The University of Jordan

الجامعة الاردنية

Form: Course Syllabus	Form Number	EXC-01-02-02A
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1.	Course Title	Therapeutics
2.	Course Number	0503590
3.	Credit Hours (Theory, Practical)	3
	Contact Hours (Theory, Practical)	45 Lectures
4.	Prerequisites/ Corequisites	--
5.	Program Title	MD
6.	Program Code	05
7.	School/ Center	School of Medicine
8.	Department	Therapeutics
9.	Course Level	Bachelor
10.	Year of Study and Semester (s)	First year/ Second Semester
11.	Program Degree	Bachelor
12.	Other Department(s) Involved in Teaching the Course	Pharmacology
13.	Learning Language	English
14.	Learning Types	☐Face to face learning ☐Blended ☒Fully online
15.	Online Platforms(s)	☐Moodle ☒Microsoft Teams
16	Issuing Date	28/1/2024
17.	Revision Date	2025/5/11

18. Course Coordinator:

Name: Prof. Yacoub Irshaid

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19. Other Instructors:

Name:
Office number:
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Email:
Contact hours:
Name:
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20. Course Description:

A- Course Description:

Therapeutics is that branch of medicine that deals with the use of drugs for treatment and cure of diseases. This course will utilize the pathophysiology of diseases and evidence-based medicine for the rational selection of drugs for treatment. The students should also learn the importance of monitoring drug's therapeutic effects and adverse reactions.

B- Aims:

1. **Enable the medical student to develop the skills of appropriate selection of drugs to treat disease according to the individual need of the patient, utilizing the pathophysiology of disease and evidence-based medicine.**
2. **Enable the medical student to select the most effective, least toxic and cost effective drug to treat diseases as feasible as possible.**

21. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

PLO's	*National Qualifications Framework Descriptors*		
	Competency (C)	**Skills (B)**	**Knowledge (A)**
1.	☐	☐	☒
2.	☐	☒	☐
3.	☒	☐	☐
4.	☐	☐	☒
5.	☐	☒	☐
6	☒	☐	☐
7	☐	☐	☒
8	☒	☐	☐

* Choose only one descriptor for each learning outcome of the program, whether knowledge, skill, or competency.

1. **Demonstrate basic knowledge of normal human structure and function at molecular, genetic, cellular, tissue, organ, system and whole-body levels in terms of growth, development, and health maintenance. Analyze the basic molecular and cellular mechanisms involved in the causation and treatment of human disease and their influence on clinical presentation and therapy.**

2. **Collect, interpret, document, and communicate accurately a comprehensive medical history, including the psychological and behavioral factors, and a thorough organ-system-specific physical examination inclusive of the mental status of the patient.**

3. **Integrate and communicate collected clinical information in the construction of appropriate diagnostic and therapeutic management strategies to identify life-threatening conditions ensuring prompt therapy, referral, and consultation with relevant disciplines and skillfully perform basic medical procedures for general practice on patients with common illness, acute and chronic, taking into account environmental, social, cultural and psychological factors.**

4. **Demonstrate in-depth knowledge of the epidemiology and biostatistics of common diseases, and analyze the impact of ethnicity, culture, socioeconomic factors and other social factors on health, disease and individual patient's health care.**

5. **Communicate effectively and professionally, both orally and in writing, with patients, their families, and with other healthcare providers utilizing information technology resources in his/her scholarly activities and professional development with the ability to teach others,**

and to understand and respect other healthcare professionals 'roles, and apply the principles of multidisciplinary teamwork dynamics and collaboration.

6. **Apply scientific methods including evidence –based approach to the medical practice including problem identification, data collection, hypothesis formulation, etc., and apply inductive reasoning to problem solving and ensure that clinical reasoning and decision making are guided by sound ethical principles.**

7. **Demonstrate knowledge of scientific research methods and ethical principles of clinical research and be able to write research proposals or research papers.**

Demonstrate professionally the skills needed for Quality improvement, lifelong learning, and continuous medical education including the ability to identify and address personal strength and weakness, self-assess knowledge and performance, and develop a self-improvement plan

