Medicine			
Bachelor	TR-NQF-HE: Level 7	QF-EHEA: Second Cycle	EQF-LLL: Level 7

Course Introduction and Application Information

Course Code:	TIP201
Course Name:	2nd Panel
Semester:	Spring
Course Credits:	ECTS: 50
Language of instruction:	
Course Condition:	TIP101 - 1. Kurul
Does the Course Require Work Experience?:	No
Type of course:	Compulsory Courses
Course Level:	Bachelor / TR-NQF-HE:7. Master`s Degree / QF-EHEA:Second Cycle / EQF-LLL:7. Master`s Degree
Mode of Delivery:	Face to face
Course Coordinator:	Prof. Dr. HİKMET KOÇAK
Course Lecturer(s):	Prof.Dr. M. Ayberk Kurt;Prof.Dr. Çağatay Barut;Prof. Dr. Figen Kaymaz; Prof. Dr. Rauf Onur Ek; Prof. Dr. Ferda Kaleağasıoğlu;Prof. Dr. Engin Ulukaya; Prof Dr. Yeşim Gürbüz;Prof. Dr. Pınar Atasoy; Prof. Dr.Gönül Çatlı ; Prof. Dr. Bülent Baysal;Prof.Dr. Gül Nihal Özdemir Assoc. Prof. Pınar Yurdakul Mesutoğlu ;Assoc. Prof. Ziya Kalem; Doç. Dr. Mehmet Üzel;Asst. Prof. Gökçer Eskikurt;Asst. Prof. Özgür Tataroğlu;Asst. Prof. Esma Nur Okatan;Asst. Prof. Hakan Darıcı;Asst. Prof. Duygu Koyuncu Irmak;Asst.Prof. Ayham Abulaila;Asst.Prof. Denizhan Karış;Asst.Prof. Ayca İlter;Dr. Öğr. Üyesi Caner Geyik;Dr. Öğr. Üyesi Murat Ekremoğlu;Dr. Öğr. Üyesi Huri Bulut;Dr. Öğr. Üyesi Yelda Birinci;Dr. Öğr. Üyesi D Sinem Güden;Asst.Prof. Sibel Sensu;Asist. Prof. Burçin Atasevin;Asst. Prof.Üyesi Berk Bulut;Asst. Prof. Özge Kaymaz Yılmaz; Asst. Prof. İsmail Gönen
Course Assistants:	

Course Objective and Content

Course Objectives:	At the end of the Nervous, Sensory Committe, the students learned the features and parts of the central nervous system; comprehend the anatomy of the spinal cord; learned the course and functions of descending and ascending roads; comprehend the brain stem and parts of the brain; learned the formatio reticularis structure and the limbic system, and comprehended the ventricular system; learned the membranes and circulation of the CNS; learned the eyes and ways of seeing; have learned the ear and hearing ways; It is aimed for students to learn the embryological development, microscopic morphology, structural differences of neuron cells, their different localizations and related functional tasks of the nervous system and related sensory organs and endocrine organs. Students explain the basic terminology and basic information and general principles about the nervous system and sensory organs; learning the connections between the motor cortex, brain stem, cerebellum and basal ganglia in motor control; comprehend the physiological mechanisms of the somatosensory system; It is aimed to be able to describe the neural structures related to the perception, signal transmission and evaluation of special senses, their functions and how the brain metabolism works, and to learn the effect of the brain's motivational systems on behavior. Students learn about nervous system organization, neural circuits of information processing; It is aimed to understand the importance of neurotransmitters in signal transmission and to explain motor functions and reflexes of the spinal cord. At the end of the Circulation-Respiratory Committe, the students have acquired general information about the structures that make up the circulatory and respiratory system; It is aimed to learn the anatomical structures of the Nose, Paranasal Sinuses, Larynx, Trachea and lungs. Students should learn the embryological development of the structures that make up the circulatory and respiratory systems, the microscopic morphology, the structural differences of the cells, their different localizations and the functional tasks associated with them, and be able to connect with the clinic. Students will be taught the cardiac cycle, the physiology of the body and blood flow, the measurement of cardiac functions and the function of the physiological waves (ECG), arteries and veins, physiology of the capillary and lymphatic system, It is aimed to have knowledge about the regulation mechanism of respiration, to gain knowledge and skills about the structure-function relationship of respiratory system organs. It is aimed to learn the basic information about circulatory and respiratory dynamics and respiratory biophysics and clinical virology in Microbiology and Clinical Microbiology courses. At the end of the Digestive-Metabolism COMMITTEE, students It is aimed to have information about the anatomical, histological, embryological features related to the digestive system, as well as the physiological and biochemical processes related to energy need and metabolism. In pharmacology courses, it is aimed to gain knowledge and skills about the passage of drugs through the biological membrane and absorption, distribution of drugs, excretion of drugs, mechanisms of action of drugs.
Course Content:	Theoretical courses: Anatomy, Physiology, Biochemistry, Biophysics, Microbiology and Clinical Microbiology, Immunology, Pharmacology and Clinical Pharmacology, Histology-Embryology, Pathology, Obstetrics and Gynecology, Child Health and Diseases, Biostatistics and Medical Information, -Laboratory Practices, Clinical Skills

