



**The University of Jordan**  
**Accreditation & Quality Assurance Center**

**COURSE Syllabus**

1	Course title	<u>Internal Medicine I</u>
2	Course number	<u>1203601</u>
3	<u>Credit hours (theory, practical)</u>	<u>7 (practical)</u>
	<u>Contact hours (theory, practical)</u>	<u>30 (practical)</u>
4	Prerequisites/corequisites	<b>Pharmacotherapy IV</b>
5	Program title	<u>PharmD</u>
6	Program code	
7	Awarding institution	<u>The University of Jordan</u>
8	Faculty	<u>Pharmacy</u>
9	Department	<u>Biopharmaceutics &amp; Clinical Pharmacy</u>
10	Level of course	<u>undergraduate</u>
11	Year of study and semester (s)	<u>First and second semester of the 6<sup>th</sup> year</u>
12	Final Qualification	<u>PharmD</u>
13	Other department (s) involved in teaching the course	<u>Pharmaceutics</u>
14	Language of Instruction	<u>English</u>
15	Date of production/revision	<u>1 February 2016</u>

**16. Course Coordinator:**

Office numbers, office hours, phone numbers, and email addresses should be listed.

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**17. Other instructors:**

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**Comment [aa1]:** Please fill your info.

**18. Course Description:**

*As stated in the approved study plan.*

This hospital training is directed toward training the students to use the theoretical and basic principles of pharmacology, therapeutic and clinical courses in dealing with real cases to identify and resolve different treatment related problems in internal medicine. There are 4 different sub-specialties practiced over the semester (oncology and chemotherapy preparations, critical care, gastro-intestinal and nephrology). Each sub-specialty lasts for 2 to 3 weeks. Students are distributed so each student will be trained on 4 sub-specialties. During each rotation, students handle all the inpatient cases in the team under the supervision and direction of clinical pharmacists (MSc in clinical pharmacy or PharmDs). Students will also cover cases in outpatient clinics. Some of the activities done by students include: solving a case for TRPs, patient counseling, therapeutic drug monitoring, IV preparation, checking dosage regimen, checking drug interactions and assessing safety and efficacy of medications.

1. 19. Course aims and outcomes:

**A- Aims:**

1. To demonstrate the ability of students to search for specific guidelines and use of EBM for controversial area.
2. To learn problem solving skills and analysis when guidelines are unavailable or research in certain area are lacking.
3. To assess the ability of students to identify TRPs and to construct optimal care plan for the patient.
4. To demonstrate the ability of students to determine if the patient achieved the desired outcomes and to determine the appropriate time for follow up evaluation.
5. To demonstrate the ability of students to provide appropriate patient counseling.
6. To know the ability of students to check for the most significant drug- drug interactions among patient's medications and how to monitor and manage such interactions.
7. To assess the ability of students to communicate with health care providers and their ability to provide a clear recommendations to them.

**B- Course Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to ... Successful completion of the course should lead to the following outcomes:

- A. Knowledge and Understanding:** To provide students with the knowledge related to internal 1 most common disorders, clinical manifestations, complications, goal of pharmacotherapy, patient education of selected disorders; as well as the knowledge of medications' mechanism of action, clinical uses, dosing and monitoring parameters.
- B. Intellectual Analytical and Cognitive Skills:** To enable students to identify drug-related problems and recommend the appropriate pharmacotherapy treatment through case discussion.
- C. Subject-Specific Skills:** Student is expected to: Develop the ability to design the rational pharmacotherapy regimen according to the patient specific condition
- D. Transferable Key Skills:**
  - To enable students to have patient communication skill and provide information related to diseases and their management through browsing the Internet professional sites.
  - To enable students to have the skill of data collection and interpretation from medical journal databases (MEDLINE, library) for EBM.

