><td>4</td></tr> <tr><td>Nerves of the Upper Limb</td><td>1</td><td>0</td><td>4</td></tr> <tr><td>Vasculature of the Upper 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Fontanelles	2	1	3	Introduction to Myology	2	0	3	Muscles of the Back	1	0	3	Muscles of the Back and Nape	1	1	3	Introduction to Peripheral Nervous System	1	0	3	Spinal Nerves	1	0	3	Muscles of the Shoulder Girdle	1	0	4	Muscles of the Shoulder Girdle and Axilla	1	1	4	Muscles of the Arm	2	1	4	Muscles of the Forearm	2	1	4	Muscles of the Hand	2	1	4	Brachial Plexus	2	0	4	Nerves of the Upper Limb	1	0	4	Vasculature of the Upper Limb	1	0	4	Brachial Plexus, Nerves and Vasculature of the Upper Limb	0	1	4	Cervical Muscles and Triangles	1	1	4	Cervical Muscles	1	0	4	Muscles of the Head and Scalp	2	1	4	Cervical Plexus	1	0	4	Nerves and Vasculature of the Neck	1	0	4	Cervical Plexus, Nerves and Vasculature of the Neck	0	1	4	Nerves of the Head	1	0	4	Vasculature of the Head	1	0	4	Nerves and Vasculature of the Head	0	1	4	Muscles of the Thoracic Wall	1	0	4	Muscles of the Abdominal Wall	1	0	4	Muscles of the Abdominal Wall and Inguinal Canal	1	0	4	Muscles of the Thoracic and Abdominal Wall	0	1	4	Nerves and 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**Biophysics Department (total 46 h)**

Topics	Hour		Committee
	Theoretical	Practical	
Introduction to Biophysics: Medicine, Science or Art	1	0	1
Physical Measurements and Units, Unit standards	1	0	1
Statics (Mass and Weight), Gravitation Law	1	0	1
Newton's Laws of Motion	1	0	1
Center of Mass, Moment	1	0	1
Nature of Light, electromagnetic spectrum	1	0	1
Reflection and Refraction of Light	1	0	1
Bio-optics: Vision and Eye, Refraction errors	1	0	1
Lenses; Lens-maker Equation	1	0	1
Optical Properties of Microscopes	2	0	1
Optical Aberrations	1	0	1
Electric Charges, Electric Field	1	0	1
Membrane Impedance, Bioelectrical Activity	1	0	1
Electric Current Effects on Human Tissue	1	0	1
Electrical Security Systems	1	0	1
Radiation Biophysics: Nucleus and Radioactivity	1	0	2
Nuclear stability	1	0	2
Interaction of radiation with matter: Particle type ( $\alpha$ , $\beta$ particles)	1	0	2
Interaction of X or gamma rays with matter	1	0	2
Photoelectric Action, Compton Action	1	0	2
Half Value Layer, Attenuation	1	0	2
Units of Radioactivity	1	0	2
Radioisotopes in Medicine	1	0	2
Biological mechanisms of Radiation	1	0	2
Radiation Protection (Safety)	1	0	2
Medical Imaging: Applications of X-ray attenuation & detection	1	0	2
Medical Imaging: Nuclear Medicine	1	0	2
Lasers in Medicine	2	0	2
Asymmetric Distribution & Transport of Ions	2	0	3
Resting Membrane Potential: Ionic Balance	1	0	3
Nernst and Goldman Equations	1	0	3
Action potential: Rheobase and Chronaxie	1	0	3
Biophysical Modeling of Membrane & Ion Channels	1	0	3
Impulse Propagation	1	0	3
Contractile Machinery; Sliding Filament Theory	1	0	3
Muscle Mechanic; Mechanical Powers of Cardiac and Skeletal Muscle	1	0	3
Biophysics of Smooth Muscle Contraction	1	0	3
Digital recording of biomedical signals	2	0	4
Mechanical Properties of Biomaterials	1	0	4
Stress-Strain, Stiffness	1	0	4
Elasticity	1	0	4
Shear Stress, Poisson's Law	1	0	4

