**T.C.**

**ATILIM UNIVERSITY MEDICAL FACULTY**

**EDUCATION IN 2024-2025 ACADEMIC YEAR**

**ACADEMIC CALENDAR**

**Laboratory Lessons:**

1. Determination of hemoglobin / Erythrocyte sedimentation rate / Bleeding, clotting time / Blood group determination (1 hour, Dr. Sarıkaya)
2. Preparation of peripheral blood smear, staining (1 hour, Dr. Aykanat)
3. Evaluation of peripheral blood smear (1 hour, Dr. Sarıkaya)
4. Tissue parasites (1 hour, Dr. Tülek, Dr. Usluca)
5. The thoracic wall (1 hour, Dr. Öktem & Dr. Brohi)
6. The heart and the pericardium (1 hour, Dr. Öktem & Dr. Brohi)
7. Cardiovascular system histology (1 hour, Dr. Aykanat )
8. Normal electrocardiogram (1 hour, Dr. Sarıkaya)
9. The mediastinum, thymus and the great vessels (1 hour, Dr. Öktem & Dr. Brohi)
10. The diaphragm (1 hour, Dr. Öktem & Dr. Brohi)
11. Clinical Skill: Blood pressure measurement (1 hour, Dr. Dursun & Dr. Sarıkaya)
12. Vascular and cardiac pathology (1 hour, Dr. Yurdakan Özyardımcı)
13. Determination of HDL cholesterol (Dr. Kılıç& Dr. Bulut)

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| **COMMITTEE NAME** | **STARTING DATE** | **COMPLETION DATE** |
| **MED 202** | 27.01.2025 | 04.04.2025 |

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|  | **MED 201** | **MED 202** | **MED 203** | **MED 204**  |
| **MEDICAL SKILL EXAM** |  | 04.04.2025 |  |  |
| **PRACTICAL EXAM** |  | 02.04.2025 |  |  |
| **COMMITTEE EXAM-1** |  | 24.02.2025 |  |  |
| **COMMITTEE EXAM-2** |  | 03.04.2025 |  |  |

**MED 202 CARDIOVASCULAR SYSTEM**

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| **PHASE II COORDINATOR** | Asst. Prof. Dr Badegül Sarıkaya |
| **CHAIR OF THE MED 202 COMMITTEE** | Asst. Prof. Dr Badegül Sarıkaya |
| **MED 202 COMMITTEE DATE RANGE** | 27.01.2025- 04.04.2025 |
| **ACADEMIC STAFF AT THE MED 202 COMMITTEE** | Prof. Dr. Necla TÜLEK - Medical MicrobiologyAssoc. Prof. Dr. Selma Usluca-Medical MicrobiologyProf. Dr. Ahmet Saltık- Public HealthProf. Dr. Yekbun ADIGÜZEL – BiophysicsProf. Dr. Çağla Sönmez-Medical BiologyProf. Dr. Nedret KILIÇ - Medical BiochemistryAsst. Prof. Dr. Melike EROL DEMİRBİLEK- Medical BiochemistryAsst. Prof. Dr. Onur Bulut- Medical BiochemistryProf. Dr. Gamze YURDAKAN ÖZYARDIMCI - Medical PathologyAssoc. Prof. Dr. Hale ÖKTEM – AnatomyAssoc. Prof. Dr. Ezgi BEKTUR AYKANAT – Histology & EmbryologyAssoc. Prof. Dr. Ersin SARIÇAM - CardiologyAssoc. Prof. Dr. Ali Doğan DURSUN – PhysiologyAssoc. Prof. Dr. Çiğdem Erol- Infectious Disease and Clinical MicrobiologyAsst. Prof. Dr. Recep Ali BROHİ – Anatomy Asst. Prof. Dr. Badegül SARIKAYA - PhysiologyAsst. Prof. Dr.Sami EREN– Medical PharmacologyAsst. Prof. Dr. Murat Can GÜNEY-CardiologyAsst. Prof. Dr. Uğur ŞAHİN – Hematology |
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**ACADEMIC STAFF** | **THEORETICAL LESSON TIME** | **PRACTICAL LESSON TIME** | **INTERACTIVE EDUCATION****TIME** | **TOTAL TIME** |
| **Anatomy** | 6 | 4 | 1 flipped class | 11 |
| **Histology and Embryology** | 6 | 2 | 1 (Flipped class) | 9 |
| **Medical Microbiology** | 13 | 1 | 2 (2 hours CBL) | 16 |
| **Infectious Disease and Clinical Microbiology** | 5 | - | - | 5 |
| **Medical Pharmacology** | 9 | - | - | 9 |
| **Medical Biochemistry** | 10 | 1 | - | 11 |
| **Medical Pathology** | 16 | 1 | - | 17 |
| **Physiology** | 23 | 4(1 hour Clinical Skill) | - | 32 |
| **Medical Biology** | 1 | - | - | 1 |
|  **Biophysics** | 13 | - | - | 13 |
| **Cardiology** | 2 | - | - | 2 |
| **Hematology** | 2 | - | - | 2 |
| **Problem Based Learning** | - | - | 6 |  |
| **TOTAL** | 105 | 13 | 10 | 128 |
| **CONTENT OF THE MED 202 COMMITTEE**  |