Learning Outcomes

The students who have succeeded in this course;
1) Anatomy of Medulla spinalis, descending and ascending pathways, and functions, Brainstem, formatio reticularis, Cerebellum, diencephalon, Basal ganglia, Motor and sensory areas of cerebrum, Limbic system, ventricular system, brain membrains, dural sinuses and brain vessels, Autonomic nerve system functions
2) General organization of the nervous system, basic functions of synapses, neuron circuits in data processing, the significance of neurotransmitters in communication between neurons and the types of neurotransmitters Sensory function of the muscle fibers and Golgi tendon for spinal cord motor functions, its connection with reflexes, Spinal shock, Fundamentals of reflex examination
3) Basic concepts and definitions related to the embriological development and histology of nervous system, sensory organs and endocrine organs, Parenchymal and stromal structure and functions nervous system, sensory organs and endocrine organs, Structure and function of cellular organizations of nervous system, sensory organs and endocrine organs, Nervous system, sensory organs and endocrine organs tissue differences, developmental features and pathologies due to structural deviations

4) The functions of motor cortex, brainstem, cerebellum and basal ganglia and their effects on each other, Effects of limbic system and hypothalamus on behaviour, Primary, secondary and specialized brain parts and their functions

5) The functions of specific brain areas and resulting physiological and behavioral effects, Brain waves at various activities of brain (sleep, coma, alertness) and related brain parts, Changes in brain blood flow and blood brain barrier; functions of cerebrospinal fluid and its effect on brain metabolism

6) Optic of the visual sense, the receptor and neural function of the retina in the sense of vision, the central pathways of vision and their functions, the importance of special vision areas related with color, depth, motion

7) Function of autonomous nervous system, Physiological functions of sensory receptors, pain and heat perceptions of receptors, their transmission pathways and cortical and subcortical processing Brain parts responsible of biological rythms

8) The functional structure of the ear, transmission of sound from the ear to central nervous system, Transmission of taste and smell from the receptor level to the relevant areas in the central nervous system, The basics of electroencephalography and simple recording technics, Methods used in determination of visual acuity and color blindness, the difference of reaction time according to the type of stimulus, and basic hearing tests using tuning fork.

9) Should describe antibiotics, classification of antibiotics, mechanism of action of antibiotics against bacteria, how each antibiotic group acts, Should list the ways of resistance developed by microorganisms against antibiotics, resistance mechanism against each antibiotic group

10) Should describe the tests and methods used in identification of bacteria, general principles of tests, Should explain the general and distinctive features of bacteria virulence factors and their mode of action, the diseases they cause, the factors and mechanisms of action used in their occurrence, tests used in their identification and species distinction, antibiotics used in treatment

11) Should give the definition of immunology; explain the immune system cells and their functions. Should explain the Features and functions of organs and tissues that play a role in the immune system. Should describe the antigen and immunogen, the roles of the antigen in the immune system, characteristics determining the epitope, immunogenicity and immunogenicity, Should describe the structures of antibodies, functions of antibodies and their roles in the immune response, the structures and roles of different types of antibodies. Should explain the general principles of tests based on antigen-antibody reactions, tests and methods used in the diagnosis of diseases, Should describe the processing and presentation of antigen

12) Should describe the pharmacology, pharmacokinetics, pharmacodynamics, pharmacogenomics;explain the history of pharmacology and recognize pioneer scientists; n the general principles of pharmacology; receptor concept and define agonistic and antagonistic effects; the physical nature of drugs, the types of drug-receptor bonds, the importance of drug shape (stereoisomerism): the classification of drug names

13) Should describe the approaches for drug discovery and development; basic and applied science, clinical research, translational research , Should explain the steps in drug development process, target identification, target validation, lead identification, lead optimization; the tests used in preclinical drug toxicity research: acute, subacute, chronic toxicities, reproductive toxicity, carcinogenic and mutagenic potential; the limitations in preclinical toxicity testing; the phases of clinical testing; placebo response and blinding of trials (single-blind and double-blind)

14) Should identify the place of the science of medical pathology and cytopathology in medical sciences, its application areas, departments, the importance of technical procedures in the pathology laboratory, the role of the diagnosis, course and treatment of the disease in routine-educational and health research areas

15) Should define various stages (childhood, adolescence, sexual maturity and menopause) in women's life with reproductive physiology. Should link the organization and function of female gonads Should define various stages in male life (childhood, adolescence, sexual maturity, old age) in relation to reproductive physiology. Should explain the regulatory activities of accessory reproductive organs. Should explain the male gender endocrine regulation

16) Should describe circulation, respiration, excretory hormonal events in the fetal period Should explain the aging and its stages; Aging theories; Physiological changes in old age; Factors affecting health in old age

17) Should describe ovarian cortex and medulla, developing follicles and corpus luteum, their relationship with hormones, Should describe the tuba uterina parts, layers and histological features, Should describe uterus layers and histological structures

18) Should describe tissues that make up the male genital system, Should identify the layers in the scrotum wall and their relation to the testicle Should identify histological structure of the testicles, Should identify the cells in the seminiferous tubules, their structures and functions, Should describe genital excretory ducts and histological structures, Should describe the histological structure of the prostate, vesica seminalis and bulbo-urethral glands, Should describe thehistological structure and histophysiology of the penis, Should explain microscopic images of male genital system organs