**Biostatistics Department (total 24+2)**

Topics	Hour		Committee
	Theoretical	Practical	
Main Concepts in Biostatistics	2	0	4
Frequency Distributions	2	0	4
Graphics	1	0	4
Central Tendency measurements	3	0	4
Central Dispersion measurements	2	0	4
Rates and Ratios	1	0	4
Standardization of Disease Rates	1	0	4
Probability	2	0	5
Theoretical Distributions	4	0	5
Diagnostic Testing	1	0	5
The Description of Epidemiology	1	0	5
Epidemiological Research Methods and Calculation of the Risk	3	0	5
Sampling in Epidemiology	1	0	5
Basic Statistical Calculations on Excel	0	2	2

**Biochemistry Department (total 54+4)**

Topics	Hour		Committee
	Theoretical	Practical	
Glycerophospholipids, Sphingophospholipids	2	0	4
Classification of Carbohydrates, General Features of Carbohydrates	1	0	4
Monosaccharide Derivatives, Disaccharides, Polysaccharides, Starch, Glycogen	1	0	4
Glycosaminoglycans, Structures and Functions	1	0	4
Monosaccharide Derivatives, Disaccharides, Polysaccharides, Starch, Glycogen	1	0	4
Classification of Lipids, General Features of Lipids	2	0	4
Saturated and Unsaturated Fatty Acids, Essential Fatty Acids	2	0	4
Eicosanoids	2	0	4
Isoprene Derivatives, Steroids, Bile Acids	2	0	4
Amino Acids, General Features, Classification	2	0	4
Primary, Secondary, Tertiary, Quaternary Structures of Proteins	2	0	4
Triacylglycerols	2	0	4
Glycoproteins, Collagen, $\alpha$ keratin	2	0	4
Nucleotides	2	0	4
Enzymes, Kinetics, Regulatory Enzymes	2	0	4

ATP Production, Substrate Level Phosphorylation, Oxidative Phosphorylation	1	0	4
Oxidative Decarboxylation	1	0	4
International Enzyme Commission Classification of Enzymes	2	0	4
ATP Production, Substrate Level Phosphorylation, Oxidative Phosphorylation	2	0	4
Spectrophotometry	0	2	4
Transport Through Biological Membranes	4	0	5
Glycogenesis	2	0	5
Digestion and Absorption of Carbohydrates	3	0	5
Glycogenolysis	2	0	5
Gluconeogenesis	2	0	5
Glycolysis	1	0	5
Regulation of Glycogenesis and Glycogenolysis	2	0	5
Fibrinolysis, Fibrinolytic and Antifibrinolytic Agents	2	0	5
Pentose phosphate pathway	2	0	5
Secondary Hemostasis, Procoagulation, Anticoagulation	2	0	5
Glucose Determination in Blood, Occult Blood in Feces, Bleeding Time	0	2	5

**Behavioral Science (total 24h)**

Topics	Hour		Committee
	Theoretical	Practical	
Life Cycle: Pregnancy through Preschool	1	0	4
Life Cycle; School Age, Adolescence and Adulthood	1	0	4
The Biological Bases of Behavior	2	0	4
Life Cycle; Aging, Death and Bereavement	2	0	4
Sleep and Sleep Disorders	1	0	4
Substance Related Disorders	1	0	4
Psychoanalytic Theory and Defense Mechanism	2	0	4
Learning Theory	1	0	4
Perception	2	0	4
Emotions	1	0	4
Culture and Illness	2	0	5
Human Sexuality	1	0	5
Violence and Abuse	1	0	5
The Physician-Patient Relationship	2	0	5
Legal and Ethical Issues in Medicine	2	0	5
Introduction to Psychopathology	2	0	5