| Introduction to Cardiovascular System Committee, Functions, and properties of blood, Bone marrow, development (erytropiesis,trombopoez) and histology of blood cells, General physical properties of biophysical materials, solids and fluids, Fluid properties of blood, Erythrocytes, Hemoglobin and iron metabolism, Heme synthesis and porphyrias, Hemoglobin, Catabolism of heme and hyperbilirubinemias, Red blood cells diseases, Platelets; endothelium-platelet relationship, and hemostatic mechanism, Fluid & hemodynamic disorders, History taking and physical examination for hematopoietic system diseases, Diagnostic methods used in hematology and introduction to hematology laboratory, Blood parasites, Drugs Used in Coagulation Disorders, Preparation of peripheral blood smear, staining, Evaluation of peripheral blood smear, The thoracic wall, Approach to anemia in the adult patient, Diagnostic approach to lymphadonopathy and organomegaly, Blood parasites-2 -Leishmania, Chagasi, Trypanosoma, Microphylaria, Anaplasmosis, Staphylococcus and related Gram positive cocci, Arboviruses, Crimean Congo Haemorrhagic Fever, The heart and the pericardium, Development of heart and vessels; and conjenital malformations, vascular component of pharingeal apparatus, clefts, and pouches, Heart and vessel histology, The structure and innervation of cardiac muscle, Physiological properties of the heart muscle,cardiac electrophysiology and myocardial contraction, The heart's special impuls- electrical conduction system, The concept of preload in the heart and its effect on the stroke volume, Concepts of afterload, inotropy in the heart and its effect on stroke volume, Heart volume-pressure relationship, oxygen consumption, Heart cycle, heart sounds, The mediastinum, the great vessels and the posterior mediastinum, The basic principles of electrical potentials recorded from the body surface, Heart dipole and ECG, The diaphragm, Einthoven triangle , Streptococci and related diseases, Electrocardiogram, Bernoulli's Principle, Poiseuille's Law and its relation to the circulation dynamics, Symptomatology in heart diseases, Cardiac examination, Circulation Dynamics: Laplace's Law, transverse extensibility, surface tension, Arterial, capillary and venous circulation, Definitions and mechanism of Sepsis, Normal electrocardiogram, Cardiac output, Adrenoreceptor blockers, Microcirculation, Electrocardiogram, ECG and Rhytm Disorders, Antiarrhythmic Drugs, Local control mechanisms of blood flow regulation, Regulation of arterial blood pressure, Plasma lipid profile, Biochemistry of atherosclerosis, Causes and Findings of Sepsis, Treatment of Sepsis, Viral myocarditis agents microorganisms diagnosis and treatment, Endocarditis, Special circulations, Arteriosclerosis and atherosclerosis, Ischemic Heart Disease, Gram negative sepsis, Diagnostic tests in heart diseases, Vasculitis, Cardiomyopathies, Pericardial diseases, Valvular heart disease, Acute Coronary Syndromes, Disorders of lymphatics and blood vessels, veins, Cardiac & vascular neoplasms, Coronary artery disease, Drugs Used in Ischemic heart Disease, Catheter infection and biofilm, Hypertension Etiopathogenesis, Diagnosis of Hypertension and Blood Pressure Measurement, Drugs Used in Hypertension, Blood pressure measurement, Sectional and clinical anatomy, Heart Failure, Drugs Used in Heart Failure, Drugs Used in Dyslipidemia, Heart valve diseases, Imaging method in heart diseases |
| **MED 202 COMMITTEE AIM** |
| To understand the structure, components and functions of blood tissue, which has functions such as the transport of various substances between tissues, control of bleeding and coagulation; to learn the normal structure, function and hemodynamic properties of the circulatory system, the heart and the vascular system involved in pumping blood to tissues; to gain knowledge about the etiopathogenesis, pathology, symptoms and signs, prevention, diagnosis and treatment principles of disorders; to gain basic medical skills for the circulatory system. |
| **MED 202 COMMITTEE LEARNING OBJECTIVES** |