19) Should describe lymphatic, urinary, digestive and respiratory systems development in life before birth

20) Should explain the menstrual cycle, Should explain the pregnancy and 1st, 2nd and 3rd trimester, Should explain birth

21) Should explain neonatal Period, Should describe bilirubin metabolism in the newborn, Should explain neonatal nutrition and

properties of breast milk Should explain nutrition in children, Should describe neuromotor development in the child, Should explain normal growth and puberty development
22) Should classify the hormones according to their chemical structure, solubility pattern and receptor types. Should explain the different mechanism of actions for receptor activation and signal transduction.
23) Should explain the hormones which are produced in pancreas, their main functions and regulatory mechanisms of those hormones. Should explain the hormonal regulation of blood glucose levels during postprandial, fasting and prolonged fasting states. Should explain the diagnostic criteria for diabetes mellitus. Should differentiate type 1 and 2 diabetes, acute and chronic complications of diabetes and explain their biochemical mechanisms.

Course Flow Plan

Week	Subject	Related Preparation
1)	NERVE, SENSORY Presantation of the Course Program-Introduction of Directive and Regulations Committee Presentation- Good Presentation Techniques Theoretical: ANATOMY- Entrance to the central nervous system and general morphology of the CNS I-II-III, Medulla spinalis I-II, Descending and ascending tracts I-II-III-IV, HISTOLOGY-EMBRYOLOGY- Nervous System Cells, I-II CNS Development I-II, Medulla spinalis histology I-II PHYSIOLOGY- PHYSIOLOGY- Organization of the Nervous System Basic Functions of Synapses, Motor functions of the Spinal Cord I-II, Neurotransmitters, Cortical Control of Motor Function Laboratory: ANATOMY- Medulla spinalis PHYSIOLOGY- Special Reflexes in Humans	
2)	Theoretical:ANATOMY- Descending and ascending tracts III-IV, Brain stem and Formatio reticularis I-II-III-IV, Cerebellum I-II, Cranial Nerves I-II-III-Iv-V-VI, HISTOLOGY-EMBRYOLOGY- Skin and its appendages, Skin receptors, Peripheral Nervous System, Cerebellum histology I-II, PHYSIOLOGY- Sensory Receptors, Somatic Senses I-II, Pain I-II, Control of Motor Function by Brainstem, Contribution of Cerebellum to General Motor Control,	
3)	Theoretical:ANATOMY- Diencephalon I-II-III, Basal nuclei and White matter I-II, Cerebral hemispheres and motor and sensory regions I-II-III-IV HISTOLOGY-EMBRIOLOGY- Brain Histology I-II PHYSIOLOGY- Activity states of the brain - Sleep, Brain waves and epilepsy, Biological rhythms I-II, Contribution of Basal Ganglia to General Motor Control, Cerebral Cortex (cortical areas, association areas), Laboratory:ANATOMY- Brain stem, Cerebellum, Cranial nerves, Diencephalon, Basal nuclei, White matter, PHYSIOLOGY- EEG	
4)	Theoretical:ANATOMY- , Limbic system, Ventricular system and liqor cerebrospinalis Meninges and sinuses/CNS vessels I-II, Autonomic nervous system I-II, Eye anatomy and visual pathways I-II-III. HISTOLOGY-EMBRIOLOGY- CNS membranes, plexus chorioideus, blood-brain barrier, Neural plasticity and regeneration in the nervous system, Neural crest cells and PSS Development, PHYSIOLOGY- Limbic system, Hypothalamus, Autonomic Nervous System I-II, Mental functions of the brain, learning and memory, Physiological mechanisms related to cerebral dominance and language, Brain Blood Flow, Blood Brain Barrier, Cerebrospinal fluid and Brain Metabolism, Laboratory:ANATOMY- Cerebral hemispheres, Limbic system and ventricular system, Meninges and sinuses and CNS vessels. Eye anatomy. HİSTOLOGY -Nervous system	
5)	Theoretical: ANATOMY - Ear anatomy and auditory pathways I-II-III HISTOLOGY-EMBRIOLOGY- Eye histology I-II, Development of the eye, ear histology I-II. Taste and Odor Histology I-II. PHYSIOLOGY- Optics of vision, Receptor and neural function of the retina, Central neurophysiology of vision, Color vision and stereoscopy, Functional structure of ear, Transmission of sound in the ear and hearing tests, Brain Blood Flow and Blood-Brain Barrier, Cerebrospinal Fluid and Brain Metabolism, The chemical senses - Taste and smell. BIOPHYS- Biophysical properties of sound and hearing biophysics, Optics, principles of spectrophotometry and biophysics of vision Laboratory: ANATOMY- Ear anatomy HİSTOLOGY-Eye, ear and skin Physiology-Eye Physiology, Tuning fork tests and reaction time	
6)	Theoretical: ANATOMY- Q&A With The Lecturer HISTOLOGY-EMBRIOLOGY - Q&A With The Lecturer PHYSIOLOGY - Q&A With The Lecturer BIOPHYS- Q&A With The Lecturer Students presentations COMMITTEE EXAM	

