MED 3005: INTEGRATION OF BASIC SCIENCES TO CLINICAL SCIENCES II		
Course Date	November 2-27, 2020	
Exam Dates	Theoretical Exam: Nov 26, 2020	
Course Coordinator:	FATİH ÖZDENER	
Academic Unit	**Academic Staff**	**Theoretical hours**
Clinical Biochemistry	Özlem Unay, Assist. Prof. Erdem Yılmaz, Assist. Prof.	4
Clinical Genetics	Timuçin Avşar, Assist. Prof.	2
Clinical Microbiology	Orhan Cem Aktepe, Prof. Gülden Çelik, Prof. Sibel Ergüven, Prof.	6
Clinical Pathology	Özlem Yapıcier, Prof. Ahmet Midi, Prof.	8
Clinical Pharmacology	Fatih Özdener, Assist. Prof. Zülfiye Gül, Assist. Prof.	14
Clinical Histology	Yasemin Canıllıoğlu, Assist Prof. Dila Şener, Assist Prof.	2
Public Health	Melike Yavuz, Assist. Prof.	1
Research Methodology	Serdar Durdağı, Prof. Melike Yavuz, Assist. Prof. Petek Eylül Taneri, Assist. Prof.	9
TOTAL		46

COURSE AIM:

The aim of this course is to provide the integration of basic sciences with the most common pediatric diseases.

LEARNING OUTCOMES:

At the end of this lesson, the student will be able to:		
DEP.	**TOPIC**	**LEARNING OUTCOMES**
CLINICAL BIOCHEMISTRY	Screening programs in childhood (T-1)	1. Describe the newborn screening program which is held by Health Ministry of Turkey 2. List the diseases which are included in newborn screening program 3. Name the alternative tests for newborn screening program
	Cystic Fibrosis (T-1)	1. Explain the biochemical basis of cystic fibrosis 2. List the tests used for diagnosis of cystic fibrosis
	Cyanotic and acyanotic congenital heart diseases (T-1)	1. Define the biochemical changes in cyanotic and a-cyanotic congenital heart diseases. 2. Explain the laboratory changes of cyanotic and a-cyanotic congenital heart diseases.
	Gastroenteritis (T-1)	1. Explain the biochemical aspect of gastroenteritis 2. List the clinical laboratory tests used for gastroenteritis

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CLINICAL GENETİCS	Genetic testing for childhood disorders (T-1)	1. List and explain the genomic tools for diagnosis of pediatric disorders 2. Compare the technologies in detection of chromosomal changes 3. List the important childhood disorders and their associated gene/chromosomal variants.

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CLINICAL MICROBIOLOGY	Skin & Soft tissue Infections (T-1)	1. List the main group of microorganisms responsible from skin and soft tissue infections 2. Explain the pathogenesis 3. List the main methods in the laboratory diagnosis 4. List the main advantages and disadvantages of the methods and interpretation of the results 5. List the preventive measures and the routine recommended antimicrobial treatment
	Superficial Mycoses / Dermatophytosis (T-1)	1. List the main group of microorganisms responsible from Superficial Mycoses / Dermatophytosis 2. Explain the pathogenesis 3. List the main methods in the laboratory diagnosis 4. List the main advantages and disadvantages of the methods and interpretation of the results 5. List the preventive measures and the routine recommended antimicrobial treatment
	Hepatitis (T-1)	1. List the main group of microorganisms responsible from Hepatitis especially Hepatitis viruses 2. Explain the pathogenesis 3. List the main methods in the laboratory diagnosis

		4. List the main advantages and disadvantages of the methods and interpretation of the results 5. List the preventive measures and the routine recommended antimicrobial treatment
	CNS Infections (T-1)	1. Recall the anatomical structure 2. List the main group of microorganisms responsible from central nervous system infections 3. Explain the pathogenesis 4. List the main methods in the laboratory diagnosis 5. List the main advantages and disadvantages of the methods and interpretation of the results 6. List the preventive measures and the routine recommended antimicrobial treatment
	Common Parasitosis (T-1)	1. List the main group of microorganisms responsible from common parasitosis 2. Explain the pathogenesis 3. List the main methods in the laboratory diagnosis 4. List the main advantages and disadvantages of the methods and interpretation of the results 5. List the preventive measures and the routine recommended antimicrobial treatment

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CLINICAL PATHOLOGY	Growth and development Lecture 1: Immunization/Nutrition/Malnutrition Lecture 2: Puberty Precocious/ Puberty with Delay (T-1)	1. Describe basic mechanisms of immunization. 2. Explain the consequences of nutrition deficiency. 3. Describe definition and clinical manifestations of malnutrition. 4. Explain malnutrition caused diseases. 5. Explain underlying mechanisms and clinical presentation of rickets disease. 6. Explain underlying mechanisms and clinical presentation of puberty precocious and pubertal delay.
	Respiratory diseases Lecture 1: Disorders of upper/lower respiratory tract Lecture 2: ARDS/Cystic fibrosis/SIDS (T-1)	1. Describe the chest wall dynamics, metabolic characteristics, immunologic incompetence, and physiologic control of respiration. 2. Explain the disorders of the upper airways with clinical manifestations, etiology, pathophysiology and symptoms. 3. Describe managements and treatment of upper airway infections. 4. Get through the disorders of the lower airways with clinical manifestations, etiology, pathophysiology and symptoms. 5. Describe managements and treatment of the the lower airway disorders including acute respiratory distress syndrome (ARDS), cystic fibrosis, sudden infant death syndrome (SIDS).
	Cardiovascular and Hematological Diseases Lecture 1: Congenital Heart Diseases Lecture 2: Anemia (T-1)	1. Get through the congenital heart diseases. 2. Explain the clinical findings of congenital heart diseases and those who need urgent intervention. 3. Describe the pathogenesis and clinical findings of hemoglobinopathies, anemia and bleeding diathesis in childhood.
	Infectious Diseases Lecture 1: Infections of urinary tract and meninges/Diarrhea Lecture 2: Febrile illness with skin rashes (T-1)	1. Get through the most common causes of urinary tract infections 2. Describe the mechanisms and etiologic factors of acute diarrhea 3. Get through the most common microorganisms in children responsible for meningitis 4. Describe the morphologic, clinical findings and consequences of meningitis 5. Explain the disorders seen with rash in children