**Physiology Department (total 16+5h)**

Topics	Hour		Committee
	Theoretical	Practical	
Introduction to Physiology and Homeostasis	2		1
Distribution of Substances in Body Fluids	1		2
Cell Membrane	1		2
Transport of Substances Through the Cell Membrane	2		2
Osmotic Pressure and Permeability of The Cell Membrane	1		2
Transport of Substances Through the Cell Membrane	1		2
Osmosis & Diffusion Laboratory		1	2
Membrane Potentials and Action Potentials	2		3
Neuromuscular Transmission	1		3
Skeletal Muscle Physiology	1		3
EMG I Laboratory		1	3
EMG II Laboratory		1	3
Smooth Muscle Physiology	2		3
Physiology of Cardiac Muscle	2		3
Smooth Muscle Contractility Laboratory		1	3
Cardiac Muscle with PhysioEx Laboratory		1	3

**Histology Department (total 51+10h)**

Topics	Hour		Committee
	Theoretical	Practical	
Introduction to Histology; Basic Terminology	1		1
Microscopy (Brightfield, Fluorescent, Confocal)	1		1
Electronmicroscopy	1		1
Other Histologic Methods	1		
Methods of Histology; Tissue Processing	1		1
Methods of Histology; Immunohistochemistry	1		1
LAB: Microscopy		1	1
Cell; General Specification	1		2
Cell Membrane Structure & Function	1		2
Cell Organelles: Membranous and Nonmembranous Organelles	1		2
Cytoskeleton	1		2
Cell Nucleus, Cell Cycle and Cell Death	1		2
Mitosis & Meiosis	1		2
Introduction to Embryology and Human Developmental Period	1		2
Gametogenesis; Spermatogenesis	1		2
Gametogenesis; Oogenesis and Folliculogenesis	1		2
Ovarian and Uterinal Cycle	1		2
First Week of Development: Fertilization	1		2
First Week of Development: Cleavage and Formation of Blastocyst	1		2
Second Week of Development: Implantation and Bilaminar Germ Disc Formation	1		2

Third Week of Development:Gastrulation; Primitive Streak, Notochord Formation	1		2
LAB: Developing Human-I	0	2	2
Histology of Covering Epithelium; Structure, Classification	1		3
Histology of Covering Epithelium; Surface Specification	1		3
Histology of Glandular Epithelium	1		3
LAB: Histology of Epithel Tissue (Simple Sq & Cubic Ep-Kidney, Simple Columnar Ep-Colon, Stratified Sq Ep.-Esophagus, Transitional Ep Bladder)	0	1	3
Histology of Muscle Tissue; General Specification	1		3
Histology of Striated Skeletal Muscle	1		3
Histology of Heart & Smooth Muscle	1		3
Development of the Muscular System	1		3
LAB: Histology of Muscle Tissue (Pseudostratified Ep-Duc. Efferentes, Striated Muscle-Tongue, Smooth Muscle- Intestine, Cardiac Muscle-Heart)	0	1	3
Histology of Connective Tissue; Extracellular Matrix	1		3
Histology of Connective Tissue; Cells	1		3
Histology of Connective Tissue Proper; Types	1		3
Blood; RBC and Platelets	1		3
Blood WBC, Blood Smear	1		3
Haemopoiesis	1		3
LAB:Histology of Connective Tissue and RBC	0	1	3
Histology of Adipose Tissue	1		4
Histology of Cartilage Tissue	1		4
Histology of Bone Tissue; Microscopic Structure	1		4
Histology of Bone Tissue; Ossification	1		4
Development of Bone Tissue	1		4
LAB: Histology of Cartilage Tissue and Bone Tissue (Loose Areolar, Dense Irregular CT-Skin; Dense Regular CT-Tendon, Hyalin Cartilage-Trachea, Fibrous Cartilage-Vertebral Disc)	0	1	4
Development of the Axial Skeleton and Limb	1		4
Histology of Nervous Tissue; General Specification	1		4
Histology of Nervous Tissue; Neuron Types	1		4
Histology of Nervous Tissue; Glia Types	1		4
LAB: Histology of. Nerve Tissue (Spongy Bone, Endochondral Ossification, Pukinje Neuron-Cerebellum, Alpha Motor Neuron-Spinal Cord)	0	2	4
Third to Eight Weeks: Embryonic Period (Somitogenesis; Mesoderm Orgnization)	1		5
Third to Eight Weeks: Embryonic Period (Neurulation; Neuroectoderm Organization, Angiogenesis)	1		5
Foldings and Body Cavities	1		5
Third Month to Birth:Organogenesis & Fetal Periods	1		5
Extraembryonic Structures: Placenta, Chorion, Amnion	1		5
LAB: Developing Human II	0	1	5
Twin and Parturition	1		5
Infertility and Contraception	1		5
Asissted Reproductive Technology	1		5
Congenital Anomalies and Teratology	1		5