**Program Competencies Achieved:**Patient Care

- 2.1 Recognize main physiological principles that govern normal body functioning
- 2.2 Identify pathophysiological basis of major human diseases
- 2.3 Identify indications, side effects and contraindications of medicines
- 2.4 Identify drug-drug and drug-food interactions of medicines
- 2.5 Identify basic principles of drug pharmacokinetics and recognize disease conditions and other factors that interfere with safety and efficacy of medicines
- 2.6 Assess patients medical records
- 2.7 Respect and protect the confidentiality of patient's information
- 2.8 Maintain, review and update medicine records of patients
- 2.9 Advise patients and other health professionals on proper usage of medicines including their strength, frequency, dosage form and route of administration

Interpersonal and communication:

- 5.1 Communicate effectively with patients and other healthcare professionals
- 5.2 Prepare and deliver presentations effectively
- 5.3 Express ideas, instructions and information in a clear and comprehensible manner
- 5.4 Considers audience feedback to verify their proper understanding
- 5.5 Respond effectively to enquiries presented by patients and other healthcare professionals
- 5.6 Exhibit negotiation and influencing skills to resolve conflicts
- 5.7 Build positive relationships with patients and other healthcare professionals
- 5.8 Acknowledge and respect cultural and religious differences among patients and colleagues
- 5.9 Listen to patients and respect their views and choice of treatment options

**3**Teaching Methods

- ✓ Lectures

**20. Topic Outline and Schedule:**

Varies depending on sub-specialty	
<b>Critical care</b>	
Topic	References
Mechanical ventilation	<ul style="list-style-type: none"> <li>- Overview of mechanical ventilation, UpToDate 2014.</li> <li>- Modes of mechanical ventilation, UpToDate, 2014.</li> <li>- Oxford handbook of critical care, 3<sup>rd</sup> edition, 2009.</li> </ul>
Acid-base disorder	<ul style="list-style-type: none"> <li>- Acid-Base Disorders, Pharmacotherapy-A pathophysiologic approach, Chapter 37, 9<sup>th</sup> ed.</li> </ul>
Acute decompensated heart failure	<ul style="list-style-type: none"> <li>- Acute decompensated heart failure, Pharmacotherapy-A pathophysiologic approach, Chapter 5, 9<sup>th</sup> ed.</li> <li>- HFSA guideline, 2010.</li> <li>- Applying Consensus Guidelines in the Management of Acute Decompensated Heart Failure, 2006.</li> </ul>
Stress induce-ulcer prophylaxis	<ul style="list-style-type: none"> <li>- Stress ulcer prophylaxis in the intensive care unit, UpToDate, 2014.</li> </ul>
Choosing the sedative agents	<ul style="list-style-type: none"> <li>- Sedative-analgesic medications in critically ill patients: Properties, dosage regimens, and adverse effects, UpToDate, 2014.</li> <li>- Sedative-analgesic medications in critically ill patients: Selection, initiation, maintenance, and withdrawal, UpToDate, 2014</li> </ul>
Sepsis, sever sepsis and septic shock	<ul style="list-style-type: none"> <li>- Sever Sepsis and septic shock, Pharmacotherapy-A pathophysiologic approach, Chapter 97, 9<sup>th</sup> ed.</li> <li>- Surviving sepsis camping: international guidelines for management of ever septic and septic shock, 2013.</li> </ul>
Hypokalemia and Hyperkalemia management	<ul style="list-style-type: none"> <li>- Disorders of Potassium and Magnesium Homeostasis, Pharmacotherapy-A pathophysiologic approach, Chapter 36, 9<sup>th</sup> ed</li> <li>- Treatment and prevention of hyperkalemia in adults, UpToDate, 2012.</li> <li>- Clinical manifestations and treatment of hypokalemia, UpToDate, 2013.</li> </ul>
Compatibility of IV mixtures with different diluents and their stability	<ul style="list-style-type: none"> <li>- Handbook on Injectable Drugs, Trissel</li> <li>- <a href="http://www.globalrph.com/">http://www.globalrph.com/</a></li> </ul>
<b>Gastrointestinal/Nephrology</b>	
Acute pancreatitis	Acute pancreatitis guideline 2013 ( Clinical Management of Patients With Acute Pancreatitis , GASTROENTEROLOGY 2013;144:1272-1281 ) ,
PUD	PUD guideline 2007 (Am Fam Physician 2007;76:1005-12,

