

## Academic Program Description Form

**University Name: Tikrit University**

**Faculty/Institute: College of Pharmacy**

**Scientific Department: Clinical Pharmacy Dept.**

**Academic or Professional Program Name: Bachelor in Pharmacy Sciences**

**Final Certificate Name: Bachelor in Pharmacy Sciences**

**Academic System: Semester system (Two semesters/year)**

**Description Preparation Date: 01/03/2024**

**File Completion Date: 22/03/2024**

**Signature:**



**Head of Department Name:**

**Assist. Prof. Dr. Mohanad Yasir Radeef**

**Date: 25/03/2024**

**Signature:**



**Scientific Associate Name:**

**Lect. Dr. Ali Hussain Abbas**

**Date: 25/03/2024**

**The file is checked by:**

**Department of Quality Assurance and University Performance**

**Director of the Quality Assurance and University Performance Department:**

**Nashwan Ahmed Sumait**

**Date: 25/03/2024**

**Signature:**



**Approval of the Dean**

**Lect. Dr. Ali Hussain Abbas**

### 1. Program Vision

1- Excellence in the field of clinical pharmacy and comprehensive scientific pharmaceutical practice by providing specialized educational and health services to the community.

2- Improving the therapeutic services provided to the community by keeping pace with the latest developments and adhering to quality standards and continuous development.

### 2. Program Mission

Preparing qualified pharmacists with sufficient theoretical knowledge and practical practice, who have the ability to apply pharmaceutical practices and perform an effective role in social, therapeutic and health care services in accordance with international standards in their workplaces.

### 3. Program Objectives

1- Graduating distinguished pharmacists who are qualified to work in public and private hospitals and pharmacies with the ability to understand and diagnose medical conditions and determine the appropriate treatment for them.

2- Preparing pharmacists who are able to communicate and deal with the rest of the medical team to provide appropriate health care to the patient

### 4. Program Accreditation

None currently available

### 5. Other external influences

None currently available

6 Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews•
<b>Institution Requirements</b>	3	5	2.7%	Basic Course
<b>College Requirements</b>	61	180	97.3%	Basic Course
<b>Department Requirements</b>	---	---	---	Basic Course
<b>Summer Training</b>	---	---	---	Pass
<b>Other</b>	---	---	---	---

This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
			Theoretical	Practical
3rd / 2nd semester	3211	Pharmacy ethics	1	----
4th / 1st semester	413	Clinical Pharmacy I	2	2
4th / 2nd semester	428	Clinical Pharmacy II	2	2
	215	Communication Skills	2	----
5th / 1st semester	513	Applied Therapeutics I	3	----
5th / 2nd semester	5211	Hospital Training	----	4
	527	Pharmacoeconomics	2	----
	528	Applied Therapeutics II	2	----
	529	Therapeutic Drug Monitoring	2	2

## 8. Expected learning outcomes of the program

### Knowledge

- A1. Introduce the student to human diseases and their causes
- A2. Introduce the student to how to diagnose these diseases clinically to reach the final diagnosis
- A3. Introduce the student to the most important techniques used in diagnosis
- A4. Introduce the student to the methods of treatment for each medical condition that are followed globally
- A5. Introduce the student to the optimal use of medicines according to the disease condition

## Skills

B1. Acquisition of clinical applied skills for dealing with patients in hospitals and community pharmacies

B2. Acquire the skills to prescribe treatment for each disease condition

B3. Acquire the skills of detecting defects in drug doses and identifying drug-drug interactions

## Thinking Skills

C1. Develop the student's ability to discuss

C2. Actual application with existing capabilities

C3. Develop the student's ability to take advantage of the available means

C4. Develop the student's ability to perform daily duties

General and Transferable Skills (other skills relevant to employability and personal development)

D1. Activating the student's ability to deal with books and websites specialized in drug information

D2. Develop the student's ability to deal with laboratory equipment

D3. Develop the student's ability to dialogue and discussion

## 9. Teaching and Learning Strategies

- Theoretical and practical lectures
- Frequent visits to teaching hospitals
- Daily assignments and discussions