| Explains the functions of blood. Defines the contents, proportions, physical and functional properties of blood. Explains the content of plasma, and the functions of plasma proteins.Explains the morphological features and functions of erythrocytes. Defines the maturation steps of erythrocytes. Defines the definition and normal values of the parameters belonging to erythrocytes. Explains how erythrocyte surface antigens constitute A B O blood typing and Rh factor, explains the differences between Rh system and ABO system. Describes the structure, types, properties, synthesis, destruction of the hemoglobin molecule and products formed as a result of destruction. Explains the differences arising from the structure of hemoglobin and the clinical tables that may ocur. Explains hemolysis event and its causes, explains the steps of catabolism. Explains the transportation, storage and metabolism of iron.Explains the structural features and related functions of platelets. Defines the endothelium-platelet relationship. Describes hemostasis, explains its importance. Explains the coagulation mechanisms, defines extrinsic and intrinsic pathways. Explains the fibrinolytic system and its regulation by Protein C. Interprets the structure, electrical activity, electrophysiological features of the heart muscle and the relationship of these features with the heart's pump function.Explains the contraction mechanisms of the heart muscleExplains the heart's excitation systemsExplains the regulation of the heart study. Describes heart sounds and foci. Shows the cardiac cycle on the diagram, compares mechanical and electrical properties.Defines the principles of electrocardiography recording. Explains the normal electrocardiogram (ECG) components. Explains the electrophysiological basis underlying the formation of the normal ECG pattern, and recognizes the normal ECG wave, segment and intervals.Defines cardiac output and explains the factors affecting cardiac outputDescribes the functional properties of arteries, arterioles, capillaries, venules, veins. Interprets the flow-pressure-resistance relationship in the circulatory system, explains the cooperation of the heart and vascular system, the pressure-flow relationship in the vascular system, and the control mechanisms of microcirculation in ensuring proper tissue perfusion.Explains the neurogenic and hormonal mechanisms that function in the regulation of blood pressureDescribes fetal circulation Measures, and interprets hemoglobin levels, sedimentation rate, bleeding-clotting time. Detects blood groups.Prepares and stains the blood smear.Evaluates peripheral blood smear, leukocyte count, leukocyte formula.Draws ECG and calculates heart rate on ECG, evaluates heart rhythm and makes vector analysis.Explains the physiological basis of blood pressure measurement, measures blood pressure.Define the main components of peripheral bloodRecognizes all of the cellular components found in peripheral blood by light and electron microscopy to define the aplastic anemia.Defines the approximate abundance of various types of blood cells.Be familiar with the general process of hematopoiesis and discriminate between lymphoid and myeloid cell lineages.Describes the organization of the bone marrow.Be able to recognize megakaryocytes in the bone marrow and understand their function in platelet production to define the bleeding disorders.Be able to distinguish successive parts of the circulatory pathway, and explain how the structure of the vessel wall meets the functional needs that are present in each of the parts to define some diseases such as Deep vein thrombosis, Chronic Coronary Artery disease\*, Vascular malformation/ hemangioma.Describes how structural differences in capillaries influence the passage of diverse material across the endothelium.Recognizes features in the heart (such as cardiac muscle, valves, cardiac skeleton) that allow it to serve as a pump to define some diseases such as endocarditis, Heart valve diseases, congenital heart diseases, Myocarditis/cardiomyopathy, Pericardial diseases.Determines the bones related with thoracic skeletonDetermines the joints of the thoracic wall Caunts the types of the joints of the thoracic wallDetermines the related ligamentsDetermines the parts of pericardium, innervation and blood supplyDescribes clinical anatomy of pericardiumDescribes the external features of the heartDescribes the chambers, valves, great vessels and the pathway of blood flowIdentifies the anatomical structures of the four chambersSays the layers of the heart wall (endocardium, myocardium, pericardium)Describes the course and distribution of the coronary arteries and cardiac veinsDetermines the