

Integrated Pharmacotherapy 2: Infectious Diseases

PHAR 7582

Fall Semester 2023

Course Description

This integrated pharmacy course focuses on the application of skills and resources needed for pharmacists to guide patients' infectious-related needs.

Additional Course Information

This course will integrate clinical microbiology, the pharmacology and medicinal chemistry of antimicrobial agents, and the epidemiology and pathophysiology of various bacterial, viral, fungal and parasitic infections. The therapeutic application of anti-infective agents for the treatment and prophylaxis of infectious disease will be discussed, along with the dosing, adverse effects, drug interactions, and clinical monitoring parameters to promote their cost-effective, safe, and appropriate use.

Course Credit

5 credit hours

Class Meeting Days, Time & Location

Wednesdays: 2:00pm – 5:00pm; W.T. Brookshire Hall, Room 136

Fridays: 2:00pm – 4:00pm; W.T. Brookshire Hall, Room 136

Course Coordinator

Jonathan Newsome, PharmD, BCGP

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Office hours: Monday: 12:30pm – 1:45pm; Wednesday: 12:30pm – 1:45pm; other times by appointment

Preferred method of contact: E-Mail

Fisch College of Pharmacy (FCOP) and UT Tyler Policies

This is part 1 of the syllabus. Part 2 contains UT Tyler and the FCOP course policies and procedures. These are available as a PDF at <https://www.uttyler.edu/pharmacy/academic-affairs/files/fcop-syllabus-policies.pdf>.

Required Materials

Most course required materials are available through the Robert R. Muntz Library. These materials are available either online* (<http://library.uttyler.edu/>) or on reserve†.

1. *Jawetz, Melnick, & Adelberg's Medical Microbiology, 28th Edition. Riedel S, Hobden JA, Miller S, *et al.* eds. McGraw-Hill, 2019. Available via *AccessPharmacy*®
2. *Basic and Clinical Pharmacology, 14th Edition. Katzung BG. ed. McGraw-Hill, 2017. Available via *AccessPharmacy*®
3. *Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy Fourth Edition, 4th Edition. Golan DE, Armstrong EJ, Armstrong AW. eds. Wolters Kluwer, 2017. Available via *LWW Health Library*®
4. *Antibiotic Basics for Clinicians, 3rd Edition. Houser AR. ed. Wolters Kluwer, 2019. ISBN: 978-1-49638-448-5. Available via *LWW Health Library*®
5. *Pharmacotherapy: A Pathophysiologic Approach, 11th Edition. DiPiro JT, Yee GC, Posey LM, *et al.* eds. McGraw-Hill, 2020. Available via *AccessPharmacy*®
6. *Basic Concepts in Pharmacology: What You Need to Know for Each Drug Class, 5th Edition. Stringer JL. McGraw-Hill, 2017. Available via *AccessPharmacy*®

- *Applied Therapeutics: The Clinical Use of Drugs, 11th Edition. Zeind CS, Carvalho MG. eds. Wolters Kluwer, 2018. Available via *LWW Health Library*[®]
- An Introduction to Medicinal Chemistry, 6th Edition. Graham Patrick. Oxford University Press, 2017. ISBN: 978-0-19874-969-1
- Other required materials will be posted on the classes' Canvas site. The site address is: uttyler.edu/canvas.

Recommended Materials

Most course recommended materials are on reserve† at the Robert R. Muntz Library.

- †Basic Skills in Interpreting Laboratory Data, 6th Edition. Lee M. ed. American Society of Health-System Pharmacist, 2017. ISBN: 978-1-58528-343-9.
- The Sanford Guide to Antimicrobial Therapy 2022, 52nd Edition. Gilbert DN, Chambers HF, Saag MS, *et al.* eds. Antimicrobial Therapy, Inc, 2020. ISBN: 978-1-944272-21-0.

Course Format

The course may include, but are not limited to, the following activities:

- Independent study of selected readings
- Individual active learning strategies:
 - Individual readiness assessment tests (iRATs)
 - Individual application of content and concepts
 - Individual presentation of content and concepts
 - SOAP note(s)
- Team-based active learning strategies:
 - Team readiness assessment tests (tRATs)
 - Team application of content and concepts
 - Team presentation of content and concepts
 - Team project(s)
 - SOAP note(s)
- Lecture
- Educational video clips (online and in class)
- Independent preparation of reflection papers

Course Learning Outcomes (CLOs)