22. Course Intended Learning Outcomes: (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

Course ILOs #	The learning levels to be achieved						Competencies
	Remember	Understand	Apply	Analyse	Evaluate	Create	
1.	✓	✓					. List the types of adverse drug reactions and the mechanisms of drug-drug and drug-herb interactions.
2.		✓	✓	✓	✓	✓	Recognize relevant pharmacokinetics and pharmacodynamics of drugs in special populations (the elderly, pregnancy, lactation).
3.		✓	✓	✓	✓	✓	Apply the knowledge of the pathophysiology of disease to select

							appropriate and evidence-based non-pharmacologic and pharmacologic therapy
4.		✓	✓	✓	✓	✓	Identify drug-induced disease to exclude these drugs as part of the rational therapy of that disease
5.		✓	✓	✓	✓	✓	Appraise the importance of communicating adequately and with passion with the patient during therapy.
6		✓	✓	✓	✓	✓	. Employ the knowledge of the pharmacology of drugs to select a rational monitoring method to follow drug's benefits and adverse reactions.
7		✓	✓	✓	✓	✓	Use the knowledge obtained during the course and special patient characteristics to individualize therapy to the particular need of the patient.

23. The matrix linking the intended learning outcomes of the course -CLO's with the intended learning outcomes of the program -PLOs:

PLO's * / CLO's	1	2	3	4	5	6	7	Descriptors**		
								A	B	C
1	✓	✓		✓				✓		
2			✓			✓			✓	
3			✓							✓
4								✓		
5					✓				✓	
6						✓				✓
7								✓		
8							✓			✓

***Linking each course learning outcome (CLO) to only one program outcome (PLO) as specified in the course matrix.**

****Descriptors are determined according to the program learning outcome (PLO) that was chosen and according to what was specified in the program learning outcomes matrix in clause (21).**

24. Topic Outline and Schedule:

Week	Topic	Student Learning Outcome (SLO)	Descriptors **	Learning Types (Face to Face/Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	Adverse Drug Reactions	Recognize adverse drug reactions types Identify and prevent adverse drug reactions	K	Online	Microsoft teams		Exam	28.1,or 2
2	Drug Interactions	Recognize drug-drug and drug-herb interactions mechanisms. Detect drug-drug interactions occurrence and use the information for rational prescribing.	K ,S	Online	Microsoft teams		Exam	28.1,or 2
3	Drug Interactions	Recognize drug-drug and drug-herb interactions mechanisms. Detect drug-drug interactions occurrence and use the information for rational prescribing.	K, S	Online	Microsoft teams		Exam	28.1,or 2
4	Therapeutic Drug Monitoring	Understand the principles of drug monitoring for both therapeutic effects and adverse reactions. Understand and use the principles of measuring concentration of drugs in biological fluids as a surrogate marker for monitoring therapeutic and adverse effects.	K	Online	Microsoft teams		Exam	28.1,or 2
5	Drug Use in the Elderly	Apply the knowledge of the pharmacokineticc and pharmacodynaics changes that occur in elderly patients for rational prescribing. Recognize drugs that should be avoided in the elderly and the reason for that.	K, S	Online	Microsoft teams		Exam	28.1,or 2

6	Drug Use in Pregnancy & Lactation	Recognize drugs that might produce teratogenicity nd how to avoid their use during pregnancy. Understand the mechanisms of drug-induced malformation. Recognize adverse reactions of drugs in the foetus if used by mothers during pregnancy. Understand the principles that govern drug passage into breast milk. Recognize drugs that may be toxic to reastfed infants if taken by the mother and how to avoid toxicity. Identify drugs and herbs that might affect milk production and flow.	K	Online	Microsoft teams		Exam	28.1,or 2
7	Therapy of disease during Pregnancy	Recognize drug indications for treatment of medical disorders uring pregnancy. Recognize drugs that are contraindiated for treatment of medical disorders during pregnancy, because of fear of effects on the fetus. Understand the benefits and dverse reactions of drugs used to induce labor. Understand the benefits and dverse reactions of drugs used to delay labor.	K	Online	Microsoft teams		Exam	28.1,or 2
8	Therapy of Bronchial Asthma	Understand the pathophysology of bronchial asthma in relation to drug therapy. Understand re-modelling of the irways in relation to drug therapy. Identify drugs that may exacerbate or induce bronchial asthma. Understand the importance of inhalational therapy in bronchial asthma.	K	Online	Microsoft teams		Exam	28.1,or 2

