

**The University of Findlay
College of Health Professions**

*The Mission of the University is to equip our students
for meaningful lives and productive careers.*

Course Number/Title: PHAR 500 Pharmacology, Pathophysiology and Therapeutics of Infectious Diseases

Credit Hours: 4

Class Time/Place:

Prerequisites: Introduction to Pharmacy 2, Genetics, Pharmaceutics, Biochemistry, Immunology, Microbiology, Physical Assessment, NSCI 323

Instructor:

Office Hours:

Course Description This course prepares the student to manage the drug therapy of diseases covered under Infectious Diseases. The course is taught in an interactive style and integrates pharmacology, medicinal chemistry, pharmacokinetics, pathophysiology and therapeutics. Over the counter and herbal therapies are specifically included.

Relationship to the Conceptual Framework This course is deep into the professional portion of the curriculum. The heart of the system to prepare the student for clerkship is in these Pharmacology, Pathophysiology and Therapeutics classes.

Course Objectives These goals and objectives are in accordance with the AACCP CAPE Educational Outcomes

GOALS:

1. To introduce the student to the complex and interrelated disease states which involve an infection.
2. To incorporate and further expand the student's basic understanding of the pathophysiology underlying these disorders, and to explain how drug therapy modifies such pathophysiological processes.
3. To develop a thorough appreciation of the importance that pharmacodynamic and pharmacokinetic properties of therapeutic agents have in the rational approach to treating these disorders.

Course Objectives
(continued)

4. To enable the student to understand the potential advantages and disadvantages associated with the various therapeutic modalities available in the course of treating any given illness.
5. To emphasize the importance that pharmacological, chemical and therapeutical research plays in the overall advancement of medicine and pharmacy.
6. To enable the student to understand how the chemical structure of agents influences the pharmacology and therapeutic utility of the agent.

OBJECTIVES:

Pertaining to the disease states and the drug classes listed in the course topical outline:

1. The student should demonstrate a sufficient knowledge of infectious disease to understand the pathophysiology of the various disease states covered, and the pharmacology of the drugs used to treat them.
2. As various treatment modalities are discussed, the student should be able to explain how a specific therapeutic measure attempts to correct the pathophysiology associated with each disease state.
3. Given the generic drug name, the student shall be able to give:
 - a. pharmacological class
 - b. mechanism(s) of action
 - c. medicinal chemistry of agent
 - d. therapeutic class
 - e. characteristic that differentiate it from other in the same class
 - f. common side effects
 - g. pharmacokinetic and pharmacodynamic properties of the agent
 - h. trade name
4. Given the name of a drug class, the student shall be able to cite the general properties of that class addressing the following:
 - a. physicochemical properties of pharmacological importance
 - b. pharmacological actions and effects
 - c. major prototype drug(s) of that class
 - d. major side effects
 - e. contraindications and precautions

f. therapeutic indications

g. acute and chronic toxicity

h. therapeutically relevant drug interactions

5. Given the name of a specific drug, the student shall be able to cite specific exceptions, if any, to the general properties of the class of drugs to which that agent belongs.

6. The student should be able to select the drug(s) of choice for the medical management of certain disease states.

7. Given a selected drug for the management of a certain disease state, the student should be able to describe how to optimize efficacy while minimizing toxicity. Depending on the concentration – response relationship, this may or may not include applied pharmacokinetic or therapeutic drug optimization approaches.

8. Given two or more drugs which may be prescribed and administered concomitantly, the student should be able to assess the potential for drug interactions and recommend an alternative therapy if warranted.

9. Given a pharmacological class the student should be able to explain the cellular mechanisms involved in its therapeutic utility and the medicinal chemistry essential for these cellular mechanisms to occur.

10. Given a patient history and/or case report the student should be able to interpret laboratory values, determine appropriate pharmacological intervention, and discuss advantages and disadvantages of alternate treatment approaches.

11. The student will demonstrate oral and written communication skills through preparing presentations and/or writing a paper on a topics relevant to the module.

12. Upon completion of the course, the student will be adequately prepared for monitoring and counseling patients in a fashion suitable for competent patient care.

13. The student, when given several structures, will be able to determine to which chemical class as well as therapeutic class they belong.

14. The student will be able to, when given a series of compounds, be able to predict the clinical activity, as well as relative dosing, of the drugs.