7)	CIRCULATION, RESPIRATORY Committee Presentation Theoretical: ANATOMY-Heart and pericardium I-II-III-IV, Posterior Mediastinum, Large Vessels and Vena Azygos I-II HISTOLOGY-EMBRIOLOGY- Heart Histology PHYSIOLOGY-Regulation of heartbeat I-II, Mechanical events of the cardiac cycle I-II. MICROBİOLOGY-Introduction to Clinical Virology, Papilloma and polyomaviruses. BIOPHYS-Hemodynamic principles and Fluid Dynamic,Hemorheological principles and Circulatory Biophysics	
8)	Theoretical: ANATOMY- Mediastinum HISTOLOGY-EMBRIOLOGY-Vascular Histology I-II, Development of the heart I-II PHYSIOLOGY- Cardiac Output and its regulation I-II, Measurement of heart functions - Electrocardiogram, Physiological waves in the EKG Electrocardiogram, Features of blood flow in coronary vessels, Functions of arteries MICRO-Herpesviruses I-II, Adenoviruses, Poxviruses, Picornaviruses Laboratory: ANATOMY-Heart and Pericardium PHYSIOLOGY-EKG	
9)	Theoretical: ANATOMY- Lymphatic System and Lymphoid Organs I-II, Thorax, diaphragma, respiratory muscles I-II, The nose and related structures I-II HISTOLOGY-EMBRIOLOGY-Circulatory system development I-II, Circulatory system anomalies, Vascular anomalies I-II, Lymphatic system development PHYSIOLOGY-Functions of veins, Capillary and Lymphatic system, Local factors affecting blood flow, The main factors that cause blood pressure, Short, medium and long term regulation of arterial pressure and blood volüme MICRO-Coronavirus I-II, Norovirus,Rhabdo, Filo and Bornaviruses, Retroviruses, Hepatit viruses I-II Laboratory: ANATOMY-Great vessels, Mediastinum and Thorax Wall HISTOLOGY-Cardiovascular PHYSIOLOGY-Blood pressure measurement and cardiovascular system examination	
10)	Theoretical: ANATOMY- Paranasal sinuses, -Larynx I-II, Trachea and lungs HISTOLOGY-EMBRIOLOGY – Respiratory system, PHYSIOLOGY - Structure-function relationship of respiratory system organs I-II, Pulmonary function tests. MICRO-Orthomyxoviridae I-II, Paramyxoviridae, Reoviridae, Prions Laboratory: ANATOMY-Nose and related structures, Larynx, Trachea and Lungs	
11)	Theoretical HISTOLOGY-EMBRIOLOGY – Respiratory system histology II Larynx and Trachea, -Respiratory system histology III Lungs, Respiratory system development, Respiratory system anomalies PHYSIOLOGY-Factors determining lung compliance and surface tension of alveoli, Oxygen transport in the blood, Transport of carbon dioxide in the blood, Circulation, ventilation perfusion rates in the lungs, Gas exchange in the alveoli, Control of breathing, Respiratory regulation in health and disease, Aviation and high altitude and space physiology, Physiology in hyperbaric conditions Laboratory: HİSTOLOGY-Respiratory system histology PHYSIOLOGY-Respiratory system examination, Pulmonary function test	
12)	Theoretical: HISTOLOGY-EMBRIOLOGY - Q&A With The Lecturer PHYSIOLOGY - Q&A With The Lecturer MICROBİOLOGY- Q&A With The Lecturer Student presentations COMMITTEE EXAM	
13)	METABOLISM, DIGESTIVE Committee Presentation Theoretical PHARMA-Introduction to Pharmacology, Biological Membrane Transfer of Drugs and Absorption, ANATOMY-Art. temporomandibularis and chewing muscles I-II, Cavum oris and inner structures I-II, Pharynx, Oesophagus and Stomach I-II PHYSIO-General Principles of Gastrointestinal System Physiology, motility, circulation and neural control I-II Laboratory ANATOMİ -Art. temporomandibularis and Cavum oris HİSTOLOGY-Oral histology	
14)	Theoretical ANATO-Peritoneum I-II, -Duodenum Jejunum and ileum (Intestinum tenue) I-II, Intestinum crassum I-II PHYSIO-Progression and mixing of nutrients in the digestive tract I-II, Secretion in the digestive tract I-II, Digestion and absorption in the digestive tract I-II PHARMA-Distribution of Drugs, Biotransformation of Drugs BIOCHEM-Specific Metabolic Pathways of Amino Acids I HISTO-Small and large intestine histology I-II Laboratory ANATOMY-Peritoneum, pharynx, esophagus and Stomach, Intestinum tenue ve crassum HİSTOLOGY-Gastric and intestinal histology	
15)	Theoretical ANATO-Liver and gallbladder I-II , Anatomy of pancreas, Portal system and portocaval anastomoses BIOCHEM-Porphyrin Structure and Synthesis I-II, Heme Breakdown (Bilirubin Metabolism), Gastrointestinal System Hormones, Metabolism in satiety, Metabolism in hunger PHYSIO-Mechanisms of gastrointestinal diseases, Liver physiology HISTO-Liver and gallbladder histology I-II-III, Pancreatic histology I-II, Digestive	