## 10. Evaluation methods

Theoretical and practical exams in addition to classroom and extracurricular activities and holding scientific seminars

## 11. Faculty

### Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistance Professor	2	---	---	---	1	1
Lecturer	3	---	---	---	1	1
Assistant Lecturer	4	---	---	---	2	2

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## Professional Development

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### Mentoring new faculty members

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- Directing teachers to organize seminars, courses, and give scientific lectures periodically.
  - Directing teachers to publish scientific research in their field of specialization in reputable journals
  - Directing teachers to participate in local and international scientific conferences
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### Professional development of faculty members

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- Participation in academic courses concerned with various fields of education
  - Participation in curriculum development.
  - Active participation in scientific conferences
  - Motivating the teacher to use various teaching methods for students.
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## 12. Acceptance Criterion

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Admission is made within the central admission criteria of the Ministry of Higher Education and Scientific Research

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## 13. The most important sources of information about the program

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The college website, the college guide, the university website, the college page on social media sites, in addition to professional institutions (the Iraqi Pharmacists Syndicate) and the Ministry of Higher Education and Scientific Research

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## 14. Program Development Plan

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- Updating and developing curricula according to the requirements of the labor market
  - Successfully use contemporary technology applications and master conducting experiments
  - Providing volunteer activities
  - Directing students' research towards applied projects that address societal problems
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## Curriculum Skills Map

**please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed**

				<b>Programme Learning Outcomes</b>														
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding					Subject specific skills			Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development		
				A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D1	D2	D3
3 <sup>rd</sup> / 2 <sup>nd</sup> semester	3211	Pharmacy ethics	Core						√			√	√	√	√	√		√
4 <sup>th</sup> / 1 <sup>st</sup> semester	413	Clinical Pharmacy I	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
4 <sup>th</sup> / 2 <sup>nd</sup> semester	428	Clinical Pharmacy II	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	215	Communication Skills	Core						√			√	√	√	√	√		√
5 <sup>th</sup> / 1 <sup>st</sup> semester	513	Applied Therapeutics I	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
5 <sup>th</sup> / 2 <sup>nd</sup> semester	5211	Hospital Training	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	527	Pharmacoeconomics	Core						√			√	√	√	√	√		√
	528	Applied Therapeutics II	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	529	Therapeutic Drug Monitoring	Core	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

## Course Description Form

1. Course Name:	
<b>Pharmacy Ethics</b>	
2. Course Code:	
<b>3211</b>	
3. Semester / Year:	
<b>2<sup>nd</sup> semester / 3<sup>rd</sup> year</b>	
4. Description Preparation Date:	
<b>01/03/2024</b>	
5. Available Attendance Forms:	
<b>Theoretical lectures in classroom</b>	
6. Number of Credit Hours (Total) / Number of Units (Total)	
<b>One Credit theory hour/week – One unit</b>	
7. Course administrator's name (mention all, if more than one name)	
Name: Lect. Dr. Omar Salah Aldoori	
Email:	
8. Course Objectives	
<p><b>Course Objectives:</b> The course will provides an overview of ethical issues facing practicing pharmacists in order to enable the student to understand the basic concepts of ethics which formulate the relationship of pharmacist with the patient, colleges, and other health personnel in order to deliver his pharmaceutical services in good way. The course will begin with an introduction to ethics in pharmaceutical practice and then proceed to examine in depth specific topics (Beneficence, Autonomy, Confidentiality, Consent...). The course will include lectures, case analysis, and classroom discussion.</p>	
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>- Theoretical and practical lectures</li> <li>- Daily assignments and discussions</li> </ul>

## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+ 2	2	This course focuses on medical ethics necessary to build the kind of relationship that result in improved therapeutic outcomes	Introduction to Pharmacy Ethics (Theoretical considerations).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
3	1		Code of Ethics for Pharmacists.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
4 + 5 + 6	3		Common Ethical Considerations in Pharmaceutical Care Practice (Beneficence, Autonomy, Honesty, Informed Consent, Confidentiality, Fidelity .....).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
7 + 8	2		Interprofessional Relations.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
9	1		Making ethical decisions.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
10	1		Ethical issues related to clinical pharmacy research.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
11	1		Ethical problems in the pharmacist's clinical practice.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
12	1		Preventing misuse of medicines.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
13 + 14 +15	3		Case studies in pharmacy ethics.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam



## ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Exam: 30 Marks

Final-Term Exam: 70 Marks

## ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Ethics in Pharmacy Practice: A Practical Guide, by Dennis M. Sullivan, Douglas C. Anderson, and Justin W. Cole, latest edition</b>
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Clinical Pharmacy I</b>					
2. Course Code:					
<b>413</b>					
3. Semester / Year:					
<b>1<sup>st</sup> semester / 4<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical lectures in classroom and practical lectures in specialized lab.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit theory hours/week and Two Credit practical hours/week – Three units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Assist Prof. Dr.Mohanad Yasir Radeef, Assist. Lect. Ibraheem Yawr anwar, Assist. Lect. Zainab AH. Ibraheem Email: <a href="mailto:mohanadyasir@tu.edu.iq">mohanadyasir@tu.edu.iq</a>					
8. Course Objectives					
<b>Course Objectives:</b> Teach the students how to treat common diseases and simple illness in community pharmacies. ..... .....					
9. Teaching and Learning Strategies					
<b>Strategy</b>	- Theoretical and practical lectures - Daily assignments and discussions - Training in community pharmacies				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	This course provides main points of how to treat common diseases and simple illness in community pharmacies	Introduction to community pharmacy.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
2	3		Respiratory problems: Cough, Common cold, allergic rhinitis, Otitis media, Laryngitis & Pharyngitis	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

3	4		<b>G.I.T problems: Diarrhea, Constipation, Heart burn and indigestion, IBS and Hemorrhoids</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
4	2		<b>Pediatric care practice : Oral thrush, pinworms and head lice</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
5	5		<b>Skin conditions: Acne, Scabies, Psoriasis, Hair loss, Fungal infection, Eczema and Dermatitis , Dandruff, Cold sore, Corns and Callus.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
6	2		<b>Women's health care: Cystitis and vaginal thrush, primary dysmenorrhea and Premenstrual syndrome.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
7	3		<b>CNS related problems: Headache, Insomnia, Motion sickness, Nausea and vomiting</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
8	1		<b>Eye problems</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
9	1		<b>ENT problems</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
10	1		<b>Oral hygiene, mouth ulcer</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
11	1		<b>Obesity and body weight control.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
12	1		<b>Pain and musculoskeletal disorders</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
13	1		<b>Nicotine replacement therapy ( NRT).</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
14	1		<b>Dietary supplements</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>

15	2	An update in reclassification of OTC drugs ( simvastatin, Tamsulosin & azithromycin).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
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### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 20 Marks

Mid-Term Practical Exam: 20 Marks

Final-Term Exam: 60 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Alison Blenkinsopp, Paul Paxton(eds), Symptoms in the Pharmacy. A Guide to the Management of Common Illness, latest edition</b>
Main references (sources)	<b>Paul Rutter. Community Pharmacy: Symptoms, Diagnosis and Treatment, latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Clinical Pharmacy II</b>					
2. Course Code:					
<b>428</b>					
3. Semester / Year:					
<b>2<sup>nd</sup> semester / 4<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical lectures in classroom and practical lectures in specialized lab.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit theory hours/week and Two Credit practical hours/week – Three units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Lect. Dr. Zainab Mustafa Mahdi, Assist. Lect. Ibraheem Yawr anwar, Assist. Lect. Zainab AH. Ibraheem Email: <a href="mailto:mohanadyasir@tu.edu.iq">mohanadyasir@tu.edu.iq</a>					
8. Course Objectives					
<b>Course Objectives:</b> Teach the students how to treat common diseases in hospitals' wards					
9. Teaching and Learning Strategies					
<b>Strategy</b>	<ul style="list-style-type: none"> <li>- Theoretical and practical lectures</li> <li>- Daily assignments and discussions</li> <li>- Training in Hospital wards</li> </ul>				
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 +2	This course provides main points of how to treat common diseases in hospitals' wards	-Introduction to the concept of clinical pharmacy- its activities and professional responsibilities.( including current state of clinical pharmacy in Iraq) . - An overview of pharmaceutical care practice (the patient care process).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

