MED702: Block 6 | Course Objectives

**Cardiovascular**

06CVS001  Describe the epidemiology, risk factors and pathogenesis of atherosclerosis and how the vascular endothelial and smooth muscle cells respond to atherosclerotic injury.

06CVS002  Define the pathologic vascular changes in hypertension, both the benign and malignant forms, end-organ sequelae, and the criteria for diagnosis of disease stages.

06CVS003  Explain the hemodynamic and regulatory (renal, neural and endocrine) alterations associated with the essential and secondary forms of hypertension.

06CVS004  Describe the role of the endothelium in the control of vasoconstriction and vasodilation, and the influence of plasma factors on this process.

06CVS005  Identify the etiologies and pathological consequences of various types of aneurysms.

06CVS006  Delineate the pathology, pathophysiology, major causes, clinical presentations, complications and prognosis of ischemic heart disease.

06CVS007  Delineate the pathology, pathophysiology, and major causes of heart failure.

06CVS008  Rationalize the selection of the pharmacologic agents used in the treatment of cholesterol and hypertension and explain the mechanisms of action, and major adverse effects of each of the classes of drugs used in these treatments.

06CVS009  Describe the etiology, epidemiology, clinical presentation, diagnosis, pathogenesis, complications, prevention and treatment of viral cardiovascular infections.

06CVS010  Explain the standard criteria for determining which current procedure(s) would be utilized to reperfuse ischemic areas of myocardium and recognize the complications of various reperfusion procedures.

06CVS011  Describe the clinical features, evaluation, management and prognosis of heart failure.

06CVS012  Differentiate the etiology, clinical features and basic management of the primary myocardial diseases.

06CVS013  Describe the pathophysiology, identify the etiology, and describe the clinical features of pericardial disease.

06CVS014  Correlate the pathology and etiology, discern unusual presentations, and distinguish the varied pathophysiology of valvular heart disease.

06CVS015  Describe the EKG patterns associated with cardiac arrhythmias, abnormal conduction, cardiac ischemia and hypertrophy.
06CVS016  Rationalize the selection of the pharmacologic agents used in the treatment of heart failure and explain the mechanisms of action, and major adverse effects of each of the classes of drugs used in these treatments.

06CVS017  Describe the common clinical and pathologic features of acute and chronic venous and lymphatic diseases.

06CVS018  Describe the common vascular neoplasms.

06CVS019  Describe the predisposing factors and causative agents associated with infective endocarditis and the extracardiac manifestations of the disease.

06CVS020  Discuss the antibiotic treatment strategies in the management of bacterial endocarditis.

06CVS021  Describe the embryological basis, anatomic abnormalities, basic hemodynamics, changing profile in adults, and long-term complications of congenital heart disease.

06CVS022  List the tumors most likely to involve the heart and pericardium and describe their characteristics and morphologic features.

06CVS023  Describe the pathophysiology, immunogenesis, clinical findings of the vasculitis disease groups.

06CVS024  Discuss the pharmacological effects and use of vasodilators, vasopressors and inotropes.

06CVS025  Rationalize the selection of the pharmacologic agents used in the treatment of angina and explain the mechanisms of action, and major adverse effects of each of the classes of drugs used in these treatments.

06CVS026  List the tumors most likely to involve the heart and pericardium and describe their characteristics and morphologic features.

06CVS027  Identify how acute rheumatic fever can lead to rheumatic heart disease.

**Hematology**

06HEM001  Explain the origin of blood cells and list the sequential sites of cellular production and development from the fetus through the adult, contrasting medullary and extramedullary hematopoiesis.

06HEM002  Describe the etiology, pathogenesis, structural and functional manifestations of microcytic and normocytic anemia.

06HEM003  Describe the etiology, pathogenesis, structural and functional manifestations of megaloblastic anemia.

06HEM004  Describe the etiology, pathogenesis, structural and functional manifestations of the various hemolytic anemias (hemoglobinopathies, immune and nonimmune hemolytic anemias).

06HEM005  Identify normal red blood cell morphology and generate a differential diagnosis based on abnormal RBC shapes and inclusions.