coronary dominance in regard to the posterior interventricular arteryDescribes the cardiac plexus and its contribution to heart innervation on cardiac myocardium, cardiac cycle, and coronary arteriesOutlines the conducting system of the heart, including the location and function of the SA node, AV node, AV bundle, and Purkinje fibersDescribes the boundaries of mediastinumDescribes the boundaries and contents of the superior, anterior, middle, posterior mediastinumDescribes the course of the thoracic part of the aorta, organizing its branches according to pattern of dispersal and parietal and visceral targetsDescribes the azygos venous system, explaining the pattern of tributaries draining the left and right intercostal veinsDescribes the major tributaries (trunks) of the thoracic duct, and the course of the thoracic duct through the posterior mediastinum.Describes the courses and major branches of the vagus nerves (CN X) in the thoraxDescribes the sympathetic trunks in the thorax. Descibes the parts of the diaphragmDescribes the attachments of the parts Determines the apertures and the levels of these apertures according to the vertebral columnCounts the structures passing from the aperturesDescribes the innervation and vessels of the diaphragmDescibes the diaphragm herniaUnderstands the structure of materials having different phases Understands the properties of biophysical materials Defines stress, strain, elastic and plastic deformation Defines viscosity Knows that blood is a non-Newtonian fluid Knows the factors affecting blood viscosity Defines pressure and the factors affecting pressure Understands fluid movement under pressure gradient Understands the nature of potential difference in the body Understands the working principle of a voltmeter and the meaning of potential difference Able to draw depolarization vectors Knows 12-lead ECG lead positions Identifies phases of heart contraction from an ECG reading Knows the axes of leads Calculates the heart axis using an ECG reading Determines the rate, rythm and axis from an ECG reading Knows the positions of bipolar limb leads Draws the recording of bipolar limb leads during a full cycle of heart contraction Understands the relation between three limb lead recordings Defines stroke volume Defines preload Knows the factors affecting preload Defines afterload, inotrpy and inotropic agents Knows the factors affecting the afterloadKnows the average pressure values in four chambers of the heart during each phase of the contractionKnows that the heart provides pressure energy to blood in ventricles Defines Frank-Starling law Understands the relation between contractility and stroke volume Knows the laws governing the fluid dynamics; i.e., continuity equation, Bernoulli’s principle Discriminates laminar flow and turbulent flow in terms of the forces involved Knows the factors affecting the Reynold’s number to estimate turbulence Knows that the blood pressure difference is the product of cardiac output and total circulatory resistance, i.e., Poiselle’s equation. Knows that cardiac output is the product of stroke volume and heart rate. Defines how the blood pressure and velocity change during circulation and identify the factors affecting blood pressure. Knows the average pressure values at different vessel types for a resting adult heart Defines the factors affecting vessel resistance Knows the importance of parallel branching in capillaries. Defines compliance and know the meaning of high/low compliant chamber Knows the relation among pressure, surface tension, wall thickness and radius (Laplace’s eqn)Knows that distensibility is related with compliance but they are not the same.Knows that veins are more distensible than arteries.Knows that pulmonary arteries are more distensible than systemic arteries.Knows autoregulation mechanisms of blood flow Describes the general characteristics of the genus Staphylococcus. Describes the significance of the virulence factors of Staphylococcus aureus. Identifies the main factors that affect arthropod-borne transmission and describe risk groups and exposure risks, and define the symptomsExplains