

COURSE INFORMATION					
Course Title	Code	Semester	L+P+L Hour	Credits	ECTS
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

Prerequisites	The student that joins this course, should completed Phase 1, 2, 3 and 4 courses of medical faculty.
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Language of Instruction	English
Course Level	Second Cycle including First Cycle Degree (One Tier Program)
Course Type	Compulsory
Course Coordinator	Ece Genç, PhD Prof.
Instructors	Ece Genç, PhD Prof Emine Nur Özdamar MD Assist. Prof. Cenk Andaç MD Assist. Prof. Volkan Aydın MD
Assistants	None
Goals	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.
Content	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.

Learning Outcomes <i>At the end of this clerkship, the student should be able to</i>	Programme Learning Outcomes	Teaching Methods	Assessment Methods
1. define patient's problem	1.1.1, 1.1.2	1, 2, 3, 9, 12	A
2. list aims of therapy	1.1.2, 2.1.1, 2.1.2, 3.1.3	1, 2, 3, 9, 12	A
3. categorize effective drug groups	3.1.3, 3.1.4	1	A
4. discuss personal drugs	1.1.6, 2.1.2, 2.3.2, 2.5.1, 2.5.2, 2.5.3	1,2,3	A
5. determine "proper" drug according to certain criteria	1.1.9, 3.1.3, 3.1.4	1,2,3	A
6. conduct preparation of personal formulary	1.1.9, 3.1.1,3.1.2, 3.1.3, 3.2.1	1,2,3	A
7. enhance prescription writing skills.	2.5.1, 3.2.1,3.2.2, 3.1.4, 3.2.3	1,3,9,12	A
8. use the right drug at the right dose at appropriate intervals with a special attention to economic aspects of therapy	1.1.2, 1.1.6, 1.1.9, 2.1.2, 2.5.1	1,3,9,12	A

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

COURSE CONTENT		
Days	Topics	Study Materials
	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, 16 th ed. McGraw Hill, 2023.
1	1. Rational drug use 2. Personal drugs /introduction to "MAUA" forms 3. Antihypertensive drugs: Introduction to reference materials	
2	Essential Hypertension	
3	Solving case studies for essential hypertension, acute bacteria rhinosinusitis	
4	Solving case studies for acute bacterial rhinosinusitis	
5	Urinary tract infections	
6	Solving case studies for urinary tract infections	

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

RECOMMENDED SOURCES	
Textbook & other Resources	<ol style="list-style-type: none"> 1-Katzung, B.G., Masters S.B. and Trevor, A.J. eds. Basic and Clinical Pharmacology, 16th ed. McGraw Hill, 2023. 2-Williams, B. et al.2018 ESC/ESH guidelines for the management of arterial hypertension, European Heart Journal, 1-98 (2018). 3-Aring, A.M, and Chan, M.M.: Current Concepts in Adult Acute Rhinosinusitis, Am Fam Physician. 94(2):97-105 (2016). 4-Chow, A.W. et al.IDSA Clinical Practice Guideline for AcuteBacterial Rhinosinusitis in Children and Adults, CID 54:72-112(2012). 5- Colgan, R. and Williams, M., Diagnosis and Treatment of Acute Uncomplicated Cystitis, American Family Physician 84:771-776 (2011). 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).
Additional Resources	Lecture notes

ASSESSMENT		
IN-TERM STUDIES	NUMBER	PERCENTAGE
<p>Essay Questions in Objective Structured Clinical Exam Station (OSCE)-A</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"> 1. Please identify the problem and the aim of your treatment. 2. Which pharmacotherapy (pharmacotherapies) would you choose? Which questions should you ask to test the suitability of the chosen treatment? 3. How would you inform the patient about the treatment? 4. What would you recommend for prophylaxis? What could be the options for non-pharmacological treatment? <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>Objective Structured Clinical Exam (OSCE)-B</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%
TOTAL		100%