	1013. Copyright © 2007 American Academy of Family Physicians )  Tables from Management of duodenal ulcers in patients infected with Helicobacter pylori (Causes of refractory or recurrent peptic ulcer disease ) (American College of Gastroenterology first-line <i>H. pylori</i> regimens (adult dosing, oral administration)
Endoscopy	Uptodate : Patient information: Upper endoscopy (The Basics)
GERD	Uptodate : Medical management of gastroesophageal reflux disease in adults .  Uptodate : Patient information: Acid reflux (gastroesophageal reflux disease) in adults (The Basics)  Approach to refractory gastroesophageal reflux disease in adults : Management algorithm of GERD patient who failed PPI once daily
IBD ( crohn's disease / ulcerative colitis )	Guidelines for the management of inflammatory bowel disease in adults , British guideline 2010 <b>OR:</b> Management of Crohn ' s Disease in Adults , 2009 , merican College of Gastroenterology Ulcerative Colitis Practice Guidelines in Adults: American College of Gastroenterology, 2010  Uptodate : Management of patients with a colostomy or ileostomy  Uptodate : Patient information: Colostomy care (The Basics)  Uptodate : Pouchitis: Management
Cirrhosis	UpToDate : 1- Cirrhosis in adults_ Overview of complications, general management, and prognosis. 2- Ascites in adults with cirrhosis_ Initial therapy 3- Hepatic encephalopathy in adults_ Treatment. 4- Portal hypertension in adults 5- Patient information_ Esophageal varices (The Basics) 6- Coagulation abnormalities in patients with liver disease 7- Hepatorenal syndrome

Content	Reference	Week	ILO/s
Using different equations to estimate creatinine clearance or GFR in case of acute or	Dipiro chap: 50	<u>Throughout the rotation</u>	Students should be familiar with different types of equations and the conditions used in.

<p>stable kidney function.</p> <p>Knowing the advantages and disadvantages in every equation and when it is applicable and could be used and when isn't versus 24-hrs urine collection.</p>			
<p>Chronic Kidney Disease (stage 1 – 4)</p>	<p>KDOQI Guidelines on the management of chronic kidney disease and its complications such as anemia, renal osteodystrophy, electrolytes abnormalities...etc. Dipro chap: 52 &amp; 53</p>	<p><u>Throughout the rotation</u></p>	<p>Students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• Definition</li> <li>• Risk factors</li> <li>• Classification and Differentiation between CKD stages</li> <li>• Using the suitable equation to calculate the GFR, and the advantage and disadvantage in every equation and when it is applicable and could be used and when isn't.</li> <li>• Prevention and management of CKD complications: <ul style="list-style-type: none"> <li>- Anemia</li> <li>- Secondary renal osteodystrophy</li> <li>- Secondary HTN</li> <li>- Electrolytes abnormalities.</li> </ul> </li> <li>• Supportive therapies that may help to slow the rate of CKD progression include dietary protein restriction, lipid-lowering medications, smoking cessation, and anemia management.</li> <li>• Medication (Exact mechanism of action, major SE and the mechanism of SE, TDM for specific medication, Drug-Drug interaction).</li> <li>• Management and prevention of CKD complications.</li> <li>• Patient education about CKD and its complications.</li> </ul>
<p>Dialysis (Hemodialysis)</p>	<p>KDOQI Guidelines on the management of dialysis and its complications such as</p>	<p><u>Throughout the rotation</u></p>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• Definition</li> </ul>

	anemia, renal osteodystrophy, electrolytes abnormalities, hypotension, cramps, infection...etc. Dipiro chap: 54		<ul style="list-style-type: none"> <li>• Risk factors</li> <li>• Classification and diagnosis</li> <li>• Using the suitable equation to the efficacy and adequacy of dialysis procedure</li> <li>• Differentiation between peritoneal dialysis and hemodialysis</li> <li>• Prevention and management of dialysis complications: <ul style="list-style-type: none"> <li>- Anemia</li> <li>- Secondary renal osteodystrophy</li> <li>- Secondary HTN</li> <li>- Infection</li> <li>- Thromboembolism</li> <li>- Electrolytes abnormalities.</li> </ul> </li> <li>• Medication (Exact mechanism of action, major SE and the mechanism of SE, Drug-Drug interaction).</li> <li>• Management and prevention of dialysis complications</li> <li>• Patient education about dialysis.</li> </ul>
Acute Kidney Injury	Acute Kidney Injury, UK Renal Association 5th Edition, 2011 Dipiro Chap: 51	<u>Throughout the rotation</u>	<p>students should be familiar with the following</p> <ul style="list-style-type: none"> <li>• Definition</li> <li>• Risk factors</li> <li>• Classification</li> <li>• Differentiation of different types of AKI as: <ul style="list-style-type: none"> <li>- Pre-renal AKI.</li> <li>- Intrinsic renal AKI.</li> <li>- Post renal AKI.</li> <li>- AKI alone.</li> <li>- AKI on top of CKD.</li> </ul> </li> <li>• Using the proper equation to calculate the GFR in case of AKI, and if any dosage adjustment is needed.</li> <li>• Medication (Exact mechanism of action, major SE and the mechanism of SE, Drug-Drug interaction).</li> <li>• Prevention and</li> </ul>