the prevention and control of arthropod-borne diseasesDescribes signs, symptoms and transmission of Crimean-Congo Haemorrhagic Fever Explains the emergency approach Lists prevention and control measures, risky behaviours; and describe areas where CCHF is a public health concern.Names the clinically important species within the Streptococci genera and describe the diseases they typically produce. Understands streptococcic infectious diseases through the study of the general microbiology concepts of structure, growth and metabolism of streptococci and their interrelationship with humans.Describes the mechanisms of bacterial invasion of hosts and virulence factors.Explains the complications such as rheumatic fever, AGN. and preventive approach.Lists common agents. Defines candidemia. Identify risk factors.Explains the diagnosis and main principles of treatment.Explains the epidemiological factors, and underlying specific etiologics in particular patients Describes the clinical findings.Explains how laboratory procedues could distinguish between these various oganisms Explains preventive measures, prophylaxis.Defines bacteremia, sepsis, severe sepsis, schock and criteria for sepsis, septic shock. Reviews basic pathophysiology of sepsis. Recognizes the signs of sepsis Expains when to suspect sepsis in a patient presenting acutely as an emergency or in a hospital inpatient who suffers a sudden deterioration.Describes how to assess level of risk in patients with possible sepsis.Describes best practices in early detection and management of sepsisIdentifies optimal antibiotic therapy and adjunctive treatments for sepsisDescribes the most common infectious cause of myocarditis Describes the epidemiology and pathogenesis of coxsackievirus infections and othersLists the stages of biofilm formation and maturation.Explains the role of biofilms in chronic diseases/infections. Predicts conditions that would favor biofilm formation and where they might be found. Predict conditions that would favor catheter-related infections.Lists the common agents. Explain the patient management.Understands the burden of malaria in the World. Describes the plasmodium types and differences between them according to the structure, life cycle, pathogenesis and clinical diseases. Becomes familiar with signs and symptoms of malarial illness. How is malaria contracted, and where is this disease most commonly found. Understands the basic steps in the diagnosis and management of malaria. Explains the prevention and control of malaria. Classifies and describe the structure of the parasite. Explains the parasites’ life cycles. Discuss the relationship between each parasite and its host. Explains the sources of infection, pathogenesis, become familiar with clinical manifestations, methods of diagnosis, prevention and control.Recognises the importance of leishmaniasis in the country and around the World, How is leishmaniasis contracted, and where is this disease most commonly found. Classifies the parasite, describe the structure. Explains the parasites’ life cycles. Discusses the relationship between parasite and its host. Explains the sources of infection, pathogenesis, clinical manifestations methods of diagnosis, prevention and controlRealizes the importance of Chagas, African Sleeping Sickness and BabesiosisWhat are the transmission routes and epidemiological features of Chagas, African Sleeping Sickness and Babesiosis. Defines the structure of the parasite. Explains the life cycle of the parasite. Discusses the relationship between parasite and its host. Explains the sources of infection, pathogenesis, clinical symptoms, diagnostic methods, prevention and control methods.What are the tissue parasites, What are the transmission routes and epidemiological features. Defines the structure of the parasite. Explains the life cycle of parasite. Discusses the relationship between parasite and its host. Explains the sources of infection, pathogenesis, clinical symptoms, diagnostic methods, prevention and control methodsDefines bleeding, explains normal hemostasis, and describes thrombus development mechanisms, cells