CLOs	PLO(s) Assessed for this CLO	EPAs	Assessment Methods	Grading Method	ACPE Std. 11 & 12
1. Identify clinically relevant pathogens involved in the etiology of infectious diseases.	1	1, 2	1, 2	ES	/
2. Recognize the clinical presentation and identify distinguishing pathophysiologic features of selected infectious diseases.	1, 6	1, 2	1, 2	ES	4
3. Identify antimicrobial agents and their distinguishing characteristics, including mechanisms of action, spectrum of activity, drug interactions, patient counseling points, and adverse effects.	1, 6, 7	1, 2	1, 2, 3	ES, RUB	/
4. Formulate appropriate antimicrobial regimens for prophylactic, empiric, and definitive therapy for selected infectious diseases.	1, 2, 6	2, 3, 4, 5	1, 2	ES	1, 4
5. Determine the appropriateness of antimicrobial therapy and recommend modification to therapeutic regimens based on disease state criteria and/or patient-specific parameters.	1, 2, 6	2, 3, 4, 5	1, 2	ES	1, 4

Course Assessment Methods

	Assessment Method	Description
1	Final Exam Multiple Choice or Multiple Selection Question(s)	<i>Standard MCQ and Select All That Apply questions.</i>
2	Final Exam Open Ended Question(s)	<i>Constructed-Response/Fill-in-the-Blank/Matching questions, Short-Answer questions, Hot Spot questions.</i>
3	Skills Assessment	<i>Rubric-based assessments on patient counseling.</i>

Grading Policy & Grade Calculation

Grades will be determined based on evaluation of individual and team readiness assessment tests (iRATs, tRATs), individual and team cumulative assessment tests (iCATs, tCATs), midterm examinations, final written examinations, skills assessments, graded application assignments, participation in team-based projects, peer evaluations and other assessment methods that may include, but not limited to, Objective Structured Clinical Examinations (OSCE). Examinations, iRATs/tRATs and iCATs may consist of, but not limited to, multiple-choice, true/false, fill in the blank, short-answer, essay, and problem-based questions. **Backwards navigation will not be available on summative assessments (e.g. iCATs and Final Examination) administered via ExamSoft.**

During the time the course is in progress, students whose cumulative course percentage falls below 75.0% may receive an academic alert and be subject to periodic course content review in special sessions with the course instructor(s). The student's faculty advisor may receive an academic alert to act upon on the student's behalf.

All examinations, tests, and assignments, including the final examination, may be **cumulative**. Students are responsible for material presented during the prior courses. The grading scale for all graded material is below. The final course grade will be assigned according to the calculated percentage and the **percentages will not be rounded upward or downward**. For additional information, see examination/assessment policy below.

Standard Grade Calculation*

Individual Component	95%
iRATs/Individual Applications/Activities (iAPPs)	5%
Unit 1 Assessment (iCAT)	20%
Unit 2 Assessment (iCAT)	20%
Unit 3 Assessment (iCAT)	20%
Cumulative Final Examination	30%
Team Component	5%
tRATs/Team Applications (tAPPs)	5%
Total	100%

