

**PHRD 531 Respiratory****I. Contact Information****Course Coordinator: Susan Sirmans, Pharm.D.****Assistant Department Chair of Clinical and Administrative Sciences****Office: Bienville****Hours: TBA****Phone: 318-342-1705****Email: [sirmans@ulm.edu](mailto:sirmans@ulm.edu)****Course Instructors: TBA****II. Course Prerequisites/Corequisites**

Completion of PHRD 458 and PHRD 474.

**III. Course Description**

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to respiratory drug therapy management.

**IV. Curricular Objectives and Outcomes****1. Provide Comprehensive Patient Specific Pharmaceutical Care.**

- A. Evaluate the appropriateness of a given prescription or medication order based on patient and disease-specific factors.
  - i. Analyze the prescription regarding the medication, dose, delivery form, and duration of use as being appropriate for the patient and disease state.
    - a. Collect patient-specific data regarding demographics, medical history, diagnosis, physical assessment, and medication history.
      - 1) Conduct a patient/caregiver interview
        - a) Establish a relationship with the patient/caregiver.
        - b) Determine the most appropriate method of communication.
        - c) Complete a structured medical history.
      - 2) Identify and collect pertinent information from the medical chart, database, and/or the patient/caregiver interview.
        - a) Describe the organization of the patient chart in different practice settings.
        - b) Discuss rules and regulations concerning the use of medical charts in various practice settings (i.e., HIPAA).
        - c) Recognize appropriate patient- and drug-specific factors that will impact the drug regimen.
      - 3) Perform selected aspects of physical assessment in order to identify ongoing or potential medication-related problems and the root cause of the problems.
      - 4) Collaborate with other healthcare providers.
    - b. Analyze and interpret information gathered to identify any drug-related problem.
      - 1) Assess the prescription for interaction potential, including interactions with other medications (both prescription and non-prescription), disease states, foods, and herbals.

- 2) Determine availability and appropriateness of medications and dosage form. (pharmaceutics)
- 3) Identify appropriate duration of therapy for that disease state.
- C. Develop and implement an evidence-based care plan. (pharmacology, med chem., physiology, pathology, etc.)
  - i. Identify goals of therapy that are individualized to the patient.
  - ii. Develop a plan of care that includes interventions to resolve drug therapy problems, achieve the goals of therapy, and prevent drug therapy problems.
  - iii. Develop a schedule to follow-up and evaluate the effectiveness of outcomes from drug therapies and assess any adverse events experienced by the patient.
  - iv. Evaluate patient outcomes with respect to the achievement of goals of therapy, patient adherence, patient safety, and the development of new drug therapy problems.

**2. Communicate Effectively.**

- A. Counsel and educate patients regarding medication use, disease-state management, and health maintenance.
  - i. Assess the patient's level of literacy and health literacy.
    - a. Assess patients for physical/mental impairment impacting verbal and written communication processes.
    - b. Assess medical, disease-state knowledge, health knowledge, attitudes, and beliefs.
  - i. Identify educational needs relative to pharmaceutical care.
  - ii. Identify educational resources available and select the best method to provide counseling/education.
  - iii. Provide information that empowers patients to effectively manage their medication-related health care.
- C. Collaborate with other healthcare professionals using appropriate effective communication in both written and oral forms.
  - i. Demonstrate fluency in medical terminology.
  - ii. Demonstrate appropriate written, verbal and non-verbal communication skills.
  - iii. Demonstrate appropriate listening skills
  - iv. Communicate in a professional manner.
  - v. Present and defend pharmacotherapy recommendations.

**4. Identify, Interpret, and Evaluate Literature Needed for the Provision of Drug Information and Pharmaceutical Care.**

- A. Define the question that needs to be answered.
- B. Distinguish among lay, professional, and scientific literature.
- C. Identify appropriate literature search engines for lay, professional, and scientific literature.
- D. Explain the method to construct an appropriate search strategy for various literature types.
- E. Evaluate literature source validity.
- F. Explain methods for systematically evaluating literature.
- G. Evaluate the appropriateness of research methodologies and statistical methods.
- H. Draw appropriate conclusions from research results.
- I. Assess the potential impact and implication of published information on current practices.