06HEM006  Describe the pathophysiology, presentation, differential diagnosis, management and epidemiology of the primary infectious diseases that result in lymphadenopathies.
06HEM007 Describe the pathophysiology, presentation, differential diagnosis, management and epidemiology of microbial infections of blood cells.

06HEM008 Describe the theories of the basic pharmacology (mechanism of action, pharmacokinetic, and major adverse effects) of the colony-stimulating factors and agents used in the treatment of anemias.

06HEM009 Describe the first-line drug regimens used to treat tuberculosis and their mechanisms of action, dosing and the essential monitoring of their possible adverse effects.

06HEM010 Describe the HIV replication life cycle and the CDC recommended antiretroviral pharmacological interventions which target specific sites in the replication of HIV.

06HEM011 Identify the clinical presentation and significance of benign leukocyte disorders.

06HEM012 Classify lymphomas according to the working formulation with specific attention to small lymphocytic lymphoma, follicular lymphoma, diffuse large B cell lymphoma, mantle cell lymphoma, MALT lymphoma, lymphoblastic lymphoma, and small noncleaved B-cell (Burkitt) lymphoma.

06HEM013 Classify Hodgkin's Disease subtypes according to their histopathologic features.

06HEM014 Classify acute myelogenous and acute lymphoblastic leukemias according to their clinical and laboratory features.

06HEM015 Outline differences distinguishing acute myelogenous leukemia and acute lymphoblastic leukemia versus chronic myelogenous and chronic lymphocytic leukemia.

06HEM016 Classify myelodysplastic syndromes and list their clinical signs and symptoms.

06HEM017 Classify chronic myeloproliferative disorders and list their clinical signs and symptoms.

06HEM018 Identify common parameters and illustrate overlapping features that distinguish between the chronic lymphoproliferative disorders using clinical, laboratory and immunologic criteria.

06HEM019 Compare and contrast the morphology of various plasma cell dyscrasias.

06HEM020 Characterize the common inherited and acquired coagulation disorders.

06HEM021 Differentiate the role of platelets from plasma coagulation factors in blood clotting. Include an analysis of the role of medications on platelet function.

06HEM022 Review the causes of thrombocytopenia and thrombocytosis.

06HEM023 Describe the theories of the basic pharmacology (mechanism of action, pharmacokinetic, and major adverse effects) of agents used in the treatment of hematologic malignancies.

**Pulmonary**

06PUL001 Differentiate hypoxemia from hypercarbia using arterial blood gases and describe their role in respiratory control.

06PUL002 Identify the structures and functions of the respiratory system as it relates to pulmonary function.
06PUL003 Describe dichotomous branching of the bronchial tree, bronchopulmonary segments, and their significance.

06PUL004 Describe the concept of dynamic closure of the airways.

06PUL005 Explain the role of pulmonary surfactant in lung compliance, elasticity and hyaline membrane disease.

06PUL006 Describe the respiratory tract defense mechanism, including the anatomical, mechanical, chemical and microbial barriers to lung injury and disease.

06PUL007 Describe the causes and explain the spectrum of clinical findings in pulmonary embolism and infarction. Discuss the clinical course of each, including possible consequences.

06PUL008 Describe the embryological basis, anatomic abnormalities, and long-term complications of congenital lung conditions.

06PUL009 Describe the pathophysiology, presentation, differential diagnosis, management and epidemiology of bacterial respiratory infections.

06PUL010 List the risk factors, signs and symptoms, therapy and potential complications of lobar, broncho and aspiration pneumonia.

06PUL011 Identify how acute rheumatic fever can lead to rheumatic heart disease.

06PUL012 Describe the causes and explain the spectrum of clinical findings in pulmonary edema and acute respiratory distress. Discuss the clinical course of each, including possible consequences.

06PUL013 Describe the epidemiology, morphological features, pathophysiology and clinical presentations of obstructive lung disease.

06PUL014 Describe the etiology, morphological features, pathophysiology and explain the spectrum of clinical findings in pneumoconiosis.

06PUL015 Identify the medications, indications and explain the mechanism of action of the drugs used in the management of obstructive pulmonary diseases including beta-agonists, anticolinergic agents, and corticosteroids.