***The final course letter grade will be determined according to the following grading scheme:**

A	90 - 100 %
B	80 - 89.999 %
C	70 - 79.999 %
D	65.0 - 69.999 %
F	< 65.0 %

PHAR 7582 Course Schedule
Fall Semester 2023

Week	Day	Date	Time	Topic	Unit	Faculty	CLO	WSOP Category	Disease State
Unit I: Clinical Microbiology and Pharmacology									
1	Wed	8/23/23	2:00pm	Course Overview	I	Newsome	/	/	/
			3:00pm	Infectious Disease Introduction and Terminology		Young	2	/	/
			4:00pm	Clinical Microbiology: Bacteriology		Young	2		Clinical Chemistry
	Fri	8/25/23	2:00pm	*Clinical Microbiology: Bacteriology		Young	2	/	Medical Microbiology
			3:00pm	Clinical Microbiology: Bacteriology		Young	1	/	Medical Microbiology
2	Wed	8/30/23	2:00pm	*Clinical Microbiology: Clinically Important Bacteria	Young	1	/	Medical Microbiology	
			3:00pm	Clinical Microbiology: Clinically Important Bacteria	Young	1	/	Medical Microbiology	
			4:00pm	Clinical Microbiology: Clinically Important Bacteria	Young	1	/	Medical Microbiology	
	Fri	9/1/23	2:00pm	*Antimicrobial Pharmacotherapy: Cell Wall Synthesis Inhibitors	Brazill	3	S15.01, S15.16	Pharmacology	
			3:00pm	Antimicrobial Pharmacotherapy: Cell Wall Synthesis Inhibitors	Brazill	3	S15.01, S15.16	Pharmacology	
3	Mon	9/4/23	2:00pm 3:00pm	Labor Day Holiday: NO CLASSES					
	Wed	9/6/23	2:00pm	*Antimicrobial Pharmacotherapy: Protein Synthesis Inhibitors	I	Brazill	3	S15.01, S15.16	Pharmacology
3:00pm			Antimicrobial Pharmacotherapy: Protein Synthesis Inhibitors	Brazill		3	S15.01, S15.16	Pharmacology	
4:00pm			Antimicrobial Pharmacotherapy: Protein Synthesis Inhibitors	Brazill		3	S15.01, S15.16	Pharmacology	
Fri	9/9/23	2:00pm	*Antimicrobial Pharmacotherapy: DNA Synthesis & Replication Inhibitors	Brazill		3	S15.01, S15.16	Pharmacology	
		3:00pm	Antimicrobial Pharmacotherapy: DNA Synthesis & Replication Inhibitors	Brazill		3	S15.01, S15.16	Pharmacology	
4	Wed	9/13/23	2:00pm	*Antimicrobial Medicinal Chemistry: Cell Wall Synthesis Inhibitors	I	Adbelaziz	3	S15.01, S15.16	Medicinal Chemistry
			3:00pm	Antimicrobial Medicinal Chemistry: Cell Wall Synthesis Inhibitors		Adbelaziz	3	S15.01, S15.16	Medicinal Chemistry
			4:00pm	Antimicrobial Medicinal Chemistry: Cell Wall Synthesis Inhibitors		Adbelaziz	3	S15.01, S15.16	Medicinal Chemistry
	Fri	9/15/23	2:00pm	*Antimicrobial Medicinal Chemistry: Protein Synthesis Inhibitors		Adbelaziz	3	S15.01, S15.16	Medicinal Chemistry
			3:00pm	Antimicrobial Medicinal Chemistry: Protein Synthesis Inhibitors		Adbelaziz	3	S15.01, S15.16	Medicinal Chemistry
5	Wed	9/20/23	2:00pm 3:00pm	UNIT I ASSESSMENT 2:00p – 4:00p					
	Unit II: Bacterial Infections								
6	Fri	9/25/23	2:00pm	Antimicrobial Regimen Selection	I	Smith	4, 5	S15.16	Medical Microbiology
			3:00pm	Antimicrobial Regimen Selection		Smith	4, 5	S15.16	Medical Microbiology
6	Wed	9/27/23	2:00pm	Antimicrobial Stewardship	I	Lee	5	S15.17	Pharmacotherapy
			3:00pm	Antimicrobial Stewardship		Lee	5	S15.17	Pharmacotherapy
			4:00pm	*Antimicrobial Prophylaxis in Surgery/Surgical Site Infections		Lee	1, 2, 4	S15.20	Pharmacotherapy
7	Fri	9/29/23	2:00pm	*Skin and Soft Tissue Infections	I	Smith	1, 2, 4	S15.06	Pharmacotherapy
			3:00pm	Skin and Soft Tissue Infections		Smith	1, 2, 4	S15.06	Pharmacotherapy
7	Wed	10/4/23	2:00pm	*Bone and Joint Infections	I	Smith	1, 2, 4	S15.11	Pharmacotherapy
			3:00pm	*Urinary Tract Infections		Smith	1, 2, 4	S15.09A/B	Pharmacotherapy
			4:00pm	Prostatitis		Smith	1, 2, 4	S15.27	Pharmacotherapy
	Fri	10/6/23	2:00pm	*Clostridioides difficile Infection		Lee	1, 2, 4	S15.23	Pharmacotherapy
			3:00pm	Gastrointestinal and Intra-Abdominal Infections		Lee	1, 2, 4	S15.08, S15.25	Pharmacotherapy
8	Wed	10/11/23	2:00pm	*Sexually Transmitted Infections	I	Brazill	1, 2, 4	S15.10	Pharmacotherapy
			3:00pm	Sexually Transmitted Infections		Brazill	1, 2, 4	S15.10	Pharmacotherapy
			4:00pm	Sexually Transmitted Infections		Brazill	1, 2, 4	S15.10	Pharmacotherapy
	Fri	10/13/23	2:00pm	*Infective Endocarditis/Central Nervous System Infections		Lee	1, 2, 4	S15.26, S15.02	Pharmacotherapy
			3:00pm	Infective Endocarditis/Central Nervous System Infections		Lee	1, 2, 4	S15.26, S15.02	Pharmacotherapy
9	Wed	10/18/23	2:00pm	*Upper Respiratory Tract Infections	I	Newsome	1, 2, 4	S15.03	Pharmacotherapy
			3:00pm	Upper Respiratory Tract Infections		Newsome	1, 2, 4	S15.03	Pharmacotherapy
			4:00pm	Upper Respiratory Tract Infections		Newsome	1, 2, 4	S15.03	Pharmacotherapy
	Fri	10/20/23	2:00pm	*Lower Respiratory Tract Infections		Smith	1, 2, 4	S15.04	Pharmacotherapy
			3:00pm	Lower Respiratory Tract Infections		Smith	1, 2, 4	S15.04	Pharmacotherapy
10	Wed	10/25/23	2:00pm 3:00pm	UNIT II ASSESSMENT 2:00p – 4:00p					
			Unit III: Viral, Fungal, Parasitic, and Mycobacterial Infections						