2	2+2		<b>Hematologic disorders: Anemia and sickle cell disease.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
3	2+2		<b>Hypertension.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
4	2+2		<b>Ischemic heart diseases</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
5	2+2		<b>Heart failure.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
6	2+2		<b>Asthma.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
7	2+2		<b>Peripheral vascular diseases. Chronic obstructive pulmonary disease ( COPD ).</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
8	2+2		<b>Diabetes mellitus &amp; Diabetic ketoacidosis (DKA) .</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
9	2+2		<b>Peptic ulcer disease.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
10	2+2		<b>Tuberculosis</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
11	2+2		<b>Infective meningitis</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
12	2+2		<b>Rheumatoid arthritis (RA) and osteoarthritis (OA)</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
13	2+2		<b>-GIT infections -Gout and hyperuricemia</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>

14	2+2	-Osteoporosis and other metabolic bone disease. -Infectious Endocarditis	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
15	2+2	-Surgical antibiotic prophylaxis -Urinary tract infection (UTI)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 20 Marks

Mid-Term Practical Exam: 20 Marks

Final-Term Exam: 60 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Pharmacotherapy Handbook, Terry L. Schwinghammer, Joseph T. DiPiro, Vicki L. Ellingrod, Cecily V. DiPiro, latest edition.</b>
Main references (sources)	<b>Clinical Pharmacy and Therapeutics E-Book By Roger Walker, latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Communication Skills</b>					
2. Course Code:					
<b>215</b>					
3. Semester / Year:					
<b>2<sup>nd</sup> semester / 4<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical lectures in classroom.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit theory hours/week– Two units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Assist. Lect. Ibraheem Yawr anwar Email: <a href="mailto:mohanadyasir@tu.edu.iq">mohanadyasir@tu.edu.iq</a>					
8. Course Objectives					
<p><b>Course Objectives:</b> Communication skill is one of the missions of pharmacy care practice, aims to develop a conventional relationship between pharmacist and patients, in which information is exchanged, hold in confidence and used to optimize patient care through appropriate drug therapy. This course is intended to pharmacist provide better care to patients, and focus on communication skills necessary to build the kind of relationship that result in improved therapeutic outcomes.</p>					
9. Teaching and Learning Strategies					
<b>Strategy</b>		<ul style="list-style-type: none"> <li>- Theoretical lectures</li> <li>- Daily assignments and discussions</li> </ul>			
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	This course focuses on communication skills necessary to build the kind of relationship (pharmacist-patients and pharmacist-health care providers) that result in improved therapeutic outcomes	Patient-Centered Communication in Pharmacy Practice	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
2	2		Principles and Elements of Interpersonal Communication	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam



3	2		<b>Nonverbal type of communication.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
4	2		<b>Barriers to communication.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
5	2		<b>Listening and empathic responding during communication.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
6	2		<b>Assertiveness.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
7	2		<b>Interviewing and assessment.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
8	2		<b>Helping patients to manage therapeutic regimens.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
9	2		<b>Patient counseling; counseling check list; point-by-point discussion; counseling scenario.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
10	2		<b>Medication safety and communication skills.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
11	2		<b>Strategies to meet specific needs.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
12	2		<b>Communicating with children and elderly about medications.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
13	2		<b>Communication skills and inter-professional collaboration.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
14	2		<b>Electronic communication in healthcare.</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>

15	2		Ethical behavior when communicating with patients.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
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### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 30 Marks

