

<b>COURSE INFORMATION</b>					
<b>Course Title</b>	<i>Code</i>	<i>Semester</i>	<i>L+P+L Hour</i>	<i>Credits</i>	<i>ECTS</i>
Clinical Pharmacology (Clinical Clerkship)	MED 513	Phase 5 / 9-10	30	3	3*

\* ECTS credits are the university credits of the courses in Yeditepe University, Faculty of Medicine, Undergraduate Medical Education Program

<b>Prerequisites</b>	The student that joins this course, should completed Phase 1, 2, 3 and 4 courses of medical faculty.
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<b>Language of Instruction</b>	English
<b>Course Level</b>	Second Cycle including First Cycle Degree (One Tier Programme)
<b>Course Type</b>	Compulsory
<b>Course Coordinator</b>	Prof. Dr. Ece Genç
<b>Instructors</b>	Emine Nur Özdamar MD Assist. Prof. Ece Genç, PhD Cenk Andaç MD Assist. Prof. Ayşe Gelal, MD Prof. Volkan Aydın MD Fatma İşli MD
<b>Assistants</b>	None
<b>Goals</b>	The main purpose of this program is to discuss the necessity of training for rational pharmacotherapy decision and help students develop their way to choose a drug/treatment among many other alternatives by comparing them in terms of efficacy, safety, suitability and cost. We also aim to help students to learn how to write a "good prescription" and "how to use new drugs" during their medical carrier.
<b>Content</b>	The introductory session will explain why students should develop their own list of P-drugs and the principles of drug selection and how to use them in practice. The following modules will introduce how to choose personal selection of drugs (P-drugs), and how to prescribe P-drugs. Then, by keeping in mind that students have chosen P-drugs for an imaginary, standard patient with a certain condition, using the criteria of efficacy, safety, suitability and cost, they will exercise how to treat a patient with their P-drugs.

<b>Learning Outcomes</b> <i>At the end of this clerkship, the student should be able to</i>	<b>Programme Learning Outcomes</b>	<b>Teaching Methods</b>	<b>Assessment Methods</b>
1. <b>define</b> patient's problem	1.1.2, 1.1.4	1, 2, 3, 9, 12	A
2. <b>list</b> aims of therapy	1.1.9	1, 2, 3, 9, 12	A
3. <b>categorize</b> effective drug groups	1.1.9	1	A
4. <b>discuss</b> personal drugs	1.2.1	1,2,3	A
5. <b>determine</b> "proper" drug according to certain criteria	2.5.2	1,2,3	A
6. <b>conduct</b> preparation of personal formulary	2.5.2	1,2,3	A
7. <b>enhance</b> prescription writing skills.	1.2.1	1,3,9,12	A
8. <b>use</b> the right drug at the right dose at appropriate intervals with a special attention to economic aspects of therapy	1.2.2, 1.2.3	1,3,9,12	A

<b>Teaching Methods:</b>	1: Lecture, 2: Question-Answer, 3: Discussion, 9: Simulation, 12: Case Study
<b>Assessment Methods:</b>	A: Testing B: Presentation C: Homework

<b>COURSE CONTENT</b>		
<b>Days</b>	<b>Topics</b>	<b>Study Materials</b>
	Introduction to the clerkship: a) learning principles and procedures; b) Rational drug use principles; c) Prescription writing.	Katzung, B.G., Masters S.B. and Trevor, A.J. eds. Basic and Clinical Pharmacology, 15 <sup>th</sup> ed. McGraw Hill, 2021.
1	1. Rational drug use 2. Personal drugs /introduction to "MAUA" forms 3. Antihypertensive drugs: Introduction to reference materials	
2	Essential Hypertension	#2
3	Solving case studies for essential hypertension, acute bacterial rhinosinusitis	#3, #4
4	Solving case studies for acute bacterial rhinosinusitis	
5	Urinary tract infections	#5, #6
6	Solving case studies for urinary tract infections	