**Immunology Department (total 12)**

Topics	Hour		Committee
	Theoretical	Practical	
What is Immunology?	4	-	3
Cells and Tissues of Immune System			
Innate Immunity	4	-	4
Adaptive Immunity			
Signal Transduction in Immunity	4	-	5
Cytokines and Immune Markers			

**Microbiology Department (total 12)**

Topics	Hour		Committee
	Theoretical	Practical	
Introduction to Basic Microbiology and Applications	1	0	2
Bacterial Metabolism	1	0	2
Bacterial Genetics	1		2
Classification and General Structures of Bacteria	2	0	2
Classification and General Structures of Fungi	2	0	2
Classification and General Structures of Parasites	2	0	2
Classification and General Structures of Viruses	2	0	2
Sterilization and Disinfection	1	0	2

**Organic Chemistry Department (total 18 h)**

Topics	Hour		Committee
	Theoretical	Practical	
Acids & Bases	2	0	1
Alkenes	4	0	1
Benzene & Aromaticity	2	0	1
Alcohols and Ethers	2	0	2
Carbonyl compounds	2	0	2
Carboxylic acids and nitriles	2	0	2
Amines	2	0	2
Steroids	2	0	2

**Medical Biology Department (total 84 h + 6 h)**

Topics	Hour		Committee
	Theoretical	Practical	
Introduction to Medical Biology	1	0	1
Origin of Life	2	0	1
Cellular Organization of Life	5	0	1
Cytoskeleton	4	0	1
Cell Adhesion	3	0	1
Cell Signalling Events	3	0	1
Intercellular Cell Signalling	4	0	1
Programmed Cell Death	4	0	1
Cell Membrane	3	0	1
Biological Energy Systems Enzymes and Kinetics	2	0	1
Cellular Homeostasis and Cell Growth	2	0	1
Cell Cycle and Mitosis-Meiosis (Introduction to Cellular Homeostasis)	2	0	1
Cell Regulation	2	0	1
The Preparation of Aqueous Solution	0	1	1
Cell Cycle and Mitosis- Meiosis	2	0	2
Deoxyribonucleic Acid and Ribonucleic Acid	3	0	2
Deoxyribonucleic Acid and Ribonucleic Acid (Central Dogma)	2	0	2
Protein Synthesis and Turnover	3	0	2
Biosynthesis of Nucleotides	1	0	2
Regulation of Gene Expression	2	0	2
Genomics, Proteomics and Metabolomics	2	0	2
Chromosome Structure and Function, Plasmids, Transposable Genetic Elements	2	0	2
Chromosome Structure and Function, Plasmids, Transposable Genetic Elements	2	0	2
Tools in Medical Biology	2	0	2
DNA Damage and Repair Mechanism	2	0	2
Mutation and Polymorphism	2	0	2
Mendelian Laws and Inheritance	4	0	2
Cell and Gene Therapy	2	0	2
Biological Aspects of Development	2	0	2
Mitosis and Meiosis	0	1	2
Nucleic Acid Purification	0	1	2
Epigenetics (Population Genetics)	0	1	2
Gen Identification in Cancer	0	1	2
Extracellular Matrix	5	0	4
Biology of Oxidative Stress	2	0	4
Oxidative Stress and Antioxidant System	0	1	4
Genome of Mitochondria	3	0	5
Biology of Energy and Energy Balance	2	0	5
Biology of Life Span	2	0	5