Final-Term Exam: 70 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Robert S. Beardsley, (ed.); Communication Skills in Pharmacy Practice, latest edition.</b>
Main references (sources)	<b>Bruce A. Burger (ed.), Communication Skills for Pharmacists; American Pharmacists Association; latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Applied Therapeutics I</b>					
2. Course Code:					
<b>513</b>					
3. Semester / Year:					
<b>1<sup>st</sup> semester / 5<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical lectures in classroom.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Three Credit theory hours/week– Three units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Lect. Dr. Zainab Mustafa Mahdi, Lect. Dr. Shaimaa Saleh khuder Email:					
8. Course Objectives					
<b>Course Objectives:</b> Educate the fifth stage students important diseases and their therapy. .....					
9. Teaching and Learning Strategies					
<b>Strategy</b>	<ul style="list-style-type: none"> <li>- Theoretical lectures .....</li> <li>- Daily assignments and discussions</li> <li>- Training in hospitals' wards</li> </ul>				
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	This course provides main points of how to treat common diseases in hospitals' wards	-Interpretation of Lab. data. -Dyslipidemia	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
2	3		-Acute coronary syndrome. -Stroke	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
3	3		-Arrhythmias -Viral hepatitis	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam

					<b>Final-Term exam</b>
4	3		<b>-Thrombosis -Acute renal failure (ARF)</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
5	3		<b>-Inflammatory bowel diseases</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
6	3		<b>-Chronic renal failure (CRF)</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
7	3		<b>-Hemodialysis and peritoneal dialysis -Systemic lupus erythematosus (SLE) -Benign prostatic hyperplasia (BPH)</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
8	3		<b>-Acid – base disorders -Urinary incontinence and pediatric enuresis</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
9	3		<b>-Disorders of fluid and electrolytes</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
10	3		<b>-Pain management -Headache disorders -Tobacco use and dependence</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
11	3		<b>-Epilepsy and status epilepticus -Fungal infections</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
12	3		<b>-Parasitic infections -Viral diseases -Parenteral nutrition</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
13	3		<b>-Drug distribution systems</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
14	3		<b>-Pharmacovigilance</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
15	3		<b>-Enteral nutrition -Evidence-based pharmacy practice and</b>	<b>The blackboard PowerPoint slides Case study</b>	<b>Reports Homework Daily quizzes</b>

			<b>medicine.</b>	<b>E-learning</b>	<b>Mid-Term exam</b> <b>Final-Term exam</b>
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### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 30 Marks

Final-Term Exam: 70 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Pharmacotherapy Handbook, Terry L. Schwinghammer, Joseph T. DiPiro, Vicki L. Ellingrod, Cecily V. DiPiro, latest edition.</b>
Main references (sources)	<b>Clinical Pharmacy and Therapeutics E-Book By Roger Walker, latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Applied Therapeutics II</b>					
2. Course Code:					
<b>528</b>					
3. Semester / Year:					
<b>2<sup>nd</sup> semester / 5<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical lectures in classroom.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit theory hours/week– Two units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Assist Prof. Dr.Mohanad Yasir Radeef Email: <a href="mailto:mohanadyasir@tu.edu.iq">mohanadyasir@tu.edu.iq</a>					
8. Course Objectives					
<b>Course Objectives:</b> Educate the fifth stage students the important diseases and their therapy. .....					
9. Teaching and Learning Strategies					
<b>Strategy</b>	<ul style="list-style-type: none"> <li>- Theoretical lectures .....</li> <li>- Daily assignments and discussions</li> <li>- Training in hospitals' wards</li> </ul>				
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	This course provides main points of how to treat common diseases in hospitals' wards	-Thyroid and parathyroid disorders	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
2	2		-Contraception -Endometriosis	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
3	2		-Menstruation related disorders -Hormonal replacement therapy (HRT)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam

					<b>Final-Term exam</b>
4	2		<b>-Cancer treatment and chemotherapy</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
5	2		<b>-Leukemias</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
6	2		<b>-Lymphomas and Multiple myeloma</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
7	2		<b>-Breast and prostate cancers</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
8	2		<b>-HSCT( Hematop. Stem-cell- Transplantation). -Adverse effects of chemotherapy</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
9	2		<b>-Human immunodeficiency virus -Multiple sclerosis</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
10	2		<b>-Adrenal gland disorders -Pituitary gland disorders</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
11	2		<b>-Glaucoma -Alzheimer's disease</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
12	2		<b>-Schizophrenia</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
13	2		<b>-Depressive disorders</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
14	2		<b>-Anxiety disorders -Sleep disorders</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam Final-Term exam</b>
15	2		<b>-Bipolar disorders -Adverse drug reactions</b>	<b>The blackboard PowerPoint slides Case study E-learning</b>	<b>Reports Homework Daily quizzes Mid-Term exam</b>