	system development and anomalies I-II PHARMA-Drug Administration and Pharmaceutical Forms I-II Laboratory HİSTOLOGY-Histology of liver, pancreas, gallbladder ANATOMY-Liver, biliary and biliary tract, Pancreas
16)	Theoretical HISTO - Development of liver, pancreas, gallbladder, Liver, pancreas, gallbladder anomalies, Pharyngeal arches, -Pharyngeal arch anomalies, Facial Development I-II PHYSIO-Regulating appetite and body weight I-II, Energy and metabolism, Regulation of body temperature I-II BIOCHEM-Obesity biochemistry, Xenobiotic Metabolism, Macro Minerals, Trace and Ultra Trace Elements I-II PHARMA-Excretion of Drugs, Mechanism of Action of Drugs, Relationship of Dosage-Concentration-Effect I-II, Receptor Concept, Factors Modifying Drug Action I-II HISTO-Q&A WITH THE LECTURER
17)	Theoretical: BIOCHEM - Q&A With The Lecturer PHARMA - Q&A With The Lecturer PHYSIOLOGY - Q&A With The Lecturer Student presentations COMMITTEE EXAM
18)	I. FALL MIDTERM FINAL EXAM
19)	UROGENİTAL, ENDOCRİNE COMMITTEE PRESENTATION Theoretical ANATOMY-Kidney Anatomy I-II, Ureter, Mesane, Urethra I-II, Pelvis, Pelvis döşemesi ve Perineum I-II HISTOLOGY-Histology of Kidney I-II, Histology of Urether, Mesane, Urethra, Development of the urinary system PHYSIOLOGY- Glomerular filtration I-II, Functional structure of kidneys and urine formation, Renal blood flow and regulation, Regulation of renal tubular reabsorption and Secretion I-II-III, Concentration and dilution of urine I-II BIOCHEMISTRY-Acid-base balance of the body I-II Laboratory HIST. & EMB. - Histology of urinary system ANATOMY- Anatomy & Dissection Hall urinary system
20)	Theoretical ANATOMY-Erkek genital organları I-II PHYSIOLOGY-Regulation of extracellular fluid osmolarity, Hypernatremia, hyponatremia and edema, Kidney regulation of potassium, calcium, phosphate and magnesium, Regulation of blood volume and extracellular volüme, Regulation of acid base volüme, Metabolic acidosis, respiratory acidosis, Metabolic alkalosis and respiratory alkalosis, Physiology of male reproductive system I-II HISTOLOGY- Male reproductive system histology, Spermatogenezi, Development of the Male reproductive system BIOCHEMISTRY-intracellular receptor mediated signal transduction pathways, Biochemistry of signal transduction mediated by plasma membrane receptors Laboratory Clinical Skills- Intramuscular (I.M.) and Subcutaneous (S.C.) ANATOMY - Anatomy & Dissection Hall Male reproductive system HIST. & EMB. - Male reproductive system histology
21)	Theoretical PHYSIOLOGY -Effects of diuretics on tubules and micrition I-II, Physiology of kidney diseases I-II, Physiology of female reproductive system I-II , Pituitary Gland and Hypothalamic Control, Endocrine glands and hormones, Physiology of Growth Hormones, Adrenocortical Hormones I-II HISTOLOGY- Female reproductive system histology, Oogenezis, Histology of the ovarian-uterinal cycle, Fertilization mechanisms, Histology of Neuroendocrine system I-II ANATOMY-Female Reproductive Organ Anatomy I-II, Introduction to Endocrine System & Pituitary gland BIOCHEMISTRY -Mechanism of action of hormones, Hypothalamus, Pituitary and Pineal Gland Hormones I-II, Structure, Synthesis and Catabolism of Thyroid Hormones I-II Laboratory ANATOMY-Anatomy & Dissection Hall Female reproductive system HIST. & EMB. -Kadın genital sistem histolojisi
22)	Theoretical HISTOLOGY-Histology of Pituitary and Pineal glands, Development of Pituitary and Pineal glands, Histology of Thyiroid-parathyroid I-II, Histology of the Surrenal glands I-II, Development of the Thyroid and Parathyroid glands, Development of the Surrenal glands ANATOMY-Gl. suprarenalis, Gl. thyroidea, Gl. parathyroidea I-II PHYSIOLOGY-Pancreas as an endocrine organ, Insulin, Glucagon and Diabetes Mellitus, Thyroid Metabolic Hormonesı I-II, Hormones that regulate calcium I-II BIOCHEMISTRY-Pancreatic Hormones and the Renin-Angiotensin System, Adrenal Hormones and Eicosanoids I -II, Gonadal Steroidler Laboratory ANATOMY - Anatomy & Dissection Hall Endocrine system HIST. & EMB. -Histology of Endocrine system
23)	Q&A WITH THE LECTURER: HISTOLOGY BIOCHEMISTRY ANATOMY Student Seminer COMMITTEE EXAM
24)	BIOLOGICAL AGENTS-BODY DEFENSE-INFLAMMATION COMMITTEE PRESENTATION Theoretical