<b>NCC 2014 – Essential Medical Procedures (National Core Curriculum)</b>	<b>Performance Level</b>
Rational Drug Use	3

<b>RECOMMENDED SOURCES</b>	
<b>Textbook &amp; other Resources</b>	<ol style="list-style-type: none"> <li>1-Katzung, B.G., Masters S.B. and Trevor, A.J. eds. Basic and Clinical Pharmacology, 15<sup>th</sup> ed. McGraw Hill, 2021.</li> <li>2-Williams, B. et al.2018 ESC/ESH guidelines for the managemet of arterial hypertension, European Heart Journal, 1-98 (2018).</li> <li>3-Aring, A.M, and Chan, M.M.: Current Concepts in Adult Acute Rhinosinusitis, Am Fam Physician. 94(2):97-105 (2016).</li> <li>4-Chow, A.W. et al.IDSA Clinical Practice Guideline for AcuteBacterial Rhinosinusitis in Children and Adults, CID 54:72-112(2012).</li> <li>5- Colgan, R. and Williams, M., Diagnosis and Treatment of Acute Uncomplicated Cystitis, American Family Physician 84:771-776 (2011).</li> <li>6. Gupta, K. et al. International Clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritisin women: A 2010 update by the infectious diseases society of America and the European society for microbiology and infectious diseases. CID, 52: 103-120, (2011).</li> </ol>
<b>Additional Resources</b>	Lecture notes

<b>ASSESSMENT</b>		
<b>IN-TERM STUDIES</b>	<b>NUMBER</b>	<b>PERCENTAGE</b>
<p><i>Essay Questions in Objective Structured Clinical Exam Station (OSCE)-A</i></p> <p>During the internship, three indications are studied according to the international treatment guidelines. For the exam, a case is prepared among these three indications. Four theoretical questions (20 points each) are asked as following:</p> <ol style="list-style-type: none"> <li>1. Please identify the problem and the aim of your treatment.</li> <li>2. Which pharmacotherapy (pharmacotherapies) would you choose? Which questions should you ask to test the suitability of the chosen treatment?</li> <li>3. How would you inform the patient about the treatment?</li> <li>4. What would you recommend for prophylaxis? What could be the options for non-pharmacological treatment?</li> </ol> <p>Each question is evaluated and scored as seen in the attached example. Prescription for the presented case is explained in other assessment methods and tools section.</p>	1	80%
<p><i>Objective Structured Clinical Exam (OSCE)-B</i></p> <p>OSCE station related to the writing a prescription. Evaluation criteria are shown below.</p> <p>Patient's Name (1 pts), Date (1 pts), Diagnosis (1 pts), Protocol No (1 pts), Doctor's Name (1 pts), Signature/Stamp (1 pts), Diploma No (1 pts), Department (1 pts), Box Number (1 pts), Ending of Prescription (1 pts), Dosage (5 pts), Time (5 pts )</p> <p>Total: 20 pts</p>	1	20%
<b>TOTAL</b>		<b>100%</b>

<b>MATERIAL SHARING</b>	
<b>Documents</b>	Photocopy shareable
<b>Assignments</b>	Shareable
<b>Exams</b>	Not shareable