					<b>Final-Term exam</b>
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### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 30 Marks

Final-Term Exam: 70 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Pharmacotherapy Handbook, Terry L. Schwinghammer, Joseph T. DiPiro, Vicki L. Ellingrod, Cecily V. DiPiro, latest edition.</b>
Main references (sources)	<b>Clinical Pharmacy and Therapeutics E-Book By Roger Walker, latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	



## Course Description Form

1. Course Name:					
<b>Pharmacoeconomics</b>					
2. Course Code:					
<b>527</b>					
3. Semester / Year:					
<b>2<sup>nd</sup> semester / 5<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical lectures in classroom.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit theory hours/week– Two units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Assist Lect. Adnan Mostafa Ismail					
Email:					
8. Course Objectives					
<p><b>Course Objectives:</b> The present course will give students the basic understanding of the tools needed to assess the costs and outcomes of medications and pharmaceutical care services. It will enable participants to evaluate the pharmacoeconomic literature for the purpose of rational decision-making. Students will be exposed to the drug-focused approaches to pharmacoeconomic research. ....</p>					
9. Teaching and Learning Strategies					
<b>Strategy</b>		<ul style="list-style-type: none"> <li>- Theoretical lectures</li> <li>- Daily assignments and discussions</li> </ul>			
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The present course will give students the basic understanding of the tools needed to assess the costs and outcomes of medications and pharmaceutical care services.	Course overview, Changes in health care delivery, overview of pharmacoeconomics.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
2	2		Cost determination.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

3	2		Evaluation of outcomes and effectiveness, types of pharmaco-economic analyses: Cost effectiveness analyses (CEA), cost minimization analyses (CMA).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
4	2		Methods of data collection and analyses, modeling (decision analyses).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
5	2		1st mid-term examination.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
6	2		Incremental analyses; case studies.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
7	2		Evaluation outcomes: Utility and quality of life; types of pharmaco-economic analyses, cost utility analyses (CUA).	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
8	2		Evaluation outcomes: Net benefit, cost utility analyses (CBA), compare and contrast CEA, CUA and CBA.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
9	2		Methods of data collection and analyses: Statistical/Econometric modeling.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
10	2		2nd mid-term examination.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
11	2		Drug-focused versus disease-focused framework for conducting pharmaco-economic analyses.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
12	2		Critical review of pharmaco-economic and quality of life literature.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
13	2		Introduction to epidemiology.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
14	2		Project presentation.	The blackboard PowerPoint slides Case study	Reports Homework Daily quizzes

			E-learning	Mid-Term exam Final-Term exam
15	2	Project presentation.	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 30 Marks

Final-Term Exam: 70 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Bootman JL, Townsend RJ, McGhan WF, (Eds.), Principles of Pharmacoeconomics, Harvey Whitney Books Company, Cincinnati, Oh, latest edition</b>
Main references (sources)	<b>Karen L. Rascati, Essentials of Pharmacoeconomics, latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Therapeutic Drug Monitoring (TDM)</b>					
2. Course Code:					
<b>529</b>					
3. Semester / Year:					
<b>2<sup>nd</sup> semester / 5<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical and practical lectures in classroom.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit theory hours/week and Two Credit practical hours/week – Three units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Lect. Dr. Shaimaa Saleh Khuder, Assist Lect. Zainab AH. Iraheem					
Email:					
8. Course Objectives					
<b>Course Objectives:</b> Provide students with a basic understanding of clinical pharmacokinetics in order to design individual doses for specific medications, which improve the therapeutic response to the drug while reducing the chance of side effects. ....					
9. Teaching and Learning Strategies					
<b>Strategy</b>	- Theoretical and practical lectures - Daily assignments and discussions				
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	This course provides main points of how to calculate the dose of specific drug according to their TDM properties	Course Overview	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
2	2		Review of basic pharmacokinetic (PK)-	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
3	1		Review of basic pharmacodynamic (PD)	The blackboard PowerPoint slides	Reports Homework Daily quizzes