and products involved in thrombus development.Explains the coagulation mechanism.Defines emboli, arterial and venous thrombus differences, explains the special thrombus structures seen in the cardiovascular system.Explains the types of emboli and their development mechanisms. Describe the physiopathological features of disseminated intravascular coagulation.Defines infarction and its types.Describes the etiopathogenesis of shock and explain the relationship between its physiopathological features and clinical reflections.Defines red blood cell disorders, explains the classification of anemia according to the underlying mechanisms.Defines anemias according to their morphological appearance and clinical reflections.Defines common causes of hemolytic anemia and explains the physiopathological features of these disorders.Describes anemia due to decreased erythropoiesis and defines its etiopathogenetic features.Identifies the causes of red blood cell increase.Explains the etiopathogenetic features of special classifications of myeloid and histiocytic neoplasms.Defines ischemic heart disease and cardiac syndromes with clinical presentations.Explains the pathogenesis of acute plaque change.Defines the developmental mechanisms of angina pectoris and myocardial infarction.Describes myocardial response to ischemia and infarct patterns, explains complications with mechanisms.Defines morphological changes in cardiac syndromes.Describes the pathogenesis of arrhythmia and sudden cardiac death.Explains the features and development mechanisms of systemic and pulmonary hypertension.Describes the etiological and morphological features of rheumatic valve diseases.Explains the typical features of infectious endocarditis and non-infectious vegetations.Defines the concept of cardiomyopathy and myocarditis.Explains the differences between dilated and restrictive myocardiopathy.Explains myocarditis with its etiopathogenetic features.Explains arteriosclerosis and its subtypes.Defines the epidemiological features and risk factors of atherosclerosis and determines the effects of these factors on pathogenesis.Describes the main components of atherosclerosis pathogenesis and explain their relationships.Describes the morphology of atherosclerosis and defines the clinical consequences and developmental processes of atherosclerosis.Explains vasculitides and define their forms according to their etiopathogenesis.Defines the types of infectious and noninfectious vasculitisExplains the development mechanisms of noninfectious vasculitisDescribes the localization, etiopathogenesis and morphological features of special types of vasculitisExplains the concepts of Raynaud's phenomenon and myocardial vessel vasospasm.Defines the general features of varicosities in lower extremity and other areas.Describes inflammatory and obstructive pathologies seen in lymphatics and veins with their etiopathogenesis.Defines pericardial effusion and hemopericardium.Explains the etiopathogenetic features of pericardial inflammations.Defines common cardiac tumors.Explains the cardiac effects of noncardiac neoplasms.Describes the general characteristics of common benign and malignant vascular tumors and explains their etiopathogenetic mechanisms.Describes how free radicals are generated in the body.Defines free radical metabolism.Explains oxidative stress and what diseases it is associated with.Describes free radicals.Identifies various free radical detoxifying enzymes and antioxidants.Discusses the causes, consequences and biochemical basis of disorders/diseases associated with free radical metabolism briefly.Defines the biochemistry of atherosclerosis.Describes the increasing incidence of obesity and diabetes and its impact on atherosclerosis.Identifies the agents/factors as the main therapeutic intervention in atherosclerosis.Discusses the biochemical mechanism background of atherosclerosis at cell and tissue level.Explains diagnostic tests in heart diseasesDescribes the diagnosis of the underlying cardiac abnormalities with biochemical testing.Defines the biochemical pattern of diagnostic tests in cardiac diseases.Lists