	MICROBIOLOGY - Klinik Bakteriyolojiye Giriş I-II, Staphylococcus, Streptococcus and Enterococcus I-II, Bacillus, Corynebacterium ve Listeria, Enterobactericeae, Salmonella, Shigella IMMUNOLOGY - Antijen-Antikor I-II-III, PATHOLOGY -Developmental disorders,and patological terminology I-II, BIOPHYSICS -Radiation Biophysics	
25)	Theoretical -MICROBIOLOGY- Yersinia, Vibrio, Campylobacter and Helicobacter, Non-fermenters, Brucella, Neisseria-Moraxella-Haemophilus, Francisella, Bordetella and Legionella, Spirochetes I-II IMMUNOLOGY - Processing of antigens and presentation to lymphocytes, MHC molecules, Humoral immune response, Cellular immune response, Mucosal immune response PATHOLOGY -Cell damage, cell death, adaptations I-II, Acute and chronic inflammation I-II BIOPHYSICS -Magnetic Resonance Imaging Laboratory- PATHOLOGY - Pathology Techniques MICROBIOLOGY - Microscopic Study and Culture	
26)	Theoretical MICROBIOLOGY-Mycoplasma and Ureaplasma, Chlamydia, Rikettsia and Coxiella, Mycobacterium and Nocardia, General characteristics of anaerobic bacteria and Clostridium, Mechanism of action of antibiotics I-II IMMUNOLOGY - Complement system, Cytokines I-II PATHOLOGY -Cell,regeneration and repair I-II BIOPHYSICS -SPECT-PET Laboratory Clinical Skills- Intravenous (I.V.) and Intradermal (I.D.) Injection PATHOLOGY Cellular injury and response MICROBIOLOGY - Bacteria Identification	
27)	Theoretical PATHOLOGY - Hemodynamic Disorders, thromboembolism and shock I-II BIOPHYSICS - Endoscopy-Ultrasonography, LASER MICROBIOLOGY -Gut Brain Axis, Resistance mechanisms of antibiotics I-II, Introduction to Clinical Mycology, Superficial and Cutaneous Mycoses I-II, Opportunistic Mycoses, Systemic Mycoses, Subcutaneous mycoses, Mycotoxins, Laboratory MICROBIOLOGY Micro-lab PATHOLOGY - Pathology of inflammatory diseases Clinical Skills- Establishing Vascular Access	
28)	Laboratory Clinical Skills- Blood Pressure Measurement MICROBIOLOGY - Fungi Investigation Methods	
29)	Q&A WITH THE LECTURER: MICROBIOLOGY PHARMACOLOGY BIOPHYSIS Student Seminar COMMITTEE EXAM	
30)	STAGES OF LIFE-I COMMITTEE PRESENTATION Theoretical PHARMACOLOGY- Pharmacokinetic & Pharmacodynamic Drug Interactionsi oxic Effects of Drugs, Drug Use during Pregnancy and Teratogenicity, Pharmacology of Geriatrics and Pediatrics MICROBIOLOGY-Introduction of Parasitology, Intestinal and urogenital protozoans I-II BIOCHEMISTRY-Free Radicals And Oxidative Stress, Plasma Proteins and Clinical Significance I-II BIOSTATISTICS-Scientific Research and the definition of statistics, measurement and main measurement scales, Summarization of data, frequency distributions and graphics, Main measures of central tendency: Mean, median, mode, geometric mean graphics, The concept of variability and main measures of dispersion: variance, standard deviation, quartiles, coefficient of variation graphics, PHSIOGY-Phisiology of pregnancy, natal and lactation I-II, Neonatal phydiology I-II, The reflections of gender differentiation on behaivor in brain developmen OBST-Pregnancy and 1st Trimester, 2nd Trimester, 3rd Trimester, Birth	
31)	FEAST OF RAMADAN WEEK	
32)	Theoretical PEDIATRICS-Neonatal Care in the Delivery Room and Initial Examination of the Newborn I-II, Screening Tests of Newborn, Normal growth, Pubertal Development, Calcium and Vitamin D metabolism HISTOLOGY-Early develeopment abnormalities I-II, Hücresel yaşlanma BIOSTATISTICS-Introduction to probability, main rules and applications in health, Main discrete probability distributions-II, Main distributions-II: normal distribution, standard normal distribution, Sampling and sampling methods PHARMACOLOGY-Drug Research and Ethics, Pharmacogenetics, Autacoids in Amine Structure I-II, MICROBIOLOGY-Blood and tissue protozoans I-II, Nematodes I-II, Trematodes I-II,	
33)	Theoretical MICROBIOLOGY -Arthropods I-II, Cestodes I-II PHARMACOLOGY - Autacoids in Peptide Structure, Autacoids in Gas Structure, Autacoids in Fatty Acid Structure, An Overview of Medicines Associated with Eicosanoids PHSIOGY -Physiological changes in aging BIOSTATISTICS -Theoretic sampling distribution, Determination of sample size, Hypothesis testing, the definition of statistical significance, Estimation of	

	population mean and hypothesis testing related to population mean, confidence intervals, z test, student's t test HISTOLOGY -Skin aging and wound healing Laboratory MICROBIOLOGY - Parasitology	
34)	Theoretical OBST-Menstrual cycle Q&A WITH THE LECTURER: PHARMACOLOGY BİOSTATISTICS MICROBIOLOGY PHYSİOLOGY Student Seminar COMMITTEE EXAM	
35)	II. SPRING MIDTERM FINAL EXAM	