			supportive management of different types of AKI. <ul style="list-style-type: none"> <li>• Patient education about AKI.</li> </ul>
<b>Oncology</b>			
Content	Reference	Week	ILO/s
Chemotherapy induced nausea and vomiting	NCCN	<u>Throughout the rotation</u>	students should be familiar with the following: <ul style="list-style-type: none"> <li>• Definition</li> <li>• Risk factors</li> <li>• Classification</li> <li>• Anti-emesis medication (Exact mechanism of action, major SE Drug-Drug interaction).</li> <li>• Proper prophylaxis</li> <li>• Management of nausea and vomiting in case of prophylaxis failure</li> <li>• Patient education.</li> </ul>
Pain management	NCCN	<u>Throughout the rotation</u>	students should be familiar with the following: <ul style="list-style-type: none"> <li>• Causes</li> <li>• Classification of severity</li> <li>• Opioid (mechanism of action, major SE and the mechanism of SE)</li> <li>• Management of pain in cancerous patient</li> <li>• Management of pain with adjuvant agents.</li> <li>• Patient education about HTN.</li> </ul>
Anemia related to chemotherapy	NCCN	<u>Throughout the rotation</u>	students should be familiar with the following: <ul style="list-style-type: none"> <li>• Symptoms and Causes of anemia</li> <li>• RBC transfusion indication, advantage and SE and target level</li> <li>• Management with Erythropoietin and SE</li> <li>• Patient education.</li> </ul>
Infection related to cancer	NCCN	<u>Throughout the rotation</u>	students should be familiar with the following:

			<ul style="list-style-type: none"> <li>• Most common suspected infection</li> <li>• Risk factor for infection.</li> <li>• Different antibiotic, antifungal and antiviral medications (mechanism of action, major SE and the mechanism of SE)</li> <li>• Management of neutropenic fever</li> <li>• When to use prophylaxis for different type of cancer</li> <li>• Patient education.</li> </ul>
Myeloid growth factor	NCCN	<u>Throughout the rotation</u>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• definition</li> <li>• different type of colony stimulating factor (mechanism of action, major SE</li> <li>• use of CSF as prophylaxis</li> <li>• Patient education about CSF.</li> </ul>
VTE in cancer patient	NCCN	<u>Throughout the rotation</u>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• Causes</li> <li>• Risk factor</li> <li>• Anticoagulants (mechanism of action, major SE</li> <li>• Management of HIT</li> <li>• When to use of VTE prophylaxis.</li> <li>• Treatment of VTE and PE</li> </ul>
Neutropenic fever treatment	IDSA 2010	<u>Throughout the rotation</u>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• definition</li> <li>• treatment of choice,</li> <li>• use of CSF as treatment</li> <li>• Patient education about NF.</li> <li>• Treatment of Afebrile neutropenia</li> <li>• Monitoring parameters</li> </ul>
Hypercalcemia in malignancy	Uptodate	<u>Throughout the rotation</u>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• Causes</li> <li>• Classification of severity</li> </ul>

			<ul style="list-style-type: none"> <li>• Different medications to treat hypercalcemia (mechanism of action, major SE)</li> <li>• Management of hypercalcemia with adjuvant agents.</li> <li>• Patient education about hypercalcemia.</li> </ul>
Tumor lysis syndrome TLS	Journal of oncology	<u>Throughout the rotation</u>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• Definition</li> <li>• Causes</li> <li>• Classification of severity</li> <li>• Agents use as prophylaxis (mechanism of action, major SE)</li> <li>• Management of TLS.</li> <li>• Patient education about TLS.</li> </ul>
Oral and enterotoxicity of chemotherapy 1-Xerestomia and mucosities 2 -anorexia 3-oral candidacies	Uptodate	<u>Throughout the rotation</u>	<p>students should be familiar with the following:</p> <ul style="list-style-type: none"> <li>• Common SE of chemotherapy</li> <li>• Causes and pathophysiology</li> <li>• Classification of severity (grading system of SE)</li> <li>• Agents use as prophylaxis</li> <li>• Management of toxicity specific agent.</li> <li>• Patient education.</li> </ul>
-Cardiotoxicity of anthracycline -Cystities	Uptodate	<u>Throughout the rotation</u>	
Pharmacology and Toxicity of chemotherapy agents -Platinum agents (ex.Cisplatin) -Anthracyclines ex.doxorubicin -Vina alkaloid ex.Vincristine -Methotrexate, Etoposide, Ara-C, Ifosphamide and cyclophosmimide , Docetaxel, Infiximab	Uptodate/ Dipiro DI handbook- oncology	<u>Throughout the rotation</u>	
Common chemotherapy regimen used for cancer ALL, AML, NHL, HL and colorectal cancer	Up to date -Dipiro -others	<u>Throughout the rotation</u>	students should be familiar with the most common protocols and toxicity