the major clinical applications of the adrenoceptor agonistsDescribes the pathophysiology of effort angina and vasospastic angina and the major determinants of cardiac oxygen consumption.Lists the strategies and drug targets for relief of anginal pain.Contrasts the therapeutic and adverse effects of nitrates, β blockers, and calcium channel blockers when used for angina.Contrasts the effects of medical therapy and surgical therapy of angınaDescribes the differences between HFrEF and HFpEF.Describes the proposed role of lipoproteins in the formation of atherosclerotic plaques.Describes the dietary management of hyperlipidemia. Explains the causes (genetic, developmental, environmental, autoimmune, neoplastic, etc.) and physiopathology of circulatory system disorders.Takes history of the patient presenting with circulatory system complaints using effective communicative skills and performs appropriate physical examination (inspection, basic auscultation, palpation and pulse evaluation, blood pressure measurement technique and evaluation, systemic examination).Basic principles of electrocardiography, rules for obtaining the correct ECG and understanding and interpretation of parameters in normal ECG Diagnoses heart rhythm disorders, performs emergency treatment and refers the patients to advanced health care unit appropriately (classification, symptoms, examination, diagnosis, treatment and follow-up)Understands the pathophysiology, etiology and systemic effects of hypertensionLearns the diagnosis of hypertension, risk stratification, and measurement and methods of blood pressureDiagnoses heart failure, applies prevention measures, performs emergency treatment, knows proper referral procedures and performs the primary health care level follow-up (diagnosis, classification, treatment, tracking)Concludes the diagnosis of angina pectoris and myocardial infarction, applies preventive measures, performs emergency treatment and refers the patients to advanced health care unit appropriately.Pre-diagnoses heart valve diseases preventive measures and refers the patients to advanced health care unit (diagnosis, treatment, for the problems of aortic, mitral, tricuspid, pulmonary valve physiopathology and follow-up). Selects and sorts the tests used in the diagnosis and monitoring of diseases of the circulatory system (electrocardiography, exercise electrocardiography, myocardial perfusion scintigraphy report, chest radiography, echocardiography report, computed tomography, ankle-brachial index measurement, vascular doppler ultrasound report, conventional angiography reports, electrophysiological work, describes full blood, biochemical tests) in appropriate order and interprets the results.   |
| RECOMMENDED BOOKS1. Bailey & Scott’s Diagnostic Microbiology (13th Edition); Patricia M. Tille; Elsevier Mosby, St. Louis, 2014.
2. Emery's Elements of Medical Genetics (15th Edition); Peter D. Turnpenny, Sian Ellard; Elsevier, Philadelphia, 2017.
3. Harper’s Illustrated Biochemistry (31st Edition); Robert K. Murray, David A. Bender, Kathleen M. Botham, Peter J. Kennelly, Victor W. Rodwell, P. Anthony Weil McGrawHill-Lange, 2018
4. Lippincott Illustrated Reviews: Biochemistry (7th Edition); Denise R. Ferrier; Lippincott Wilwims & Wilkins; Philadelphia, 2017.
5. Marks’ Basic Medical Biochemistry A Clinical Approach (5th Edition); Michael Lieberman, Alisa Peet; Wolters Kluwer, Philadelphia, 2018.
6. Teaching and Learning Communication Skills in Medicine (2nd Edition); Suzanne Kurtz,‎ Juliet Draper, Jonathan Silverman; Radcliffe Publishing, Abingdon, 2005.
7. Thompson & Thompson Genetics in Medicine (8th Edition); Robert L. Nussbaum, Roderick R. McInnes, Huntington F. Willard; ; Elsevier, Philadelphia, 2016.
8. Histology and Cell Biology: An Introduction to Pathology (4th Edition); Abraham Kierszenbaum Laura Tres, Elsevier Saunders, Philadelphia, 2015.
9. Katzung's Basic and Clinical Pharmacology (Ed. Todd W. Vanderah),16th Edition, McGraw Hill Lange, 2023.
10. Goodman and Gilman's The Pharmacological Basis of Therapeutics (Eds: L. Brunton,‎ B. Knollmann), 14th Edition, McGraw Hill, 2022.
