

REPUBLIC OF TURKEY
MALTEPE UNIVERSITY FACULTY OF MEDICINE
2025 - 2026 ACADEMIC CALENDAR PHASE I PROGRAM
OUTLINE and HOURS
PHASE I

Code	Course	Theoretical Hours	Practical Hours	Total Hours	Weeks	AKTS
MED 101	Basic Sciences I Subject Committee	53	5	58	7	42
MED 103	Basic Sciences II Subject Committee	91	7	98	6	
MED 102	Basic Sciences III Subject Committee	147	21	168	12	
MED 104	Basic Sciences IV Subject Committee	95	32	127	10	
KUG 100	Human Sciences in Medicine and Introduction to Clinical Practices	28	0	28	14	
ENG 115	Medical English-I	28	0	28	14	2
ENG 116	Medical English-II	28	0	28	14	2
ATA 151	Principles Of Atatürk and History Of Revolution-I	28	0	28	14	2
ATA 152	Principles Of Atatürk and History Of Revolution-I I	28	0	28	14	2
TRD 151	Turkish Language-I	28	0	28	14	2
TRD 152	Turkish Language-II	28	0	28	14	2
	Elective Course-I (Fall Semester)	28	0	28	14	2
	Elective Course-II (Fall Semester)	28	0	28	14	2
	Elective Course-III (Spring Semester)	28	0	28	14	2

COMMITTEE 1

BIOCHEMISTRY

Introduction to Biochemistry
 Structure and feature of water
 Solutions and concept of concentration
 Acids and Bases and pH
 Amino acids
 Structure and Functions of Proteins
 Structure and Functions of Vitamins and Coenzymes
 Structure and Functions of Proteins
 Minerals and Trace Elements

HISTORY OF MEDICINE

The Meaning of History of Medicine, Medicine in Prehistorical Periods
 Medicine in the Ancient Ages
 Medicine in the Middle Ages
 Turkish Medicine from the Beginning to the Ottoman Period
 Turkish Medicine in the Ottomans and in the Turkish Republic Period
 Western Medicine from Renaissance to today

MEDICAL BIOLOGY

Introduction to Medical Biology
 Biomolecules and Evolution
 Structure and Functions of Nucleic Acids
 Chromosome Structure and Epigenetics
 DNA Replication
 Cytogenetics
 DNA Damage and Repair Mechanisms

PHYSICS

Introduction to Biophysics
 Measurement
 Waves: Longitudinal and Standing Waves
 Fluids
 Electrical Field and Dipole
 Molecular Forces
 Effects of Electrical Current on Body
 Optics and Optical Medical Instruments

COMMITTEE 2

BEHAVIOURAL SCIENCE

Psychoanalytic Theory
 Stress and Adaptation
 Disease, Health and Normality
 Patient-Doctor Relationship
 Defense Mechanisms
 Biopsychosocial Model



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BIOCHEMISTRY

Biological Oxidation, Bioenergetics and ATP
Introduction to Enzymes and Kinetics
Biosynthesis and Post-translational Modifications of Proteins
Protein Targeting
Protein Turnover
Structure and Functions of Carbohydrates
Structure and Functions of Lipids
Structure and Functions of Nucleotides

BIOPHYSICS

Biomechanics: Vectors
Biomechanics: Torque and Rotational Movement
Biomechanics: Elastic Properties of Tissues
Imaging Techniques and Principles (Ultrasound and NMR)
Heat, Thermodynamics and Bioenergetics
Principles of Recording Biomedical Signals

MEDICAL BIOLOGY

Transcription
Genetic Code and Protein Synthesis
Regulation of Gene Expression
Regulation of Gene Activity in Prokaryotes
Regulation of Gene Activity in Eukaryotes
Molecular Basis of Genetic Variation
Immunogenetics

COMMITTEE 3

ANATOMY

Introduction to Anatomy, Important Anatomical Terms
Bones of Upper Limb
Bones of Lower Limb
Thorax and Ribs
Vertebrae and Vertebral Column
Skull
Splanchnocranium
Neurocranium, Cranial Cavity
Temporal, Infratemporal and Pterygopalatine Fossae

BEHAVIOURAL SCIENCE

Cognition and Emotions
Thinking, intelligence and learning
Sexuality
Culture and Disease
Violence
Adulthood
Personality Process
Aging

BIOCHEMISTRY

Biomembrane Components and Transport I
Biomembrane Components and Transport II
Glycolysis
Glycogen metabolism
Gluconeogenesis
Metabolism of monosaccharides other than glucose
Citric acid cycle
Respiratory chain
Pentose phosphate pathway
Glucuronic acid metabolism
Regulation of blood glucose
Biosynthesis of lipids
Lipid Catabolism