<b>COURSE CATEGORY</b>	Expertise/Field Courses
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<b>COURSE'S CONTRIBUTION TO PROGRAM</b>						
	<b>POD.G.1. Basic Professional Competencies</b>	<b>Contribution</b>				
	<b>POD.1.1. Clinical Competencies</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PO.1.1.1.</b>	<b>values</b> preventive health services, <b>offers</b> primary prevention (i.e. prevention of diseases for the protection of health), secondary prevention (i.e. early diagnosis and treatment) tertiary prevention (i.e. rehabilitation) and quaternary prevention (i.e. prevention of excessive and unnecessary diagnosis and treatment) services, <b>provides</b> consultancy on these issues.		<b>X</b>			
<b>PO.1.1.2.</b>	<b>employs</b> a patient-centered approach in patient management.				<b>X</b>	
<b>PO.1.1.3.</b>	<b>recognizes</b> most frequently occurring or significant clinical complaints, symptoms, signs, findings and their emergence mechanisms in clinical conditions.				<b>X</b>	
<b>PO.1.1.4.</b>	<b>takes</b> medical history from the applicant himself/herself or from the individual's companions.					<b>X</b>
<b>PO.1.1.5.</b>	<b>does</b> general and focused physical and mental examination.		<b>X</b>			
<b>PO.1.1.6.</b>	<b>interprets</b> findings in medical history, physical and mental examination.		<b>X</b>			
<b>PO.1.1.7.</b>	<b>employs</b> diagnostic procedures that are used frequently at the primary health care level.					<b>X</b>
<b>PO.1.1.8.</b>	<b>selects</b> tests that have evidence-based high efficacy at the primary health care level and <b>interprets</b> results.		<b>X</b>			
<b>PO.1.1.9.</b>	<b>makes</b> clinical decisions using evidence-based systematic data in health care service.				<b>X</b>	
<b>PO.1.1.10.</b>	<b>performs</b> medical interventional procedures that are used frequently at the primary health care level.	<b>X</b>				
<b>PO.1.1.11.</b>	<b>manages</b> healthy individuals and patients in the context of health care services.		<b>X</b>			
<b>PO.1.1.12.</b>	<b>keeps</b> medical records in health care provision and <b>uses</b> information systems to that aim.				<b>X</b>	
	<b>POD.1.2. Competencies related to Communication</b>					
<b>PO.1.2.1.</b>	throughout his/her career, <b>communicates</b> effectively with health care beneficiaries, co-workers, accompanying persons, visitors, patient's relatives, care givers, colleagues, other individuals, organizations and institutions.					<b>X</b>
<b>PO.1.2.2.</b>	<b>collaborates</b> as a team member with related organizations and institutions, with other professionals and health care workers, on issues related to health.				<b>X</b>	

<b>PO.1.2.3.</b>	<b>recognizes</b> the protection and privacy policy for health care beneficiaries, co-workers, accompanying persons and visitors.			<b>X</b>		
<b>PO.1.2.4.</b>	<b>communicates</b> with all stakeholders taking into consideration the socio-cultural diversity.			<b>X</b>		
	<b>POD.1.3. Competencies Related to Leadership and Management</b>					
<b>PO.1.3.1.</b>	<b>manages</b> and <b>leads</b> within the health care team in primary health care organization.			<b>X</b>		
<b>PO.1.3.2.</b>	<b>recognizes</b> the principles of health management and health sector economy, models of organization and financing of health care services.					<b>X</b>
<b>PO.1.3.3.</b>	<b>recognizes</b> the resources in the health care service, the principles for cost-effective use.					<b>X</b>
	<b>POD.1.4. Competencies related to Health Advocacy</b>					
<b>PO.1.4.1.</b>	<b>recognizes</b> the health status of the individual and the community and the factors affecting the health, <b>implements</b> the necessary measures to prevent effects of these factors on the health.			<b>X</b>		
<b>PO.1.4.2.</b>	<b>recognizes</b> and <b>manages</b> the health determinants including conditions that prevent access to health care.				<b>X</b>	
	<b>POD.1.5. Competencies related to Research</b>					
<b>PO.1.5.1.</b>	<b>develops, prepares</b> and <b>presents</b> research projects	<b>X</b>				
	<b>POD.1.6. Competencies related to Health Education and Counseling</b>					
<b>PO.1.6.1.</b>	<b>provides</b> consultancy services and <b>organizes</b> health education for the community to sustain and promote the health of individual and community.					
	<b>PODG.2. Professional Values and Perspectives</b>					
	<b>POD.2.1. Competencies related to Law and Legal Regulations</b>					
<b>PO.2.1.1.</b>	<b>performs</b> medical practices in accordance with the legal framework which regulates the primary health care service.					<b>X</b>
	<b>POD.2.2. Competencies Related to Ethical Aspects of Medicine</b>					
<b>PO.2.2.1.</b>	<b>recognizes</b> basic ethical principles completely, and <b>distinguishes</b> ethical and legal problems.					<b>X</b>
<b>PO.2.2.2.</b>	<b>pays importance to</b> the rights of patient, patient's relatives and physicians, and <b>provides</b> services in this context.					<b>X</b>
	<b>POD.2.3. Competencies Related to Social and Behavioral Sciences</b>					
<b>PO.2.3.1.</b>	<b>relates</b> historical, anthropological and philosophical evolution of medicine, with the current medical practice.					
<b>PO.2.3.2.</b>	<b>recognizes</b> the individual's behavior and attitudes and factors that determine the social dynamics of the community.			<b>X</b>		
	<b>POD.2.4. Competencies Related to Social Awareness and Participation</b>					
<b>PO.2.4.1.</b>	<b>leads</b> community with sense of responsibility, behavior and attitudes in consideration of individual behaviors and social dynamics of the community, and if there is a necessity, <b>develops</b> projects directed towards health care services.				<b>X</b>	
	<b>POD.2.5. Competencies Related to Professional Attitudes and Behaviors</b>					