10	Fri	10/27/23	2:00pm	Clinical Microbiology: Virology	III	Newsome	1	/	Medical Microbiology
			3:00pm	*Antimicrobial Pharmacotherapy: Antiviral/Antiretroviral Agents		Newsome	3	S15.01	Pharmacology
11	Wed	11/1/23	2:00pm	*Antimicrobial Medicinal Chemistry: Antiviral/Antiretroviral Agents		Adbelaziz	3	S15.01	Medicinal Chemistry
			3:00pm	Antimicrobial Medicinal Chemistry: Antimycobacterial Agents		Adbelaziz	3	S15.01	Medicinal Chemistry
			4:00pm	Antimicrobial Medicinal Chemistry: Antimycobacterial Agents		Adbelaziz	3	S15.01	Medicinal Chemistry
11/3/23	Fri	2:00pm	*Antimicrobial Pharmacotherapy: Antiviral Agents--Influenza	Newsome		3	S15.01	Pharmacology	
		3:00pm	*Influenza	Newsome		1, 2, 4	S15.05	Pharmacotherapy	
12	Wed	11/8/23	2:00pm	Clinical Microbiology: Mycology		Smith	1	/	Medical Microbiology
			3:00pm	*Antimicrobial Pharmacotherapy: Antifungal Agents		Smith	3	S15.01	Pharmacology
			4:00pm	*Antimicrobial Pharmacotherapy: Antifungal Agents		Smith	3	S15.01	Pharmacology
	11/10/23	Fri	2:00pm	Antimicrobial Medicinal Chemistry: Antifungal Agents		Adbelaziz	3	S15.01	Medicinal Chemistry
			3:00pm	*Antimicrobial Medicinal Chemistry: Antifungal Agents		Adbelaziz	3	S15.01	Medicinal Chemistry
13	Wed	11/15/23	2:00pm 3:00pm	UNIT III ASSESSMENT 2:00p – 4:00p					
	11/17/23	Fri	2:00pm	*Superficial Fungal Infections		Smith	1, 2, 4	S15.13	Pharmacotherapy
			3:00pm	Superficial Fungal Infections	III ‡	Smith	1, 2, 4	S15.13	Pharmacotherapy
14			2:00pm	Thanksgiving Holiday: NO CLASSES					
			3:00pm						
			4:00pm						
			4:00pm						
15	Wed	11/29/23	2:00pm	Clinical Microbiology: Mycobacteria	Newsome	1	/	Medical Microbiology	
			3:00pm	*Antimicrobial Pharmacotherapy: Antimycobacterial Agents	Newsome	3	S15.071	Pharmacology	
			4:00pm	Tuberculosis	Newsome	1, 2, 4	S15.07	Pharmacotherapy	
	12/1/23	Fri	2:00pm	*Parasitic Infections	Newsome	1, 2, 4	S15.18	Pharmacotherapy	
			3:00pm	Travel Medicine and Vector-Borne Diseases	Newsome	1, 2, 4	S15.28, S15.29	Pharmacotherapy	
16	Fri	12/8/23	9:00am	CUMULATIVE FINAL EXAMINATION (12/8/23 from 9:00a – 12:00p) ‡					
			10:00am						
			11:00am						
Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the change.									
Asterisk (*) denotes scheduled dates and topics for iRAT/tRAT; please note, iRATs/tRATs can occur at any time at the discretion of the course faculty.									
Double dagger (‡) denotes topics and material from Unit III which will be formatively assessed during the course final examination.									