15. Describe the role played by over the counter and herbal therapies in the care of patients with these illnesses.

General Education Learning Outcomes Addressed [check all that apply]

Goal 1. Students will take courses which expose them to a range of basic religious beliefs and diverse ethical perspectives and which encourage them to develop their own perspectives on global issues.	
Goal 2. Students will become familiar with the historical, scientific, literary, and/or philosophical content of a range of disciplines.	
Goal 3. Students will acquire and practice skills for reading, writing, speaking, listening, abstract inquiry, critical thinking, logical reasoning, and using computers and related technology.	
Goal 4. Students will develop an appreciation for and means of analyzing art, literature, music, communication, science, and/or theatre.	
Goal 5. Throughout their general education experience, students will analyze and reflect upon the challenges facing our global society as well as the importance of being a life-long learner and responsible citizen.	

Required Textbooks and other materials

***Pharmacology:* Hardman et al., "Goodman and Gilman's, The Pharmacological Basis of Therapeutics," 10th edition McGraw-Hill, N.Y. (2001).**

***Medicinal Chemistry:* "Principles of Medicinal Chemistry", 5th ed. Ed. David Williams and Thomas Lemke, Lippincott, (2002).**

***Therapeutics:* "Pharmacotherapy: A Pathophysiologic Approach", DiPiro et al., eds., 5th Edition, Appleton and Lange, Stamford, Conn. (2002)**

***Pathophysiology:* Cotran et al., "Pathological Basis of Disease." 5th Edition, Saunders, Philadelphia (1998).**

Knowledge Base

<http://www.rxlist.com/top200.htm>
http://homepages.findlay.edu/dfuller/NATA_Exam/Links.htm#pharm
"Pharmacokinetics", Murphy, John E., Pharm.D., "Clinical Pharmacokinetics", 2nd Edition, ASHP, Bethesda, MD, (2001)
 Various sources for pharmacy, such as Facts and Comparisons, Martindale's Extra Pharmacopeia and Remington's Practice of Pharmacy

Instructional Strategies [strategies that might be utilized-check all that apply]

Case Analysis	x	Library and Internet Research	x
Debate		Practice/drill	x
Discovery/Independent Research	x	Problem solving	x
Discussion/Questioning/Interviewing	x	Reading assignments	x
Experiential Learning		Role playing/simulation games	
Field Experience		Service Learning	
Group Presentation		Video/Audio Review and Critique	
Laboratory Experiences		Other	
Lecture			

Methods of Assessment [check all that apply]

Abstracts		Participation	
Attendance	X	Peer Evaluation	
Capstone Project		Portfolio	
Case Study	X	Portfolio Lab Performance	
Exams	X	Presentations	
Group Projects		Professional Evaluation	
Homework Assignments	X	Quizzes	
Internet Research	X	Research project	
Journaling		Other	
Lab Performance			
Oral/written review of literature	X		

Grading

Midterm 20%
 Final Exam 30%
 Homework Assignments 10%
 Case Studies 15%
 Papers and Presentations 25%

Grading Scale/Distribution

A 90-100
 B 80-89
 C 70-79
 D 60-69
 F 0-59

Honor Code

I will not knowingly engage in any dishonorable behavior, cheat, steal, lie or commit any act of plagiarism during my academic work, course, or endeavor. If I observe an act which I believe violates the University's Honor Code, I may, in my discretion, report it to the appropriate personnel.

Course Policies and Practices

Students are expected to attend every class and be active participants in class discussions, groups, and presentations. In addition, it is expected that all assignments will be turned in on the identified due date unless prior arrangements are made with the professor.

Final Exam Date

Final Exam date:

Special Services

If you are a student with a disability, it is your responsibility to register with the Office of Disability Service and notify your instructor one week prior to any needed service so that reasonable accommodations can be made for you.

Course and Instructor Evaluation**Additional Information**

Tentative Course Outline (Course outline is subject to change throughout the semester)

[date]	[assignment/class content]	[readings]	[final exam]	[other]
4 Lectures	Infectious Diseases Overview			
5 Lecture	Community Acquired Infections			
4 Lecture	Nosocomial Infections			
6 Lecture	Gram Positive Infections			
8 Lectures	Gram Negative Infections			
2 Lectures	Miscellaneous Bacterial Infections			
4 Lectures	Mycobacterial Diseases			
2 Lecture	Spirochetal Diseases			
2 Lectures	Rickettsia, Mycoplasma and Chlamydia			
8 Lecture	Viral Diseases			
2 Lecture	Fungal Infections			
1 Lecture	Protozoal Infections			
1 Lecture	Helminthic Infections			

Course/College Specific Information

The rest of the time is spent with exams and presentations by students.