COURSES CONTRIBUTION TO PROGRAM					
COMPETENCE AREA-1 / Professional Practices	Contribution				
COMPETENCE 1.1. Health Service Provider	1	2	3	4	5
Competency 1.1.1. Integrates knowledge, skills, and attitudes acquired from basic and clinical medical sciences, behavioral sciences, and social sciences to provide health services.			x		
Competency 1.1.2. Demonstrates a biopsychosocial approach that considers the individual's sociodemographic and sociocultural background without discrimination based on language, religion, race, or gender in patient management.					x
Competency 1.1.3. Prioritizes the protection and improvement of individuals' and community's health in the delivery of healthcare services.					
Competency 1.1.4. Performs the necessary actions in the direction of maintaining and improving the state of health as considering the individual, social, social and environmental factors affecting health.					
Competency 1.1.5. Provides health education to healthy/ill individuals and their families, as well as to other healthcare professionals, by recognizing the characteristics, needs, and expectations of the target audience.					
Competency 1.1.6. Demonstrates a safe, rational, and effective approach in the processes of protection, diagnosis, treatment, follow-up, and rehabilitation in health service delivery.				x	
Competency 1.1.7. Performs interventional and/or non-interventional procedures safely and effectively for the patient in the processes of diagnosis, treatment, follow-up, and rehabilitation.					
Competency 1.1.8. Provides healthcare services considering patient and employee health and safety.					
Competency 1.1.9. Considers changes related to the physical and socio-economic environment at both regional and global scales that affect health, as well as changes in the individual characteristics and behaviors of those who seek healthcare services.					x
COMPETENCE AREA-2 / Professional Values and Approaches	Contribution				
COMPETENCE 2.1. Adopting Professional Ethics and Principles	1	2	3	4	5
Competency 2.1.1. Considers good medical practices while performing the profession.				x	
Competency 2.1.2. Fulfills duties and obligations within the framework of ethical principles, rights, and legal responsibilities required by the profession.					x
Competency 2.1.3. Demonstrates determined behavior in providing high-quality healthcare while considering the patient's integrity.					
Competency 2.1.4. Evaluates own performance in professional practices by considering own emotions and cognitive characteristics.					
COMPETENCE 2.2. Health Advocate					
Competency 2.2.1. Advocates for the improvement of healthcare service delivery by considering the concepts of social accountability and social responsibility in the protection and enhancement of community health.					
Competency 2.2.2. Plans and implements service delivery, education, and counseling processes related to individual and community health, in collaboration with all stakeholders, for the protection and improvement of health.					
Competency 2.2.3. Evaluates the impact of health policies and practices on individual and community health indicators and advocates for the improvement of healthcare quality.					
Competency 2.2.4. Gives importance to protecting and improving own physical, mental, and social health and takes necessary actions for it.					
COMPETENCE 2.3. Leader-Manager					
Competency 2.3.1. Demonstrates exemplary behavior and leadership within the healthcare team during service delivery.					

Competency 2.3.2. Utilizes resources in a cost-effective, socially beneficial, and compliant manner with regulations in the planning, implementation, and evaluation processes of healthcare services as the manager in the healthcare institution.			x		
COMPETENCE 2.4. Team Member					
Competency 2.4.1. Communicates effectively within the healthcare team and takes on different team roles as necessary.					
Competency 2.4.2. Displays appropriate behaviors while being aware of the duties and responsibilities of healthcare workers within the healthcare team.					
Competency 2.4.3. Works collaboratively and effectively with colleagues and other professional groups in professional practice.					
COMPETENCE 2.5. Communicator					
Competency 2.5.1. Communicates effectively with patients, their families, healthcare professionals, and other occupational groups, institutions and organizations.					x
Competency 2.5.2. Communicates effectively with individuals and groups who require a special approach and have different sociocultural characteristics.			x		
Competency 2.5.3. Demonstrates a patient-centered approach that involves the patient in decision-making mechanisms during the diagnosis, treatment, follow-up, and rehabilitation processes.			x		
COMPETENCE AREA-3 / Professional and Personal Development	Contribution				
COMPETENCE 3.1. Scientific and Analytical Approach	1	2	3	4	5
Competency 3.1.1. Plans and implements scientific research, as necessary, for the population it serves, and utilizes the results obtained, as well as those from other research, for the benefit of the community.			x		
Competency 3.1.2. Accesses and critically evaluates current literature related to their profession.				x	
Competency 3.1.3. Applies evidence-based medicine principles in the clinical decision-making process.					x
Competency 3.1.4. Uses information technologies to enhance the effectiveness of healthcare, research, and education activities.					x
COMPETENCE 3.2. Lifelong Learner					
Competency 3.2.1. Manages effectively individual study processes and career development.				x	
Competency 3.2.2. Demonstrates skills in acquiring, evaluating, integrating new information with existing knowledge, applying to professional situations, and adapting to changing conditions throughout professional career.				x	
Competency 3.2.3. Selects the right learning resources to improve the quality of health care and organizes the learning process.				x	

MATERIAL SHARING	
Documents	Photocopy shareable
Assignments	Shareable
Exams	Not shareable

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
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
Total Work Load			75.5
Total Work Load / 30 (h)			2.52
ECTS Credit of the Course			3