**Medical History and Ethics (total 20)**

Topics	Hour		Committee
	Theoretical	Practical	
Approaches to Medicine/ Medicine in Prehistoric Times	1	0	1
Medicine in Early Civilisations (Mesopotamia, Egypt)	1	0	1
Greek Medicine: From Mythology to Natural Philosophy	1	0	1
Hippocrates to Celsus	1	0	1
Galen	1	0	1
Indian and Chinese Medicine	1	0	1
Late Antiquity: Byzantine, Arab	1	0	1
Medicine in Abbasid Baghdad	1	0	1
The Time of Ibn Sina	1	0	1
Seljuk and Ottoman Medicine	1	0	1

Rise of the Hospitals	1	0	2
From Mahmud II's Mekteb-i Tibbiye to the University Reform 1933	1	0	2
The Demise of Humoral Theory	1	0	2
Medicalisation	1	0	2
Cells and Bacteria	1	0	2
Anaesthesia, Antisepsis	1	0	2
Genetic Medicine	1	0	3
History of our Future	1	0	3
Heyday and Crisis (20 th C.)	1	0	3
Antibiotics, Cancer Therapy	1	0	3
<b>SCIENTIFIC RESEARCH AND PROJECT I (total 4 h + small group studies 21 h)</b>	<b>Hour</b>		<b>Committee</b>
<b>Topics</b>	<b>Theoretical</b>	<b>Practical</b>	
What is Scientific Research and Scientific Methodology?	1		1
Searching Scientific Literature	1		1
Scientific Study Design and Types of Scientific Research	1		3
How to Prepare and Write a Scientific Project?	1		3
Small Group studies	3		1
Small Group studies	3		2
Small Group studies	3		3
Small Group studies	6		4
Small Group studies	6		5
<b>Problem Based Learning (PBL, total 28 h)</b>	<b>Hour</b>		<b>Committee</b>
	<b>Theoretical</b>	<b>Practical</b>	
	4		1
	6		2
	6		3
	6		4
	6		5

<b>Course Outcomes</b>	<b>Program Outcomes</b>	<b>Teaching Methods</b>	<b>Assessment Methods</b>
1.0. explain information about medical history, anatomy, physiology, embryology, histology, organic chemistry, biology, biophysics, biochemistry, biostatistics, microbiology, immunology, behavioral sciences, civilization history and medical ethics and elective courses.	1	1, 6	A
2.0.for biophysics; 2.1.explain basic terms and concepts.	1	1, 6	A
3.0.explain its essential application areas in medicine.	1	1, 6	A
3.0. explain the structure and function of the cell.	1	1, 6	A
4.0. describe the stages of early embryonic development	1	1, 6	A
5.0. define four basic tissue types with cells and extracellular matrix.	1	1, 6	A
6.0. define transportmechanism of biological membranes and its correlation with ATP usage	1	1, 6	A
7.0. list the enzymes in blood coagulation	1	1, 6	A
8.0. for enzymes; 8.1. list basic properties and classes of enzymes,	1	1, 6	A

8.2. describe regulatory functions of enzymes, 8.3. define the functions of enzymes in			
9.0.define the link between the structure and function of tissues	1	1, 6	A
10.0.define muscular, vascular and nervous system	1	1, 6	A
11.0.list basic properties and classes of microorganisms.	1	1, 6	A
12.0. describe basic terms and concepts about first aid.	1	1, 6	A
13.0. describe basic terms and concepts of communication skills	1	1, 6	A
14.0.describe basic terms and concepts about epidemiology.	1	1, 6	A
15.0. list fundamental steps of a research study.	1	1, 6	A
16.0. describe biostatistics. Basic terms of concepts of biostatistics	1	1, 6	A
17.0.explain case scenario related basic medical science topics in a clinical context	1	1,2, 6	A
18.0.define basic elements of immune response	1	1, 6	A
19.0.describe scientific study design and types of scientific research describe scientific study design and types of scientific research	1	1, 6	A