Sources

Course Notes / Textbooks:	FİZYOLOJİ: Guyton Tıbbi Fizyoloji PHYSIOLOGY: Medical Physiology (Guyton) İMMÜNOLOJİ: Roitt's Essential Immunology-2017-(Çeviri) Temel İmmünoloji-İmmün sistemin işlevleri ve bozuklukları-Abbas-2015 MİKROBİYOLOJİ: Koneman's Color Atlas And Textbook of Diagnostic Microbiology Türkçe Baskısı-2017 Tıbbi Mikrobiyoloji-Murray-2016 Tıbbi Mikrobiyoloji-Jawetz-2014 Lippincott'un Şekillerle Açıklamalı Derleme Ders Kitapları-Mikrobiyoloji FARMAKOLOJİ: -Kayaalp, O. (2012). Rasyonel Tedavi Yönünden Tıbbi Farmakoloji (13'üncü baskı). Ankara: Pelikan Tıp Teknik Yayıncılık. -Brunton, L., Knollman, B., Hilal-Dandan, R. (2021). Goodman and Gilman s The Pharmacological Basis of Therapeutics (14th edition). USA: McGraw and Hill Company. -Whalen, K., Radhakrishnan, R., Felid, K.(2018). Lippincott s Illustrated Reviews: Pharmacology (7th edition). USA: Lippincott Williams & Wilkins. -Katzung, B.G. (2020). Basic and Clinical Pharmacology (15th edition). USA: McGraw-Hill Companies. PHARMACOLOGY • Brunton, L., Knollman, B., Hilal-Dandan, R. (2021). Goodman and Gilman s The Pharmacological Basis of Therapeutics (14th edition). USA: McGraw and Hill Company. • Whalen, K., Radhakrishnan, R., Felid, K.(2018). Lippincott s Illustrated Reviews: Pharmacology (7th edition). USA: Lippincott Williams & Wilkins. • Katzung, B.G. (2020). Basic and Clinical Pharmacology (15th edition). USA: McGraw-Hill Companies. PATOLOJİ: Robbins Basic Pathology / [editors] Vinay Kumar, Abul K. Abbas, Jon C. Aster; artist James A. Perkins PATHOLOGY: Robbins Basic Pathology / [editors] Vinay Kumar, Abul K. Abbas, Jon C. Aster; artist James A. Perkins
References:	ANATOMİ: Öğrencilerin beceri uygulamalarına ilişkin ders notlarını okuyarak gelmeleri önerilir. Ayrıca; 1.Her Yönüyle Anatomi (Yasin Arifoğlu) 2.İnsan Anatomisi (Mustafa Sarsılmaz) 3.Fonksiyonel Nöroanatomi (Doğan Taner) 4.Anatomi 2. cilt (Kaplan Arıncı, Alaittin Elhan) 5.Gray's Anatomy (Susan Standring) 6.Atlas of Human Anatomy (Frank H. Netter) 7.Atlas of Anatomy-Head and Neuroanatomy (THIEME) 8.İnsan Anatomisi Atlası (Johannes Sobotta) ANATOMY: It is recommended that students come by reading the lecture notes on skill practices. Besides; 1.Gray's Anatomy (Susan Standring) 2.Atlas of Human Anatomy (Frank H. Netter) 3.Atlas of Anatomy-Head and Neuroanatomy (THIEME) 4.Atlas of Human Anatomy (Johannes Sobotta)

MİKROBİYOLOJİ:

*Enfeksiyon Hastalıkları ve Mikrobiyolojisi cilt 1-2 Prof. Dr. Ayşe Willke Topçu , Prof. Dr. Güner Söyletir , Prof. Dr. Mehmet Doğanay Nobel tıp Kitapevleri

*Temel Tıbbi Mikrobiyoloji Patrick R. Murray, Güneş Tıp Kitapevi

*Koneman's Color Atlas And Textbook of Diagnostic Microbiology Türkçe Baskısı Çeviri Editörleri Prof.Dr. Ahmet Başustaoğlu, Prof.Dr. Ayşe Dürdal Us, Hipokrat Kitapevi

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2.Textbook of pathology / Harsh Mohan, foreword Ivan Damjanov

3.Anatomic pathology : board review / Jay H. Lefkowitch

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*Trevor, A.J., Masters S.B. , Katzung B.G. (2019). Çeviri Editörü: Erden, B.F. Katzung ve Trevor Farmakoloji - Sınav ve Gözden Geçirme (11'inci baskı). USA: McGraw-Hill Companies.

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2.Fizyoloji (Berne)
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4. Lippincott Görsel Anlatımlı Fizyoloji
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3. Lippincott Illustrated Reviews: Physiology
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Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Program Outcomes																							

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1) When Istinye University Faculty of Medicine student is graduated who knows the historical development of medicine, medical practices, and the medical profession and their importance for society.				1	1	1	1	1	1	1	1	1	1	1									
2) knows the normal structure and function of the human body at the level of molecules, cells, tissues, organs and systems.				3	3	3	3	3	3	3	3	3	3	3									
3) is capable of systematically taking an accurate and effective social and medical history from their patients and make a comprehensive physical examination.																							