11. Robbins Basic Pathology (10th edition); 2018 [edited by] Vinay Kumar, Abul K. Abbas, Jon C. Aster
12. Cell and Molecular Biology (2nd edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019.
13. Molecular Cell Biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016.
14. Molecular Biology of the Cell (6th edition); Bruce Alberts, W. W. Norton & Company, 2015.
15. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, McGraw-Hill Education, 2019.
16. Medical Microbiology (9th Edition); Murray, Rosenthal, Pfaller, 2020.
17. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases (9th Edition); Bennett, JE, Dolin R, Blaser MJ. Elsevier, 2019.
18. Lehninger Principles of Biochemistry (7th Edition), David L. Nelson, Michael M. Cox W H Freeman & Co, 2017.
19. Textbook of Biochemistry with Clinical Correlations (7th Edition); Thomas M. Devlin (Editor) John Wiley & Sons, 2011.
20. Integrative Medical Biochemistry: Examination and Board Review, 1st Edition Michael W. King Mc Graw Hill
21. Understanding pathophysiology First canadian Ed. 2018 by Elsevier Inc. Sue Huether; Kelly Power Kean; Mohamed ElHussein
22. Pathophysiology of Diseases: An introduction in clinical medicine 8 ed. 2019 by McGraw-Hill Education; Lange Inc. Gary D. Hammer, MD, PhD Stephen J. McPhee, MD
23. Pathophysiology: The biologic basis for diseases in adults and children 8th ed. 2019 by Elsevier Inc. Kathryn L. McCance, MS, PhD Sue E. Huether, MS, PhD Valentına L. Brashers, Neal S. Rote, PhD
24. Rapid Review Pathology, Fifth Edition 2019 by Elsevier, Inc. Edward F. Goljan, MD
25. Guyton and Hall Textbook of Medical Physiology, 14th edition, 2021 by Elsevier Inc.
26. Physiology; L. S. Costanzo; 6th edition; 2018 by Elsevier, Inc.
27. Ganong’s Review of Medical Physiology, 26th Edition, 2019 by McGraw-Hill Education.
28. Vander’s Human Physıology, The Mechanisms of Body Function, 16th Edition, 2023 by McGraw Hill LLC.
29. Gunn A, Pitt SJ, Parasitology An Integrated Approach, Wiley, 2th Edition, 2022.
30. Apurba S Sastry, Sandhya Bhat, Essentials of Medical Microbiology, 3th Edition, JAYPEE BROTHERS Medical Publishers, New Delhi | London, 2021.
31. Netter’s Infectious Diseases, ELAINE C. JONG, DENNIS L. STEVENS, Elsevier, 2th Edition, 2022.
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| **MED 202 COMMITTEE EXAM WEEK** |
| **DATE** | **EXAM NAME** | **EXAM HOUR** |
| 24.02.2025 | MED 202 Committee Exam-1 | 09:30 – 12:20 |
| 04.04.2025 | Medical Skill Exam | 09:30 – 13:20 |
| 02.04.2025 | Practical Examination | 13:30 – 16:20 |
| 03.04.2024 | MED 202 Committee Exam-2 | 09:30 – 12:20 |
| **Teaching Methods and Techniques** |

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|  [x]  Lecture |  [x]  Case based learning | [ ] Case discussion | [ ] Student presentation |
| [x]  Discussion | [x]  Problem based learning | [ ] Project | [ ] Homework |
| [ ] Role playing | [ ]  Experiment | [ ] Report preparing | [x]  Self Learning |
| [x] Laboratory practice | [x] Flipped Class |  |  |

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| **Evaluation Method** | Committe Exam-1 (30%), PBL (5%), Medical Skill (5%), Practical Exam (Anatomy 4%), Flipped Class (2% + 2%), Committe Exam-2 (50%), Quiz (1% + 1%) |
| **Language of lectures, practicals and all other applications** | English |