BIOPHYSICS

Diffusion and Fick's Law
Gibbs-Donnan Equilibrium
Nernst Equilibrium
Generation of Membrane Potential
Kinetics of the Voltage Gated Channels
Action Potential
Membrane Potential Changes Induced by Subthreshold Stimulus
Compound Action Potential

BIOSTATISTICS

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Definition and Use of Biostatistics
Descriptive Statistics
Tables and Graphics
Types and Sources of Data
Demographic and Morbidity Statistics

HISTOLOGY

Introduction to Histology: Histochemical Technics and Basic Principles
Introduction to Embryology
Microscopy
Basic Techniques for Microscopy
Cell Structure 1: Plasmalemma
Cell Structure 2: Organelles & Inclusions
Cell Structure 3: Organelles & Inclusions
Cell Structure 4: Cytoplasm
Cell Structure 5: Cytoskeleton
Cell Structure 6: Nucleus
Stem Cells
Epithelial Tissue
Fertilization
Gametogenesis
Early Embryological Period: First Week

MEDICAL BIOLOGY

Prokaryotic, Eukaryotic Cells
Cytoplasm and Cellular Organelles
Nuclear Transport
Cell Cycle and Its Regulation
Cell Division and Gametogenesis
Cellular Aging
Cell Death
Signal Transduction
Molecular Basis of Cancer
Cell Culture
Stem Cells
Recombinant DNA Technology and Its Applications

MEDICAL MICROBIOLOGY

Introduction to Microbiology
Eucaryotes and Procaryotes
Bacterial Morphology and Classification
Bacterial Metabolism
Bacterial genetics
Bacterial growth
Microbiota-Sampling for Microbiology
Viral Classification, Structure and Replication
Fungal classification, structure and general properties
Parasitic Classification, Structure and General Properties
Disinfection and Sterilization
Introduction to Immunology

PHYSIOLOGY

Volume and Composition of Body Fluids
Homeostasis
Cell Membrane and Transport of Substances Across the Cell Membrane
Bioelectric Potentials
Capillary Fluid Exchange

COMMITTEE 4

ANATOMY

Body Joints in General
Joint Types
Axial Scleron Joints
Appendicular Scleron Joints
Introduction to Myology
Pectoral Region and Superficial Back Muscles
Superficial Muscles of Back and Neck
Deep Muscles of Back and Neck
Shoulder Muscles
Axillary Region
Anterior Group (Flexor) Arm Muscles
Posterior Group (Extensor) Arm Muscles
Hand Anatomy
Plexus Brachialis



Gluteal Region and Hip Muscles
Anterior, Lateral and Medial Region of Thigh
Posterior Thigh Muscles, Popliteal Fossa
Leg Anterior Muscles
Leg Lateral Muscles
Leg Posterior Muscles
Foot Anatomy
Foot Anatomy

Anterior and Lateral Neck

BEHAVIOURAL SCIENCE

Verbal and non-verbal communication and empathy
Application: Verbal and non-verbal communication and empathy
Biological Foundations of Behaviors
Psychological Foundations of Behaviors
Suicide

BIOCHEMISTRY

Connective Tissue Biochemistry

BIOPHYSICS

Radioactivity and Types of Radioactive Decay
Interferation of Radioactive Beams with Materials
Radioactivity Units and Protection from Radiation
Effects of Non-ionised Radiation
Biological Effects of Radiation
Production of X-Rays
PET and Computerised Tomography
Laser Beams and its used in Medicine

HISTOLOGY

Connective Tissue
Cartilage Tissue
Bone Tissue
Osteogenesis
Muscle Tissue
Development and Histology of Skin
Formation Of Bilaminar Embryonic Disc: Second Week
Formation Of Germ Layers and Early Tissue and Organ Differentiation: Third Week
Placenta and Fetal Membranes
The Fetal Period: Ninth Week To Birth
Congenital Malformations and Birth

MEDICAL BIOLOGY

Mendelian Genetics
Inheritance Patterns of Monogenic Diseases
Beyond Mendel's Laws
Non-Mendelian Inheritance
Population Genetics

PHYSIOLOGY

Striated Muscles and Contraction Theories
Striated Muscles and Mechanical Features
Physiology of Smooth Muscles
Nerve Muscle Junction
Synaptic Transmission and Receptors
Autonomic Nervous System
Peripheral Nervous System Physiology
Spinal Reflexes


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