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CLINICAL PHARMACOLOGY	Growth retardation and hypogonadism (T-1)	1. Describe the pharmacotherapy of GH deficiency 2. Describe the mechanism of action of somatropin 3. Identify the appropriate formulations of testosterone for replacement therapy in a boy with hypogonadism 4. Describe the mechanism of action of testosterone 5. Describe how androgens affect bone mineral density 6. Describe the appropriate therapy for treating infertility in men with hypogonadotropic hypogonadism 7. Explain the role of FSH in stimulating spermatogenesis 8. Describe the treatment for erectile dysfunction 9. Describe the contraindications for PDE5 inhibitors
	Acromegaly (T-1)	1. Describe the pharmacology of somatostatin analogues 2. Describe the molecular mechanism of action of octreotide 3. Describe the pharmacology of dopamine agonists used in the treatment of acromegaly and prolactinoma 4. Describe the mechanism of development of nausea and vomiting as adverse effects of dopamine agonists 5. Describe the common adverse effects of octreotide 6. Describe the mechanism of action of pegvisomant 7. Identify the sign that cannot be reversed in acromegalic patients undergoing appropriate therapy
	Cardiogenic shock (T-1)	1. Describe the most appropriate emergency therapy for cardiogenic shock 2. Describe the action caused by low dose of dopamine 3. Explain the main pharmacokinetic reason for the administration of dopamine by IV infusion 4. Calculate the time needed to reach the steady-state plasma concentration of dopamine given by IV infusion 5. Calculate the patient's increase in stroke volume after dopamine administration 6. Calculate the change in cardiac oxygen consumption knowing the patient's systolic blood pressure and the heart rate 7. Describe the molecular mechanism of action dobutamine 8. Identify the hemodynamic parameter that mediates the increase in urine output after dopamine infusion in a patient with cardiogenic shock
	Infective Endocarditis (T-1)	1. Explain the mechanism of action of penicillin 2. Identify the activity spectrum of penicillin G 3. Identify the site of action of vancomycin 4. Explain the mechanism of action of vancomycin 5. Identify the activity spectrum of vancomycin 6. Describe the adverse effects of vancomycin 7. Explain the mechanism of action of clindamycin
	Acute Lymphoblastic Leukemia (T-1)	1. Describe the phases of ALL treatment 2. Identify the most likely mechanism of anticancer action of vincristine 3. Identify a common adverse effect of vincristine 4. Explain the mechanism of action of asparaginase 5. Identify a frequent, and sometimes serious adverse effect of asparaginase 6. Identify the drug administered intrathecally to children with ALL for prevention of leukemic relapse

		7. Identify the most likely cause of metabolic abnormalities that occurred soon after starting induction chemotherapy for acute lymphoblastic leukemia 8. Describe the mechanism of action of rasburicase 9. Describe the mechanism of action of sevelamer
	Human Immunodeficiency Virus Infection (T-1)	1. Explain the mechanism of action of azoles 2. Identify the appropriate duration of HAART therapy in a patient diagnosed with AIDS 3. Identify the antiviral drug class that includes both emtricitabine and tenofovir 4. Identify the step of the viral cycle specifically inhibited by emtricitabine and tenofovir 5. Identify a rare but potentially lethal adverse effect that can be caused by nucleoside/nucleotide reverse transcriptase inhibitors 6. Identify a step of the viral cycle specifically inhibited by lopinavir and ritonavir 7. Explain the reason for the association of ritonavir with other protease inhibitors 8. Identify the enzyme specifically inhibited by raltegravir
	Urinary tract infection (T-1)	1. Identify the two enzymes specifically inhibited by the trimethoprim-sulfamethoxazole combination 2. Explain the mechanism of resistance to sulfonamides 3. Explain the mechanism of action of fluoroquinolones 4. Explain the interaction between antacids and fluoroquinolones 5. Identify a serious adverse effect of fluoroquinolones 6. Identify the mechanism of action of meropenem 7. Identify the correct activity of carbapenems

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PUBLC HEALTH	Childhood Screening Programs in Turkey	1. List screening programs carried out in childhood in Turkey 2. List the diseases diagnosed with screening programs 3. Explain the importance of timely screening

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CLINICAL HISTOLOGY	Fetal Status Assessing (T-1)	1. Clinical use of gestational age term and its importance. 2. Explain the fetal age detection criteria. 3. Identify maternal, fetal and environmental factors influencing fetal growth with the associated cases. 4. Importance and aim of fetal status assessment. 5. Explain the fetal status assessing procedures related to cases.
	Histological and embryological approach to respiratory distress syndrome (T-1)	1. Explain the developmental stage of the respiratory system, briefly. 2. Explain lung compliance and the role of surfactant, 3. Describe the primary developmental lung abnormalities that can cause respiratory distress in the neonate 4. Describe the histological changes in respiratory distress disease in the neonate