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
4) knows the laboratory procedures related to diseases; In primary care, the necessary material (blood, urine, etc.) can be obtained from the patient with appropriate methods and can perform the necessary laboratory procedures for diagnosis and follow-up or request laboratory tests.				1	1	2	2	2	1	1	3	2		3	3								
5) can distinguish pathological changes in structure and functions during diseases from physiological changes and can Interpret the patient's history, physical examination, laboratory and imaging findings, and arrive at a pre-diagnosis and diagnosis of the patient's problem.				3	3	3	3	3	3	3	3	3	3	3	3								

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
6) knows, plans and applies primary care and emergency medical treatment practices, rehabilitation stages.																							
7) can keep patient records accurately and efficiently, know the importance of confidentiality of patient information and records, and protects this privacy.																							
8) knows the clinical decision-making process, evidence-based medicine practices and current approaches.				2	2	2	2	2	2	2	2	2	2	2	2								

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
9) knows and applies the basic principles of preventive health measures and the protection of individuals from diseases and improving health, and recognizes the individual and/or society at risk, undertakes the responsibility of the physician in public health problems such as epidemics and pandemics.				1	1	1	1	1	1	1	1	1	1	1	1								
10) knows the biopsychosocial approach, evaluates the causes of diseases by considering the individual and his / her environment.				2	2	2	2	2	2	2	2	2	2	2	2								
11) is capable of having effective oral and/or written communication with patients and their relatives, society and colleagues.																							

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
12) knows the techniques, methods and rules of researching. It contributes to the creation, sharing, implementation and development of new professional knowledge and practices by using science and scientific method within the framework of ethical rules.				3	3	3	3	3	3	3	3	3	3	3	3								
13) can collect health data, analyze them, present them in summary, and prepare forensic reports.																							

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
14) knows the place of physicians as an educator, administrator and researcher in delivery of health care. It takes responsibility for the professional and personal development of own and colleagues in all interdisciplinary teams established to increase the health level of the society.				2	2	2	2	2	2	2	2	2	2	2	2								
15) knows employee health, environment and occupational safety issues and takes responsibility when necessary.																							
16) knows health policies and is able to evaluate their effects in the field of application.																							

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
17) keeps medical knowledge up-to-date within the framework of lifelong learning responsibility.				3	3	3	3	3	3	3	3	3	3	3	3								
18) applies own profession by knowing about ethical obligations and legal responsibilities, prioritizing human values and with self-sacrifice throughout own medical life.				2	2	2	2	2	2	2	2	2	2	2	2								

Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	When Istinye University Faculty of Medicine student is graduated who knows the historical development of medicine, medical practices, and the medical profession and their importance for society.	1
2)	knows the normal structure and function of the human body at the level of molecules, cells, tissues, organs and systems.	3
3)	is capable of systematically taking an accurate and effective social and medical history from their patients and make a comprehensive physical examination.	
4)	knows the laboratory procedures related to diseases; In primary care, the necessary material (blood, urine, etc.) can be obtained from the patient with appropriate methods and can perform the necessary laboratory procedures for diagnosis and follow-up or request laboratory tests.	3
5)	can distinguish pathological changes in structure and functions during diseases from physiological changes and can Interpret the patient's history, physical examination, laboratory and imaging findings, and arrive at a pre-diagnosis and diagnosis of the patient's problem.	3
6)	knows, plans and applies primary care and emergency medical treatment practices, rehabilitation stages.	

7)	can keep patient records accurately and efficiently, know the importance of confidentiality of patient information and records, and protects this privacy.	
8)	knows the clinical decision-making process, evidence-based medicine practices and current approaches.	2
9)	knows and applies the basic principles of preventive health measures and the protection of individuals from diseases and improving health, and recognizes the individual and/or society at risk, undertakes the responsibility of the physician in public health problems such as epidemics and pandemics.	1
10)	knows the biopsychosocial approach, evaluates the causes of diseases by considering the individual and his / her environment.	2
11)	is capable of having effective oral and/or written communication with patients and their relatives, society and colleagues.	
12)	knows the techniques, methods and rules of researching. It contributes to the creation, sharing, implementation and development of new professional knowledge and practices by using science and scientific method within the framework of ethical rules.	3
13)	can collect health data, analyze them, present them in summary, and prepare forensic reports.	
14)	knows the place of physicians as an educator, administrator and researcher in delivery of health care. It takes responsibility for the professional and personal development of own and colleagues in all interdisciplinary teams established to increase the health level of the society.	2
15)	knows employee health, environment and occupational safety issues and takes responsibility when necessary.	
16)	knows health policies and is able to evaluate their effects in the field of application.	
17)	keeps medical knowledge up-to-date within the framework of lifelong learning responsibility.	3
18)	applies own profession by knowing about ethical obligations and legal responsibilities, prioritizing human values and with self-sacrifice throughout own medical life.	2

Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Application	1	% 10
Presentation	1	% 10
Committee	6	% 40
Final	2	% 40
total		**% 100**
PERCENTAGE OF SEMESTER WORK		% 60
PERCENTAGE OF FINAL WORK		% 40
total		**% 100**