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**21. Teaching Methods and Assignments:**

Development of ILOs is promoted through the following teaching and learning methods:

ILO/s	Learning Methods	Evaluation Methods
A B C D	-Hospital Clinical Pharmacy rounds -Hospital Medical rounds (with MD consultants) -Homework and Assignments -Presentation.	-Exam -Oral Discussions -Pharmacy practice manual. -Homework and assignments -Quiz, presentation.

**Learning skills:****Critical thinking****Digital literacy****Problem-solving skills****Self-directed learning****Scientific reasoning****Communication skills****Team and group working****22. Evaluation Methods and Course Requirements:**

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

- Exam
- Oral Discussions
- Pharmacy practice manual.
- Homework and assignments
- Quiz, presentation.

**23. Course Policies:****A- Attendance policies:**

Being 15 minutes late for two days is considered as one absence

One absence is given first warning

Two absences merits dismissing student from class

***Other hospital clerkship specific policies:***

**In each training course the students will be divided into groups. Each group will undergo training in the hospital for two weeks -daily (Sunday-Thursday), from (8.00 AM-2:00 PM).**

- Students will require doing the following during their internship:

1. Students must attend a minimum of 2 teaching rounds per week.
2. Students will be responsible for one full case 1<sup>st</sup> week (follow up until DISCHARGE), then two cases per week.
3. Students must conduct full patient interview and counseling for full case, otherwise case will not be accounted for, and student must submit another case or receive a "zero" for that certain case.
4. Students must pick their main full case within the first 2 days of the week (Sunday or Monday), By Tuesday, they must have read about the disease and medications and prepared primary PCP. Students will be asked about their cases and input on their cases during the week.
5. Students must attend daily morning report and clinical pharmacy round and be prepared for any questions the preceptor may have regarding their case as well as cases that other members of their group have.
6. Students will have a weekly case discussion (during same week of particular cases) with their supervisor and must be fully prepared. Anything regarding disease, pharmacotherapy or pharmacology of drugs may be asked.
7. Students will be assigned a topic by their preceptor in whom they must prepare a brief presentation (no longer than ten minutes). There will be one presentation per student per rotation. Topic will be assigned by preceptor.
8. Attendance will be taken daily, and a tardiness of 15 minutes or more will be considered an absence.
9. If a student is caught cheating or filling manual with false data then he/she will receive a zero in the area they are caught cheating in.

**\*\*\* At the beginning of each week (Sunday) except the first week, students must submit full cases. Marks will be deducted for late submission.**

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

Will result in zero achievement unless health report or other significant excuse is documented.

C- Health and safety procedures:

Before training, it is mandatory to get blood tests for Hepatitis B, C and HIV.

Flue and H1N1 vaccination are obligatory to obtain prior to training

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together

- 1) Failing the subject he/she cheated at
- 2) Failing the other subjects taken in the same course
- 3) Not allowed to register for the next semester. The summer semester is not considered as a

semester

E- Grading policy:

Evaluation	Point %	Date
<b>Assessment, evaluation and Attitude</b>	5	Determined with each students group
<b>Presentations</b>	5	Starting from the Tuesday of 1 <sup>st</sup> week of each rotation.
<b>Discussion with PhD holder</b>	10	Arranged with the PhD holder
<b>Homework and Assignments/quizzes</b>	10	Short assignments and homework on daily basis during the rotation.
<b>Oral case discussion of cases</b>	15	At the beginning of each week (Sunday) except the first week
<b>Pharmacy practice manual grading</b>	15	At the beginning of each week (Sunday) except the first week, students must submit full cases
<b>Final Exam</b>	40	