				Case study E-learning	Mid-Term exam Final-Term exam
4	3		Clinical PK equations and calculations	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
5 +6	6		Clinical PK in special population and cases	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
7	4		Clinical PK/PD for Antibiotics (e.g., Aminoglycosides, Vancomycin)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
8	4		Clinical PK/PD for Cardiovascular agents (e.g., Digoxin, Lidocaine, Procainamide/N-Acetyl Procainamide)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
9 + 10	6		Clinical PK/PD for Anticonvulsants (e.g., Phenytoin, Carbamazepine, Valproic Acid, Phenobarbitone / Primidone, Ethosuxsimide)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
11	2		Clinical PK/PD for Immunosprants (e.g., Cyclosporine, Tacrolimus)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
12	4		Clinical PK/PD of other drugs (e.g., Lithium, Theophylline, Anticancer agents, Anticoagulats)	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
13	2		Review	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
14	2		Problems	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
15	2		Problems	The blackboard PowerPoint slides Case study E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

۱۱. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc  Mid-Term Theory Exam: 20 Marks  Mid-Term Practical Exam: 20 Marks  Final-Term Exam: 60 Marks	
۱۲. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	<b>Applied Clinical Pharmacokinetics, by Larry A. Bauer. Latest edition</b>
Main references (sources)	<b>Clinical Pharmacokinetics Concepts and Applications, by Malcolm Rowland and Thomas Tozer; latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	

## Course Description Form

1. Course Name:					
<b>Hospital Training</b>					
2. Course Code:					
<b>5211</b>					
3. Semester / Year:					
<b>2<sup>nd</sup> semester / 5<sup>th</sup> year</b>					
4. Description Preparation Date:					
<b>01/03/2024</b>					
5. Available Attendance Forms:					
<b>Theoretical and practical lectures in Teaching hospital's wards.</b>					
6. Number of Credit Hours (Total) / Number of Units (Total)					
<b>Two Credit practical hours/week – Two units</b>					
7. Course administrator's name (mention all, if more than one name)					
Name: Hospital training committee					
Email:					
8. Course Objectives					
<b>Course Objectives:</b> Teaching students how to apply pharmacy practice in various hospital wards. It includes training in evaluating and following up cases, evaluating therapeutic regimens, recording errors related to drug treatment, and providing ideas to solve problems.					
9. Teaching and Learning Strategies					
<b>Strategy</b>	<ul style="list-style-type: none"> <li>- Theoretical and practical lectures</li> <li>- Training in hospitals' wards</li> <li>- Daily assignments and discussions</li> </ul>				
10. Course Structure					
WW	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	16	This course provides main points and principles of how to deal and treat common diseases in hospitals' wards	Internal medicine ward	Case study PowerPoint slides E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
5-8	16		Surgical ward	Case study PowerPoint slides E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam
9-12	16		Gynaecology and obstetrics ward	Case study PowerPoint slides E-learning	Reports Homework Daily quizzes

					Mid-Term exam Final-Term exam
12-15	12		Pediatrics ward	Case study PowerPoint slides E-learning	Reports Homework Daily quizzes Mid-Term exam Final-Term exam

### ۱۱. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

Mid-Term Theory Exam: 15 Marks

Mid-Term Practical Exam: 15 Marks

Final-Term Exam: 70 Marks

### ۱۲. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<b>Applied Clinical Pharmacokinetics, by Larry A. Bauer. Latest edition</b>
Main references (sources)	<b>Clinical Pharmacokinetics Concepts and Applications, by Malcolm Rowland and Thomas Tozer; latest edition.</b>
Recommended books and references (scientific journals, reports...)	
Electronic references, websites	