**Teaching/Learning  
Methods:**

● **CONTACT HOURS (CH)**

- 
1. Theoretical-Class/Auditorium/Conference Hall/Multimedia
    - 1.1. Lecture/Tutorial
    - 1.2. Case report
    - 1.3. Case presentation
    - 1.4. Research seminar
    - 1.5. Seminar
    - 1.6. Student seminar/Journal club
    - 1.7. Invited speaker
    - 1.8. Hospital conference
    - 1.9. Online/Distance or e-learning (paper based or ICT based)
    - 1.10. Other:
  2. Theoretical-Group Activity/Interactive
    - 2.1. Case discussion
    - 2.2. Discussion class
    - 2.3. Small group study session/Problem solving session/Brainstorm session
    - 2.4. Exercise class
    - 2.5. Oral presentation and criticism
    - 2.6. Panel
    - 2.7. Workshop
    - 2.8. Online/Distance or e-learning (paper based or ICT based)
    - 2.9. Other:
  3. Practice Based-Laboratory/Class
    - 3.1. Demonstration class
    - 3.3. Laboratory teaching Clinical skills laboratory
    - 3.4. Small group study session/Problem solving session
    - 3.5. Exercise class
    - 3.6. Workshop (practical class)
    - 3.7. Other:
    4. Clerkship (Clinical practice and training)
      - 4.1. Field study/Fieldwork
      - 4.2. Outpatient clinic
      - 4.3. Patient bedside
      - 4.4. Imaging round
      - 4.5. Laboratory round
      - 4.6. Work based practice
      - 4.7. Grand round
      - 4.8. Operating room
      - 4.9. Invasive Intervention room
      - 4.10. Night shift at ward
      - 4.11. Night shift at intensive care unit
      - 4.12. Night shift at emergency care unit
      - 4.13. Other:
    5. Work placement/Internship (Clinical performance under supervision)
      - 5.1. Field study/Fieldwork
      - 5.2. Outpatient clinic
      - 5.3. Patient bedside
      - 5.4. Imaging round
      - 5.5. Laboratory round
      - 5.6. Work based practice
      - 5.7. Grand round
      - 5.8. Operating room
      - 5.9. Invasive intervention room
      - 5.10. Night shift at ward
      - 5.11. Night shift at intensive care unit
      - 5.12. Night shift at emergency care unit
      - 5.13. Other:

**INDEPENDENT STUDY HOURS (ISH)**

6. KNOWLEDGE (Levels: Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation)
- 5.14. Theoretical/Written/Oral exam/s
  - 5.15. Presentation
  - 5.16. Seminar
  - 5.17. Discussion
  - 5.18. Session
  - 5.19. Research paper writing
  - 5.20. Project writing
  - 5.21. Report writing
  - 5.22. Dissertation writing
  - 5.23. Homework
  - 5.24. Investigation/Survey study
  - 5.25. Other:
6. SKILLS: (Levels: Imitation, Manipulation, Precision, Articulation, Naturalization)
- 6.1. Oral/practical exam/s
  - 6.2. Presentation
  - 6.3. Seminar
  - 6.4. Discussion
  - 6.5. Session