9	Therapy of Diabetes Mellitus 1	Identify drugs that may induce diabetes mellitus and which type. Understand the importance and how to apply non-pharmacolgic therapy of diabetes mellitus. Understand the principles and procedures of therapy of type 1 diabetes mellitus. Apply the principle of continuous education of diabetic patients in the management of their disease.	K, S	Online	Microsoft teams		Exam	28.1,or 2
10	Therapy of Diabetes Mellitus 2	Understand the principles and procedures of therapy of type 2 diabetes mellitus. Recognize therapy of diabetic ketoacidosis, hyperosmolar diabetic coma and therapy of diabetes in hospitalized patients. Apply the information gained in the management of this disease	K, S	Online	Microsoft teams		Exam	28.1,or 2
11	Therapy of Osteoporosis	Recognize the medical conditions and drugs that may be associated with osteoporosis. Recognize the principles that should be employed in the prevention of osteoporosis. Recognize drug treatments of first choice in the treatment of osteoporosis. Recognize the adverse effects of drugs used in treatment of osteoporosis.	K	Online	Microsoft teams		Exam	28.1,or 2
12	Therapy of hypertension 1	Recognize drugs that can cause elevation f blood pressure. Apply the knowledge of life-style modification in management of hypertension. Know the list of drugs that can be used as a first choice monotherapy and in combination for treating hypertension.	K, S	Online	Microsoft teams		Exam	28.1,or 2

13	Therapy of hypertension 2	Select antihypertensive agents according to compelling indications (asthma, diabetes, heart failure, coronary artery disease,). Recognize therapy of hypertensive urgencies and emergencies. Formulate a monitoring method for antihypertensive drugs regarding efficacy and adverse reactions.	K, S	Online	Microsoft teams		Exam	28.1,or 2
14	Therapy of acute coronary syndromes	Recognize the primary management of ST elevation myocardial infarction (STEMI). Recognize the primary management of on–ST-segment elevation (NSTE) acute coronary syndrome (ACS) (NSTE-ACS). Recognize ventricular re-modelling following an acute MI, and the drugs that can ameliorate it. Recognise the benefits, indications and adverse effects of drugs used in acute coronary syndromes.	K	Online	Microsoft teams		Exam	28.1,or 2
15	Therapy of Chronic heart failure 1	Differentiate between systolic *vs* diastolic dysfunction chronic heart failure. Recognize drugs which can precipitate or exacerbate heart failure. Recognize the primary treatment of heart failure with preserved ejection fraction.	K	Online	Microsoft teams		Exam	28.1,or 2
16	Therapy of Chronic heart failure 2	Recognize the primary treatment of heart failure with reduced ejection fraction. Recognize benefits, indications and adverse reactions of drugs used in the treatment of heart failure. Recognize the methods of monitoring of rugs used in treatment of heart failure.	K	Online	Microsoft teams		Exam	28.1,or 2

17	Therapy of dyslipidemias	Identify drugs associated with development of the various types of dyslipidemias. Apply knowledge on nonpharmacologic treatment of dyslipidemias on the management of dusease. Recognize the drug of first choice for each type of dyslipidemias. Recognize the benefits, indications and adverse drug reactions for drugs used in dyslipidemias.	K, S	Online	Microsoft teams		Exam	28.1,or 2
18	Therapy of venous thromboembolism	Recognize the medical and surgical conditions that require venous thromboembolism prophylaxis. Recognize the drug treatment of first choice in acute thromboembolism. Recognize drug interactions with anticoagulants. Recognize benefits, indications and adverse reactions with anticoagulants.	K	Online	Microsoft teams		Exam	28.1,or 2
19	Therapy of Epilepsy 1	Understand the principles of drug therapy of epilepsy. Recognized drug-drug interactions among anti-seizure drugs themselves. Recognize the importance of mono-therapy in epileptic patients	K	Online	Microsoft teams		Exam	28.1,or 2

