Spring 1-2003

PHAR 328.01: Antimicrobial Agents

David S. Freeman
University of Montana - Missoula

PHARMACY 328 (ANTIMICROBIAL AGENTS) **SPRING SEMESTER, 2003**

INSTRUCTOR: David Freeman, Office - SB 308 Office Phone: 243-4772 Home Phone: 728-6551
E-mail: dfreeman@selway.umt.edu

EXAMS AND GRADING:

First Exam:	Tuesday, MARCH 4	. . . . . 50 points
Second Exam:	Thursday, APRIL 3	. . . . . 70 points
Third Exam:	Thursday, MAY 1	. . . . . 80 points
Final Exam:		. . . . . .100 points
10 Point Quizzes:	Best 5 or 6 out of 6 scores	. . 50 or 60 points

Total Points: 350, or 360 90-100% = A 80-89 % = B 70-79 % = C 65-69 % = D

* All EXAMS are comprehensive
* All exams and quizzes must be taken at scheduled times
* Instructor must be informed BEFORE missing a scheduled exam period and MUST be based on GOOD REASONS
* Missed exam periods must be made up within 2 days
* No make up quizzes

STUDENT PERFORMANCE OBJECTIVES:

1) Know the normal relevant biochemical pathways and the major biochemical mechanisms of action for the different classes of drugs
2) Know the biochemical mechanisms involved in the development of resistance to different classes of antimicrobial agents
3) Given a representative chemical structure or name of a drug, know its biochemical mechanisms of action and for development of resistance
4) Given a representative chemical structure or name of a drug, know its major chemical, pharmacologic, or therapeutic categorization
5) Given a representative chemical structure or name of a drug, know its major therapeutic uses and spectrum of activity
6) Given a representative chemical structure or name of a drug, know important aspects of its absorption, pharmacokinetics, and metabolism
7) Know important chemical features (i.e., polar or lipophilic properties, labile groups, etc.) that affect the absorption, distribution, metabolism, elimination, potency, stability, or formulation of a class of antimicrobial agents
8) Given the chemical structure of an antimicrobial agent, know important chemical changes that will predictably alter its properties (i.e., potency, duration of action, stability, etc.)
9) Given a representative chemical structure or name of a drug, know its most common or serious adverse or side effects

REQUIRED TEXT: Goodman & Gilman, "The Pharmacological Basis of Therapeutics", Tenth Edition

Reading in Text	
1143-1159 Table 43-1	**I. General Considerations, Categorization, and Sensitivity Testing of Antimicrobial Agents**

The following areas will be covered for each outline topic below:
-General Chemical Structures and Properties of Agents
-Biochemical Mechanisms of Action for Agents
-Biochemical Mechanisms Involved in the Development of Microbial Resistance
-Important Aspects of Absorption, Distribution, Metabolism, and Elimination for Agents
-Antimicrobial Spectrum of Activity for Agents
-Important Adverse Effects and Drug Interactions for Agents

Reading in Text	
	II. Antibacterial Agents
1171-1179	A. Sulfonamides and TRIMETHOPRIM
1179-1183	B. Quinolones, Fluoroquinolones
1184-1185	C. NITROFURANTOIN and METHENAMINE
	D. Beta-lactam Antibiotics
1189-1205	1. Penicillins
1214-1215	2. Beta-lactamase inhibitors (CLAVULANIC ACID, SULBACTAM, TAZOBACTAM)
1206-1213	3. Cephalosporins
1213-1214	4. Carbapenems (IMIPENEM), Carbacephems (LORACARBEF), Monobactams (AZTREONAM)
1261-1266	E. SPECTINOMYCIN, POLYMYXIN, VANCOMYCIN, TEICHOPLANIN, BACITRACIN
1219-1234	F. Aminoglycosides
1239-1246	G. Tetracyclines
1250-1256	H. Macrolides (ERYTHROMYCIN, AZITHROMYCIN, CLARITHROMYCIN)
1246-1250	I. CHLORAMPHENICOL
1256-1258	J. CLINDAMYCIN
1258-1259	K. Streptogramins (QUINUPRISTIN, DALFOPRISTIN)
1260-1261	L. Oxazolidinones (LINEZOLID)
1105-1108	M. METRONIDAZOLE
	III. Anti-mycobacterial Agents
1273-1282	A. Drugs for Tuberculosis
	* ISONIAZID RIFAMPIN PYRAZINAMIDE ETHAMBUTOL *
1286-1288	B. Drugs for Mycobacterium Avium Complex
	IV. Antifungal Agents
1295-1300	A. AMPHOTERICIN B and FLUCYTOSINE
1301-1305	B. Imidazole and Triazole Antifungal Agents (azoles)
	* KETOCONAZOLE ITRACONAZOLE FLUCONAZOLE VORICONAZOLE *
1305-1306	C. GRISEOFULVIN and TERBINAFINE and CASPOFUNGIN
1307-1310	D. Topical Antifungal Agents
	* CLOTRIMAZOLE MICONAZOLE TOLNAFTATE NAFTIFINE *
	* NYSTATIN UNDECYLENIC ACID *
	V. Antiviral Agents
1313-1317	A. Overview of Viral DNA and RNA Biochemical Processes
1317-1319	B. Overview of Biochemical Mechanisms of Action and Resistance Development
1317-1328	C. Non-HIV Antiviral Agents
	* ACYCLOVIR VALACYCLOVIR CIDOFOVIR DOCOSANOL *
	* FAMCICLOVIR PENCICLOVIR FOSCARNET GANCICLOVIR *
	* VALGANCICLOVIR TRIFLURIDINE VIDARABINE *
1329-1332	D. Antiinfluenza Agents * AMANTADINE RIMANTIDINE OSELTAMIVIR ZANAMIVIR *
1332-1340	E. Other Antiviral Agents
	VI. HIV Antiviral Agents
1349-1353	A. Overview of HIV Infection
1353-1360	B. Nucleoside Reverse Transcriptase Inhibitors * ZIDOVUDINE DIDANOSINE STAVUDINE ZALCITABINE LAMIVUDINE ABACAVIR TENOFOVIR *
1360-1363	C. Nonnucleoside Reverse Transcriptase Inhibitors
	* NEVIRAPINE DELAVIRDINE EFAVIRENZ *
1364-1373	D. Protease Inhibitors
	* SAQUINAVIR INDINAVIR RITONAVIR NELFINAVIR AMPRENAVIR *

E. Drugs for Opportunistic Infections

1076, 1109-1111 * ATOVAQUONE PENTAMIDINE *