	<p>6.6. Exercise  6.7. Workshop  6.8. Imaging round  6.9. Laboratory round  6.10. Grand round  6.11. Other:  7. ATTITUDES (Receiving, Responding, Valuing, Organization, Characterization)  7.1. Questionnaire (self-assessment)  7.2. Paper case  7.3. Other:  8. COMPETENCY (Doing/Making, Co-ordinating/Operating, Observing/Analysing/Listening to/ Controlling/Driving, Choosing/Communicating/Enhancing, Conceiving/Visioning/Foreseeing)  9.1. Portfolio preparation  9.2. Clinical performance at outpatient wards  9.3. Clinical performance at inpatient wards  9.4. Clinical performance at night shifts (ward, emergency care unit, intensive care unit)  9.5. Other: (e.g. mini-clinical exam, etc.)  10. PROFICIENCY (Doing/Making, Co-ordinating/Operating, Observing/Analysing/Listening to/ Controlling/Driving, Choosing/Communicating/Enhancing, Conceiving/Visioning/Foreseeing)  10.1. Portfolio preparation  10.2. Clinical performance at outpatient wards  10.3. Clinical performance at inpatient wards  10.4. Clinical performance at night shifts (ward, emergency care unit, intensive care unit)  10.5. Other: (e.g. mini-clinical exam, etc.)</p>
<p><b>Assessment Methods:</b></p>	<p>A. Knowledge Assessment  a. Written Exam (MCQ+EMQ+KFQ) (F, S)  b. Objectively Structured Oral Examination (S)  c. Oral Examination (F)  d. Other:  B. Skills Assessment  a. Practical Examination (F)  b. Objectively Structured Practical Examination (S)  c. Mini Clinical Examination (S)  d. Other:  C. Attitude Assessment  a. Mini Clinical Examination (S)  b. Questionnaire (self-assessment) (F)  c. Paper case (S)  d. Observation of behaviour (360°) (F, S)  e. Other:  D. Competency Assessment  a. Mini Clinical Examination (S)  b. Clerkship/Internship Guide/Checklist Assessment (F, S)  c. Professional Portfolio Assessment (F)  d. Presentation Performance Assessment (F)  e. Seminar Performance Assessment (F)  f. Project Writing Assessment (S)  g. Other:  E. Proficiency Assessment  a. Mini Clinical Examination (S)  b. Clerkship/Internship Guide/Checklist Assessment (F, S)  c. Professional Portfolio Assessment (F)  d. Presentation Performance Assessment (F)  e. Seminar Performance Assessment (F)  f. Other:  *F: Formative, S: Summative</p>

## COURSE CONTENT

**For Detailed information:**

[https://med.yeditepe.edu.tr/sites/default/files/phase\\_1\\_apk\\_2021-2022\\_6.01.2022.pdf](https://med.yeditepe.edu.tr/sites/default/files/phase_1_apk_2021-2022_6.01.2022.pdf)

Week	Topics	Study Materials
1-6	Committee I: Basic Medical Sciences	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos, Specifically designed phantoms, Medical and laboratory devices, Medical and non-medical consumables, Practice materials
7	Committee Exam	
8-15	Committee II: Cell	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos, Specifically designed phantoms, Medical and laboratory devices, Medical and non-medical consumables, Practice materials
16	Committee Exam	
17-20	Committee III: Tissue I	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos, Specifically designed phantoms, Medical and laboratory devices, Medical and non-medical consumables, Practice materials
21-22	Midterm Break (2 weeks)	
23	Committee III: Tissue I	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos, Specifically designed phantoms, Medical and laboratory devices, Medical and non-medical consumables, Practice materials
24	Committee Exam	
25-32	Committee IV : Tissue II	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos, Specifically designed phantoms, Medical and laboratory devices, Medical and non-medical consumables, Practice materials
33	Committee Exam	
34-39	Committee V: Energy and Metabolism	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos, Specifically designed phantoms, Medical and laboratory devices, Medical and non-medical consumables, Practice materials
40	Committee Exam	
43	Final Exam	
47	Incomplete Exam	