**6. Think Critically.**

- A. Identify, retrieve, understand, analyze, synthesize, and evaluate information needed to make informed, rational, and ethical decisions.
  - i. Systematically gather, organize, and extract relevant information using a variety of methods and research tools.
  - ii. Analyze information within appropriate scientific, social, and clinical contexts.
    - a. Identify principles of organization and the logic of arguments.

- b. Identify and test assumptions, biases, and prejudices implicit in arguments.
  - c. Employ appropriate mathematical and statistical tools and electronic technology to analyze information.
  - d. Assess accuracy, soundness, fairness, significance, relevance, completeness, and persuasiveness of information, arguments, and sources. (consider difference between information & the information source)
  - iii. Synthesize information in order to draw conclusions, hypothesize, conjecture alternatives, or plan a course of action.
  - iv. Evaluate conclusions and solutions according to appropriate criteria, and revise as necessary.
  - v. Provide support for rationale, solutions, and results.
  - B. Solve complex problems that require an integration of one's ideas and values within a context of scientific, social, cultural, legal, clinical, and ethical issues.
    - i. Interpret problems within appropriate contexts.
    - ii. Prioritize problems based on identifiable criteria and standards.
    - iii. Apply systematic problem-solving strategies.
    - iv. Articulate and implement a defensible solution and apply appropriate criteria to monitor outcomes.
    - v. Implement modifications based on monitoring data.
  - C. Display habits, attitudes, and values associated with mature critical thinking.
    - i. Evaluate personal assumptions, biases, prejudices, and opinions.
    - ii. Display an openness to new ideas and a tolerance for ambiguity.
    - iii. Display inquisitiveness and commitment to the pursuit of truth.
    - iv. Adopt multiple perspectives in personal thinking to avoid ethno-centricity and intolerance.
- 7. Demonstrate Appropriate Interpersonal, Professional, and Ethical Behaviors.**
- A. Maintain professional competence.
    - i. Continually strive to maintain knowledge and maintain professional competence.
    - ii. Continually assess his or her learning needs and develop the ability to respond appropriately.
  - B. Represent the profession in an ethical manner.
  - C. Identify, analyze, and resolve ethical problems involved in pharmacy practice.
  - D. Provide service to the profession and the community.
  - E. Collaborate proactively with other health care professionals.
  - F. Practice in a manner that is consistent with state and federal laws and regulations
  - G. Accept the responsibilities embodied in the principles of pharmaceutical care.
  - H. Demonstrate appropriate interpersonal, intergroup, and cross-cultural behaviors that promote respect and trust from peers, patients, and community members.

## **V. Course Specific Objectives and Outcomes**

- A. Differentiate the following as they relate to asthma and COPD
  - Epidemiology
  - Pathophysiology
  - Risk factors, signs, and symptoms
- B. Evaluate existing pharmacotherapy and development an appropriate therapeutic and monitoring plan for: Stable COPD and acute exacerbations
- C. Describe the pathophysiology of asthma
- D. Define airway reversibility based on spirometry and peak flow measurement
- E. Know the clinical signs and symptoms of asthma
- F. List the common triggers of asthma

- G. Understand the stepwise approach to classifying asthma severity
- H. Be able to describe how to use a peak flow meter
- I. Understand the stepwise approach to classifying asthma severity
- J. Be able to describe how to use an MDI, DPI, peak flow meter, and nebulizer
- K. Describe the difference between reliever and controller medications
- L. Discuss the mechanism of action, indications, dosing, drug interactions, side effects, dosage forms, and patient education points for asthma medications
- M. Describe the pharmacokinetic parameters of theophylline
- N. Discuss the role of disease states on theophylline (esp. clearance)
- O. Identify drug/food interactions with metabolism
- P. Calculate initial and maintenance dosing
- Q. Calculate serum level predictions and adjustments
- R. Discuss toxicities and side effects
- S. Identify appropriate strategies for monitoring levels

## VI. Course Topics

Review of respiratory physiology, pharmacology review of anticholinergics, adrenergic agonists, anti-inflammatories, anti-asthmatics and other previously discussed topics which apply to respiratory. Therapeutics topics include asthma, Chronic Obstructive Pulmonary Disease, Smoking Cessation, and Pulmonary Hypertension. Pharmacokinetics of theophylline will also be discussed.