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

Classrooms, internet classes, hospital training site at RMS, JUH and PHH

#### 24. Required equipment:

Data-show and internet connection

#### 25. References:

A- Required book (s), assigned reading and audio-visuals:

ISBN	Title	Author	Year
978-1585283-28-6	Extemporaneous Formulations for Pediatric, Geriatric, and Special Needs Patients, 2nd Edition	Rita K. Jew, Winson Soo-Hoo, Sarah C. Erush	
978-1585283-42-2	Extended Stability for Parenteral Drugs, 5th Edition	Bing, Caryn Dellamorte and Nowobilski-Vasilios, Anna Nowobilski-Vasilios	

978-1-4496-3397-4	Cancer Therapy: Prescribing and Administration Basics	Trinh Pham, Lisa Holle	2015
ISBN: 978-1-4511-0145-4	The Chemotherapy Source Book, Fifth Edition	Michael C. Perry, M.D.; Donald C. Doll, M.D.; and Carl E. Freter, M.D.	2012
978-1-58528-228-9	Fundamentals of Geriatric Pharmacotherapy: An Evidence-Based Approach	Lisa C. Hutchison, Pharm.D., MPH, FCCP, BCPS; and Rebecca B. Sleeper, Pharm.D., FASCP, BCPS	2010
978-1451191042	Healthy Aging: Principles and Clinical Practice for Clinicians	Virginia Burggraf, Kye Y. Kim, Aubrey L. Knight	2014
978-1-59195-298-5	Anesthesiology & Critical Care Drug Handbook, 10th Edition	Baughman VL, Golembiewski J, Gonzalez JP, Alvarez W	2011
978-1-4511-1221-4	Antibiotic Basics for Clinicians, Second Edition	Alan R. Hauser	2012
978-1-60913-713-7	Applied Therapeutics: The Clinical Use of Drugs, 10th Edition	Brian K. Alldredge, Pharm.D.; Robin L. Corelli, Pharm.D.; Michael E. Ernst, Pharm.D.; B. J. Guglielmo Jr., Pharm.D.; Pamala A. Jacobson, Pharm.D.; Wayne A. Kradjan, Pharm.D.; and Bradley R. Williams, Pharm.D	2012
978-0-07-180053-2	Pharmacotherapy: A Pathophysiologic Approach, Ninth Edition	Joseph DiPiro, Pharm.D., FCCP; Robert Talbert, Pharm.D., FCCP,	2014

		BCPS; Gary Yee, Pharm.D., FCCP; Barbara Wells, Pharm.D., FASHP, FCCP, BCPP; and L. Michael Posey, BS Pharm		
978-1932658-248	Gastroenterology and Nutrition I and II - PSAP-VII, Book 11	ACCP		2012
978-1-932658-56-9	Neurology and Psychiatry I, II, and III - PSAP-VII, Book 10	ACCP		2012
978-1-932658-55-2	Infectious Diseases I, II, and III - PSAP-VII, Book 9	ACCP		2012
ISBN: 978-1-932658-53-8	Geriatrics I, II, and III - PSAP-VII, Book 7	ACCP		2011
978-1-932658-52-1	Oncology I, II, and III - PSAP-VII, Book 6	ACCP		2011
978-1-932658-46-0	Critical and Urgent Care I, II, and III - PSAP-VII, Book 2	ACCP		2010
978-1-880401-01-09	Critical and Urgent Care - PSAP 2014 Book 1	ACCP		2014
ISBN-13: 78-1-932658-93-4	Cardiology and Endocrinology - PSAP 2013 Book 1	ACCP		2013
ISBN-13: 978-1-932658-97-2	Special Populations - PSAP 2013 Book 2	ACCP		2013
ISBN-13: 978-1-	Chronic Illnesses - PSAP 2014 Book 2	ACCP		2014

939862-07-5			
978-1-58528-343-9	Basic Skills in Interpreting Laboratory Data, Fifth Edition	Mary Lee	2013

B- Recommended books, materials, and media:

1. Clinical Pharmacy and Therapeutics, ed. Walker & Edwards, 5th edition, 2012
2. Basic & Clinical Pharmacology, ed. Katzung, 12 th edition

## 26. Additional information:

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Name of Course Coordinator: Amal Akour-Signature: ----- Date:Feb, 8, 2016

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: Nailya Bulatova Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: -----Signature: -----

Copy to:  
Head of Department  
Assistant Dean for Quality Assurance  
Course File