20	Therapy of Epilepsy 2	Recognize the importance of drug resistance of and non-adherence to anti-seizure drugs. Apply the principle of individualization of therapy of epilepsy. Recognize prevalent adverse effects of anti-seizure drugs in certain age and gender groups for prescribing appropriately. Recognize the importance of "Therapeutic Drug Monitoring" of anti-seizure drugs.	K, S	Online	Microsoft teams		Exam	28.1,or 2
21	Therapy of migraine	Recognize the triggers of migraine Recognize drug treatments of first choice in the treatment of migraine Recognize the adverse effects of drugs used in treatment of migraine Recognize drug-drug interactions ith drugs used in treatment of migraine	K	Online	Microsoft teams		Exam	28.1,or 2
22	Therapy of Schizophrenia	Recognize drug treatments of first choice in the treatment of schizophrenia Recognize the adverse effects of drugs used in treatment of schizophrenia Recognize drug-drug interactions with drugs used in treatment of schizophrenia	K	Online	Microsoft teams		Exam	28.1,or 2

23	Therapy of Depression	Recognize the me may be associated with depression Recognize drugs that may be associated with depression Recognize the importance of individualization of depression treatment Recognize the adverse effects of drugs used in treatment of depression Recognize drug-drug interactions ith drugs used in treatment of depression	K	Online	Microsoft teams		Exam	28.1,or 2
24	Antimicrobial prophylaxis and selection 1	Understand the meaning and difference of empiric and definitive antimicrobial therapy. Understand the importance of local Antibiograms in selection of empiric antimicrobial therapy. Recognize factors that affect the outcome of antimicrobial therapy related to host, microorganism and drugs. Recognize the major drug adverse reactions and interactions with antimicrobials.	K, S	Online	Microsoft teams		Exam	28.1,or 2
25	Antimicrobial prophylaxis and selection 2	Recognize the causes of failure of antimicrobial therapy. Apply the knowledge rationale for antimicrobial drug combinations in treatment of infection. Recognize disadvantages of antimicrobial drug combinations. Understand the principles of antimicrobial prophylaxis and their indication in surgery and medicine.	K, S	Online	Microsoft teams		Exam	28.1,or 2

25	Therapy of pneumonia	Understand the principles of treatment of community-acquired and hospital acquired pneumonia. Recognize the most common microorganisms associated with each type of pneumonia in both children and adults. Apply the principles of selection of antimicrobial drugs for each type of pneumonia. Recognize principles of treatment of neonatal pneumonia.	K, S	Online	Microsoft teams		Exam	28.1,or 2
26	Therapy of meningitis	Recognize antimicrobial agents that penetrate of into the CSF. Recognize drugs of first choice for each pathogen causing the meningitis and their alternatives. Apply the principles of medical treatment of bacterial brain abscesses. Recognize treatment of fungal, viral and mycobacterial meningitis.	K, S	Online	Microsoft teams		Exam	28.1,or 2
27	Therapy of infection in neutropenic patients	Recognize microorganisms that might cause infection and fever in neutropenic patients. Understand the approaches to treatment of infection in neutropenic patients. Recognize antibiotic regimens used in treatment of infection in neutropenic patients. Recognize the indications for initiation of antifungal or antiviral therapy in treatment of infection in neutropenic patients.	K	Online	Microsoft teams		Exam	28.1,or 2
28	Medication errors	Define medication error. Recognize point at which medication errors might occur. Recognize types of medication errors. Identify Who Is to blame, the Healthcare Professional or the System?	K, S	Online	Microsoft teams		Exam	28.3