## VII. Instructional Methods and Activities

Instructional methods may include: traditional lectures, internet-based lectures with in-class discussion, distance learning, in-class discussion of patient cases, small group discussion, problem-based learning, case-based learning, and individual projects. Quizzes may also be administered.

## VIII. Evaluation and Grade Assignment

| <u>Assessment method</u> | <u>Points</u> |
|--------------------------|---------------|
| Examinations             |               |
| Exam #1                  | 100           |
| Exam #2                  | 200           |
| Exam #3                  | 150           |
| Exam #4                  | 150           |
| Assignments/quizzes      | TBD           |

Grading Scale (based upon total number of points for semester):

|              |   |
|--------------|---|
| 90.0 – 100%  | A |
| 80.0 – 89.9% | B |
| 70.0 - 79.9% | C |
| 60.0 – 69.9% | D |
| <60.0%       | F |

Undergraduate mid-term grades will be posted on-line for students to view via Arrow. Mid-term grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student.

## IX. Class Policies and Procedures

At a minimum, all policies stated in the current *ULM Student Policy Manual & Organizational Handbook* should be followed (see <http://www.ulm.edu/studentpolicy/>). Additional class policies include:

**A. Textbook(s) and Materials:**

Required

- a. Dipiro JT, Talbert RL, Yee G, et al. *Pharmacotherapy: A Pathophysiologic Approach*. 6<sup>th</sup> edition, New York, McGraw-Hill, Inc., 2005.

**B. Attendance Policy:**

Class attendance is required. Class attendance is regarded as an obligation as well as a privilege, and students are expected to know attendance regulations and to attend regularly and punctually at classes in which they are enrolled. Failure to do so: (1) may prevent access to the classroom during regularly scheduled times; (2) may jeopardize a student's scholastic standing; and (3) may lead to suspension from the college or University. Students shall submit excuses for all class absences to professor within three class days after returning to classes. Professors shall accept an official University excuse. With the following exceptions professors are to determine whether absences are excused or unexcused: 1) Absences arising from authorized trips away from the University or from special duties at the University shall be excused. 2) Absences arising from a student's confinement in a hospital or other in-patient facility or doctor's excused absences shall be excused. Students are responsible for verifying this information to the course coordinator(s). 3) Absences arising from a death in the immediate family shall be excused. The immediate family is defined as spouse, child, step-child, mother, father, sister, brother, grandmother, grandfather, step-mother, step-father, step-brother, step-sister, aunt, uncle, mother-in-law or father-in-law.

**C. Make-up Policy:**

Excused make-ups will be within one week of the student's return to class at the convenience of the instructor. Excused absences will be determined using the guidelines stated in the University Catalog. Make-up exams and assignments may be of any format agreed to by faculty members involved with the course and the course coordinator(s).

**D. Academic Integrity:**

Faculty and students must observe the ULM published policy on Academic Dishonesty (see Page 4, *ULM Student Policy Manual* <http://www.ulm.edu/studentpolicy/>).

Cheating, plagiarism, or other inappropriate conduct will not be tolerated. Academic cheating includes but is not limited to the accomplishment or attempted accomplishment of the following:

1. Copying or obtaining information from another student's test paper.\*
2. Using, during a test, materials not authorized by the person giving the test.\*\*
3. Collaborating, conspiring, or cooperating during an in-class or take-home test with any other person by giving or receiving information without authority.
4. Stealing, buying, or otherwise obtaining all or part of an unadministered test.
5. Selling or giving away all or part of an unadministered test or any information concerning specific questions and items on an unadministered test.
6. Requesting, bribing, blackmailing, or in any other way causing any other person to obtain an unadministered test or information about an unadministered test or a test in the process of being administered.

7. Substituting for another student, or permitting any other person to substitute for oneself to take a test.
8. Submitting as one's own, in fulfillment of academic requirements, any work prepared totally or in part by another person.
9. Any selling, giving, or otherwise supplying to another student for use in fulfilling academic requirement any work.
10. Submitting artificially produced data or information in the place of descriptive, experimental, or survey results.
11. Any other devious means of securing an unearned grade in a non-credit course or in a course offered for credit.
12. Using, during a test, any electronic storage device, wireless and/or internet-based technology, or any other means that provides information not authorized for use during the testing period.