<b>RECOMMENDED SOURCES</b>	
<b>Textbooks</b>	<ul style="list-style-type: none"> <li>● Gray's Anatomy for Students</li> <li>● Hollinshead's Textbook of Anatomy</li> <li>● A Textbook of Neuroanatomy</li> <li>● Textbook of Biochemistry with Clinical Correlations</li> <li>● Harper's Illustrated Biochemistry</li> <li>● Lehninger Principles of Biochemistry</li> <li>● Biophysics: A Physiological Approach</li> <li>● Physics in Biology and Medicine (4th edition)</li> <li>● Introductory Biophysics: Perspectives on the Living State</li> <li>● Primer of Biostatistics</li> <li>● Junqueira's Basic Histology: Text and Atlas 13th Ed.</li> <li>● The Developing Human: Clinically Oriented Embryology, 10th Ed.</li> <li>● Molecular Biology of the Cell</li> <li>● Clinical Bioethics: Theory and Practice in Medical-Ethical Decision Making</li> <li>● Blood and Guts: A Short History of Medicine</li> <li>● Medical Microbiology 8th ed, 2016</li> <li>● Organic Chemistry</li> <li>● Guyton Physiology</li> <li>● Human Physiology</li> <li>● Basic Immunology, Functions and Disorders of the Immune System</li> </ul>
<b>Additional Resources</b>	<ul style="list-style-type: none"> <li>● Each instructor will provide her/his notes to the students</li> </ul>

<b>MATERIAL SHARING</b>	
<b>Documents</b>	Textbooks, Lecture presentations, Course notes, Checklists, Laboratory Practice Manuals, Videos
<b>Assignments</b>	
<b>Exams</b>	After the exam; exam questions, question discussions, individual performance analysis reports

## ASSESSMENTS

Assessments table will be made with consideration of each learning objective for each committee and will be announced and explained in introductory lectures at the beginning of each committee.

### EXAMINATION MATRIX

MED 104 Basic Medical Sciences I

<u>Committee Exams</u>	: WE + OSPE
Written Exam:	
Number of Questions	100
Question Type	: Multiple Choice Questions*
	Committee Score (CS)= 95% of [90% CE (MCQ) + 10% (LPE)] + 5% of
PBL-P	
<u>Final Exam</u>	: WE
Number of Questions	200
Question Type	: Multiple Choice Questions*

The mean of committee examinations and the final examination will form 60% and 40% of the end of the year grade, respectively.

Incomplete Exam	: WE
Number of Questions	: 100 - 200
Question Type	: Multiple Choice Questions*

MCQ: Multiple Choice Questions

EMQ: Extended Matching Questions  
OSPE: Objective Structured Practical Exam  
WE: Written Examination (WE)  
SRPC: Scientific Research and Publication Course

\*Percentage that will be reflected in total points of written exam does not comply with the exact number of questions.

#### **Term Score (Pass or Fail) Calculations\*\*\***

$$\text{Term Score} = ((60\% \text{ of CE Average}) + (40\% \text{ of Final Exam Score or Incomplete Exam Score})) \times 97 + (\text{SRPC } 3\%)$$

**Pass; TS  $\geq$  60**

**Fail; FES < 50 (barrier point), ICES < 50 (barrier point), or/and TS < 60**

**The student is exempted from FE, if the CMS is  $\geq$  80 and all CSs are  $\geq$  60**

*The FE and ICE barrier point is not applied to the students whose all CSs are  $\geq$  60*

The distribution of questions in the question distribution tables in all exams could be changed by the coordinators.

<b>COURSE CATEGORY</b>
Professional (Knowledge and Skills: Normal structure and function of the human body at molecular, cellular,tissue and organ level; introduction to clinical practice-basic clinical skills)

<b>COURSE'S CONTRIBUTION TO PROGRAM</b>					
Program Learning Outcomes (APK)	Contribution				
	1	2	3	4	5
1.1.		X			
1.5.			X		
2.1.		X			
2.2.			X		
2.3.		X			
2.4.		X			
2.5		X			

<b>ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION</b>			
ACTIVITIES	Quantity/ day	Time (hour)	Workload (hour)
Lectures	490	1	490
Laboratory Practices	55	1	55
Scientific Project Writing	1	21	21
Independent Study for Mid-term Exam	366	1	366
Mid-term Exam (MCQ+OSPE)	10	2	20
Independent Study for Final Exam	252	1	252
Final Exam (MCQ)	1	4	4
SCIENTIFIC RESEARCH and PROJECT I Exam	1	1	1
Total Workload			1209
Total Work Load / 30 (h)			40.3
ECTS Credits of the Course			40