06PUL016 Describe the pharmacologic options, the mechanism of antibacterial activity, relative utility and adverse reactions in the management of the various classes of antibiotics used in the treatment of respiratory infections.

06PUL017 Describe the epidemiology, morphological features, pathophysiology and related clinical presentation of restrictive lung disease and the specific conditions which are included in this category.

06PUL018 Discuss the etiology, pathogenesis, gross appearance, histopathology, clinical course, and the route of metastasis of tumors of the lung.

06PUL019 Evaluate the work-up of a pulmonary nodule/mass lesion and list the differential diagnosis for such a lesion.

06PUL020 Differentiate between obstructive and restrictive lung disease based on pulmonary function tests.
06PUL021 Correlate the etiology, pathologic findings and clinical symptoms of major pleural diseases.

06PUL022 Describe the clinical manifestations and diagnosis of the diseases of the lung that are mediated by immunological mechanisms.

06PUL023 Explain the role of pulmonary disease in the production of pulmonary hypertension.

06PUL024 Explain the etiology and pathophysiology of blood borne zoonotic diseases.

06PUL025 Describe the pathophysiology, presentation, differential diagnosis, management and epidemiology of viral respiratory infections.

Clinical Skills

06CSK001 Perform the Tier One and Tier Two level Cardiovascular, Pulmonary and Abdominal exam for a summative evaluation at the end of the block (passing grade ≥ 80%)

06CSK002 Document a patient encounter utilizing the case write-up, progress note.

06CSK003 Identify the normal and basic abnormal finding on an electrocardiogram.

06CSK004 Describe acid-base abnormalities on arterial blood gases.

06CSK005 Interpret basic pulmonary function tests.

06CSK006 Describe the steps in the procedures of phlebotomy and venous access.

06CSK007 Discuss the basic parameters physicians must adhere to in a medical practice.

Patient Wrap-Up

PWU-SEI001 Observe and reflect on the patient’s experience with disease and the ways in which disease impacted the patient’s occupation, finances, and family.

PWU-SEI002 Observe and reflect on patient’s experience with the healthcare system.

PWU-SEI003 Observe and reflect on the coping skills used by the patient.

PWU-DPR001 Observe and evaluate the professional values exhibited by the physician.

PWU-DPR002 Observe and evaluate the communication skills of the physician.

PWU-DPR003 Observe and evaluate the patient-centeredness exhibited by the physician.

PWU-CSK001 Observe and evaluate the clinical reasoning skills exhibited by the physician.

PWU-CSK002 Apply basic science concepts to patient diagnoses and treatment.

Patient-Centered Learning (PCL)

PCL-CSK001 Demonstrate the ability to define and solve clinical problems based on a patient case.

PCL-CSK002 Demonstrate the ability to apply knowledge of basic sciences to clinical manifestations and presentation in a patient case.
PCL-CSK003 Demonstrate the ability to generate hypotheses based on the clinical presentation and underlying pathogenesis of disease in a patient case.

PCL-PTE001 Demonstrate the ability to actively listen to and reflect on information presented or discussed in learning objectives by other students.

PCL-PTE002 Demonstrate the ability to deliver concise, clear, scientifically-based presentations or discussions of learning objective topics.

PCL-PTE003 Demonstrate the ability to display knowledge of subject area in learning objective presentation that is beyond information covered in presentation or discussion.

PCL-PIF001 Demonstrate the ability to generate learning objectives based on deficiencies in the student's understanding of a patient case.

PCL-PIF002 Demonstrate the ability to gather evidence-based information from multiple resources that is relevant and sufficient to address learning issues generated from a patient case.

PCL-PIF003 Demonstrate responsibility to team through leadership and fulfillment of group duties.

PCL-PIF004 Demonstrate ability to assess learning needs, strengths, and limitations.

PCL-PIF005 Demonstrate ability to respond appropriately to feedback.

PCL-PIF006 Demonstrate ability to treat others in team with respect, show openness to different views, and discuss differences non-judgmentally.

PCL-PIF007 Demonstrate effort to continuously strive for excellence in all activities.