\*A student looking on another student's paper is considered cheating.

\*\*The presence on one's person (or in close proximity thereto) of a condensation of test information which could be regarded as a "cheat sheet" will be considered adequate evidence to establish cheating.

Plagiarism is the use of any other person's work (such work need not be copyrighted) and the unacknowledged incorporation of that work in one's own work offered for credit.

#### Censures (Penalties)

Academic dishonesty will result in a referral to Committee on Ethical and Professional Standards with a recommendation for a grade of "F" for the course and expulsion from the College. Academic dishonesty includes but is not limited to the use of information taken from others work or ideas, the provision of help to others on non-collaborative evaluations (tests, quizzes, etc.), collaboration on take home exams, or the use of unapproved information or electronic devices to assist in obtaining an answer to the question.

#### **E. Course Evaluation Policy:**

At a minimum, students are expected to complete the on-line course evaluation. (Also, include any additional course-specific policies related to evaluation of the course.)

#### **F. Student Services:**

Information about ULM student services, such as Student Success Center (<http://ulm.edu/cass/>), Counseling Center (<http://ulm.edu/counselingcenter/>), Special Needs (<http://ulm.edu/counselingcenter/special.htm>) and Student Health Services, is available at the following Student Services web site <http://ulm.edu/studentaffairs/>.

#### **G. Emergency Procedures:** (Include appropriate emergency information)

Please review the emergency escape plan in the classrooms and hallways of the Bienville building. Move quickly and orderly to the appropriate stairwell and exit the building. The meeting place for this class will be the far end of the north parking lot between Bienville and Broadmoor Blvd. Under no circumstances is the elevator to be used for emergency evacuation. Any student needing assistance should notify the professor immediately. For emergencies, to contact University Police, call 1-911 from landlines and 342-5350 from cell phones.

**H. Discipline/Course Specific Policies:** Students are responsible for all information on Moodle and/or instructor websites. Students are expected to check these sources regularly to access class materials, required readings, assignments, and other information necessary for this course.

**X. Instructional Methods and Activities**

Instructional methods may include: traditional lectures, internet-based lectures with in-class discussion, distance learning, in-class discussion of patient cases, small group discussion, problem-based learning, case-based learning, and individual projects. Instruction may include use of SimMan. Quizzes may also be administered.

**XI. Evaluation and Grade Assignment**

| <u>Assessment method</u> | <u>Points</u> |
|--------------------------|---------------|
| Examinations             |               |
| Exam #1                  | 100           |
| Exam #2                  | 100           |
| Exam #3                  | 100           |
| Exam #4                  | 100           |
| Assignments/quizzes      | TBD           |

Grading Scale (based upon total number of points for semester):

|              |   |
|--------------|---|
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| 80.0 – 89.9% | B |
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**XII. Tentative Course Schedule** (Note: This section should appear on a separate page.)

**A. Contact Information:**

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**Phone: 318-342-**  
**Email: [sirmans@ulm.edu](mailto:sirmans@ulm.edu)**

**B. Schedule:**

*The instructor reserves the right to adjust the schedule as needed.*

| Topic                                   | Lecturer | Date   | Required reading/A |
|---|----------|--------|--------------------|
| <b>Review of Respiratory Physiology</b> | Jackson  | Week 1 |                    |
| <b>Pharmacology</b>                     |          |        |                    |

|  |             |            |  |
|--|-------------|------------|--|
| Review of anticholinergics, adrenergic agonists, anti-inflammatory, other previously discussed classes | V. Hsia     | Week 2-4   |  |
| Anti-asthmatics  | V. Hsia     |            |  |
| <b>Medicinal Chemistry</b>   | TBA         | Week 5-6   |  |
| <b>Therapeutics</b>  |             |            |  |
| Asthma   | A. Wicker   | Week 7-8   |  |
| COPD   | D. Caldwell | Week 9     |  |
| Smoking Cessation  | J. Sherman  | Week 10-11 |  |
| Pulmonary Hypertension   | TBA         | Week 12    |  |
| <b>Pharmacokinetics</b>  |             |            |  |
| Theophylline   | S. Manor    | Week 13    |  |
| <b>Drug Delivery Systems</b>   |             |            |  |
| Respiratory Delivery Devices   | S. Nazzal   | Week 14    |  |