<b>PO.2.5.1.</b>	<b>displays</b> a patient-centered and holistic (biopsychosocial) approach to patients and their problems.					<b>X</b>
<b>PO.2.5.2.</b>	<b>respects</b> patients, colleagues and all stakeholders in health care delivery.				<b>X</b>	
<b>PO.2.5.3.</b>	<b>displays</b> the proper behavior in case of disadvantaged groups and situations in the community.				<b>X</b>	
<b>PO.2.5.4.</b>	<b>takes</b> responsibility for the development of patient safety and healthcare quality.				<b>X</b>	
<b>PO.2.5.5.</b>	<b>evaluates</b> own performance as open to criticism, <b>realizes</b> the qualifications and limitations.				<b>X</b>	
<b>PODG.3. Professional Development and Self-Worth</b>						
<b>PODG.3.1. Personal Development and Values</b>						
<b>PO.3.1.1.</b>	<b>embraces</b> the importance of lifelong self-learning and <b>implements</b> .					X
<b>PO.3.1.2.</b>	<b>embraces</b> the importance of updating knowledge and skills; <b>searches</b> current advancements and <b>improves</b> own knowledge and skills.					X
<b>PO.3.1.3.</b>	<b>uses</b> English language at least at a level adequate to follow the international literature and to establish communication related to the profession.					X
<b>POD.3.2. Competencies Related to Career Management</b>						
<b>PO.3.2.1.</b>	<b>recognizes</b> and <b>investigates</b> postgraduate work domains and job opportunities.				X	
<b>PO.3.2.2.</b>	<b>recognizes</b> the application requirements to postgraduate work/job domains, and <b>distinguishes</b> and <b>plans</b> any requirement for further training and work experience.				<b>X</b>	
<b>PO.3.2.3.</b>	<b>prepares</b> a resume, and <b>recognizes</b> job interview methods.					<b>X</b>
<b>POD.3.3. Competencies Related to Protection and Development of Own Physical and Mental Health</b>						
<b>PO.3.3.1.</b>	<b>implements</b> the rules of healthy living.					X
<b>PO.3.3.2.</b>	<b>displays</b> appropriate behavior specific to work under stressful conditions.				<b>X</b>	
<b>PO.3.3.3.</b>	<b>uses</b> self-motivation factors.					<b>X</b>

<b>ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION</b>			
Activities	Quantity day	Duration (Hour)	Total Workload (Hour)
Course Duration (1.5 weeks)	7	4.5	31.5
Hours for off-the-classroom study (Pre-study, practice, review/week)	7	6	42
Homework	-	-	-
Exam	1	2	2
<b>Total Work Load</b>			75.5
<b>Total Work Load / 30 (h)</b>			2.52
<b>ECTS Credit of the Course</b>			3