K: knowledge, S: skill, C: competency

25. Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	CLOs	Descriptors**	Period (Week)	Platform
Short exam 1	20	Adverse drug reactions, Drug interactions, Therapeutic drug monitoring, Drug use in the elderly, Drugs in pregnancy and lactation, Therapy of disease during Pregnancy, Therapy of bronchial asthma	1/2/3/4/5/6/7/8/	K S	Middle of first semester	Paper-based exam
Short exam 2	15	Therapy of Diabetes Mellitus, Therapy of Osteoporosis, Therapy of Hypertension, Therapy of acute coronary syndromes, Therapy of chronic heart failure	9/10/11/12/13/14/15/16	K S	Second weak second semester week	Online exam
Short exam 3	15	Therapy of dyslipidemia, Therapy of venous thromboembolism, Therapy of epilepsy, Therapy of migraine, Therapy od schizophrenia, Therapy of depression	17/18/19/20/21/22/23	K S	Middle of second semester	Online exam
Final exam	50	Adverse drug reactions, Drug interactions, Therapeutic drug monitoring, Drug use in the elderly, Drugs in pregnancy and lactation, Therapy of disease during Pregnancy, Therapy of bronchial asthma Therapy of Diabetes Mellitus, Therapy of Osteoporosis, Therapy of Hypertension, Therapy of acute coronary syndromes, Therapy of chronic heart failure Therapy of dyslipidemia, Therapy of venous thromboembolism, Therapy of epilepsy, Therapy of migraine, Therapy od schizophrenia, Therapy of depression Antimicrobial prophylaxis and selection, therapy of pneumonia Therapy of meningitis, Therapy of infections in neutropenic patients Medication errors	7/8/9/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28	K S	End of year	Online exam

** **K: Knowledge, S: Skills, C: Competency**

*** According to the instructions for granting a Bachelor's degree.**

****According to the principles of organizing semester work, tests, examinations, and grades for the bachelor's degree.**

(Table is completed on a separate form by course coordinators prior to conduction of each exam according to Accreditation and Quality Assurance Centre procedures and forms)

Mid-term exam specifications table*

No. of questions/ cognitive level						No. of questions per CLO	Total exam mark	Total no. of questions	CLO/ Weight	CLO no.
Create **%10**	Evaluate **%10**	analyse **%10**	Apply %20	Understand **%20**	Remember %30					
1	1	1	4	2	1	10	100	100	10%	1

(Table is completed on a separate form by course coordinators prior to conduction of each exam according to Accreditation and Quality Assurance Centre procedures and forms)

Final exam specifications table

No. of questions/ cognitive level						No. of questions per CLO	Total exam mark	Total no. of questions	CLO Weight	CLO no.
Create **%10**	Evaluate **%10**	analyse **%10**	Apply %20	Understand **%20**	Remember %30					
										1
										2
										3
										4
										5

26. Course Requirements:

✓ **Online educational material using Microsoft teams**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following <u>teaching and learning methods</u>:

Class room Lectures
Interactive Videos and Animations
✓ **Online activities and assignments**
Open Laboratory sessions
Discussion sessions and forums
Game- based learning

27. Course Policies:

A- Attendance policies:

Attendance will be monitored by the course coordinator. Attendance policies will be announced at the beginning of the course.

B- Absences from exams and handing in assignments on time:

Will be managed according to the University of Jordan regulations. Refer to http://registration.ju.edu.jo/Documents/daleel.pdf

C- Health and safety procedures:

Faculty Members and students must at all times, conform to Health and Safety rules and procedures.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this course and also integrity in your behavior in and out of the classroom. Students violate this policy would be subjected to disciplinary action according to University of Jordan disciplinary policies

E- Grading policy:

Grade-point average, Rules are preset by the Faculty and Department Councils

F- **Available university services that support achievement in the course:**

Availability of comfortable lecture halls, data show, internet service and E learning website https://elearning.ju.edu.jo/

28. References:

1. Pharmacotherapy, a pathophysiologic approach. DiPiro, Talbert, Yee, Matzke, Wells and Posey. Tenth edition, 2017. McGraw Hill.
2. Pharmacotherapy Handbook. Wells, DiPiro JT, Schwinghammer, DiPiro CV. Ninth edition 2015. McGraw Hill.
3. Hand out material

Name of the Instructor or the Course Coordinator: Professor Yacoub Irshid	Signature: Yacoub Irshid	Date: 10/7/2025
Name of the Head of Department Professor Malik Zihlif	Signature:	Date: 9-7-2025
Name of the Head of Quality Assurance Committee/ Department D.r Enas Al-Zayadneh	Signature:	Date: 11/5/2025
Name of the Head of Quality Assurance Committee/ School or Center Professor Ayman Wahbeh	Signature:	Date: 10/7/2025
Name of the Dean or the Director Professor Ayman Wahbeh	Signature:	Date: 10/7/2025

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