

# PHAR 6758 Pulmonary Pharmacotherapy Syllabus

Spring 2020; 1.1 Credits

This course adheres to the items listed in the College of Pharmacy Central Syllabus:

<http://z.umn.edu/copcentralsyllabus>

## General Course Information

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### Meeting Times & Locations: March 30<sup>th</sup>- May 10<sup>th</sup> 2020

Day	Time	Duluth Room	Twin Cities Room
Monday	10:10-12:05 pm	165 Life Science	Moos Tower 1-450
Thursday	1:25-3:20 pm	L410	WDH 7-135

**Course Website:** <https://canvas.umn.edu>

Technology Help, Duluth: 218-726-8847

[itsshelp@d.umn.edu](mailto:itsshelp@d.umn.edu)

Technology Help, TC: 612-30-4357

[help@umn.edu](mailto:help@umn.edu)

### Instructional Team:

If you need assistance with the course, contact either TA as listed below.

<b>Course Directors:</b>	<b>TC:</b> Jean Moon, PharmD, BCACP 7-103 WDH 612-730-7212; <a href="mailto:jmoon@umn.edu">jmoon@umn.edu</a>	<b>DULUTH:</b> Michael Swanoski, PharmD BCGP 218-726-6019; <a href="mailto:mswanosk@d.umn.edu">mswanosk@d.umn.edu</a>
<b>Course Instructors:</b>	<b>TC:</b> Don Uden, PharmD 7-159D WDH 612-624-9624; <a href="mailto:udenx001@umn.edu">udenx001@umn.edu</a>	<b>Duluth:</b> Olihe Okoro, Ph.D., MPH <a href="mailto:ookoro@d.umn.edu">ookoro@d.umn.edu</a>
	<b>TC:</b> Joel Farley, PhD <a href="mailto:farl0032@umn.edu">farl0032@umn.edu</a>	<b>TC:</b> Betsy Hirsch, PharmD 4-212 MTRF 612-626-4388; <a href="mailto:ebhirsch@umn.edu">ebhirsch@umn.edu</a>
	<b>TC:</b> Ann Philbrick, PharmD <a href="mailto:philb020@umn.edu">philb020@umn.edu</a>	
<b>Course Teaching Assistants:</b>	<b>TC:</b>	<b>DULUTH:</b>

## Overview of the Course

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### **Course Content:**

The course is designed to provide students with the requisite pathophysiology and pharmacotherapeutic knowledge to care for patients with common pulmonary conditions. It will integrate concepts of pediatric and geriatric pulmonary dosing and infectious diseases. In addition, the course will include integrated with SAPH and Public Health content.

### **Course Format:**

This clinical module is an interactive course that will center on case-based active learning. This format will stimulate student self-learning, increase experience in working with simulated examples related to clinical situations, and help develop critical thinking skills that will improve student retention of knowledge and skills necessary to improve patient care and outcomes. Each class typically will be 2 hours in length, with additional didactic review and applied active learning sections. **Students will be expected to spend about 2 hours (on average) out of class in preparation prior to each active learning class module** (e.g. recorded presentations, readings or cases from the textbook, journal article reviews).

In summary, students will be expected to spend about 6 hours a week in outside-class preparation prior to active learning, lecture and case based learning sessions. Preparation time for PCLC integrated activities is not included here.

## Prerequisites

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\* PD2 in good academic standing.

### **Courses:**

Applied Pharmaceutical Care, Foundations of Social and Administrative Pharmacy, Medicinal Chemistry and Pharmacology of Cardiovascular Agents, Pharmacokinetics and Applied Pharmacokinetics, Cardiovascular Pharmacotherapy, Molecular Metabolism and Nutrition, Foundations of Pediatrics and Geriatrics

### **Topics:**

- Physiology: pulmonary clearance, gas exchange (CO<sub>2</sub>/O<sub>2</sub> exchange), IgE/protein allergen complex with mast cells, leukotrienes, PGE-D<sub>2</sub>, neutrophils, eosinophils, lymphocytes, and macrophages
- Biochemistry, molecular metabolism
- Pharmacokinetics: ADME

- Pharmacology/Medicinal Agents: antihistamines, intranasal and pulmonary inhaled corticosteroids, oral corticosteroids, short-acting and long-acting beta agonists, short-and long- inhaled anticholinergics

## Course Materials

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### Required:

Koda-Kimble MA, et al. (2013). *Applied therapeutics: The clinical use of drugs* (10th ed.). Baltimore, MD: Lippincott Williams & Wilkins. Students will have access to this as an eTextbook.

DiPiro JT, et. al. (2017). *Pharmacotherapy: A Pathophysiologic Approach* (10th ed.). McGraw-Hill Education. Students will have access to this as an eTextbook.

### Computer / Technology Requirements:

- Canvas: This course will use Canvas to distribute resources and host course activities. See Canvas setup requirements at <http://www1.umn.edu/Canvas/start/technical.html>
- E-Textbooks: The Koda-Kimble Applied Therapeutics and Pharmacotherapy textbooks will be provided as an e-text.
- Email: Course instructors and teaching assistants will communicate through email about course administrative issues. We suggest that you check your U of M email daily and allow notifications from your Canvas settings.
- Laptop, notebook, or an iPad (device) to access the internet during active learning and case sessions and the final exams are required.

## Detailed Course Schedule

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See Canvas site for a detailed course description by week and a schedule at a glance.

## Course Goals and Objectives

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### Learning Objectives:

1. Differentiate between seasonal and perennial allergic rhinitis (AR), identify and modify AR triggers, select appropriate non-pharmacologic and pharmacologic therapy for the management of AR and develop a patient centered evidence based best practice care plan for a simulated or actual patient.
  - *Domain Competencies: 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6*
  - *Scientific Foundations: 1.2.1, 1.2.2, 2.1.1, 2.1.2, 2.1.6, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 5.2.2, 5.8.1, 5.8.2, 5.8.3, 5.8.5, 5.8.10, 5.8.12*

2. Assess, interpret, apply guidelines, and develop a patient-centered evidence based best practice care plan for a simulated or actual patient with asthma.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 3.1, 3.6, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6
- *Scientific Foundations:* 5.1.3, 5.1.4, 5.1.5, 5.2.3, 5.3.10, 5.13.4, 5.4.1

3. Assess, interpret, apply guidelines, and develop a patient-centered evidence based best practice care plan for a simulated or actual patient with COPD.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6
- *Scientific Foundations:* 5.2.2, 5.3.14, 5.4.1, 5.6.1, 5.8.2, 5.7.5

4. Identify the pathogenesis and pharmacotherapy of common upper respiratory tract infections (otitis media and sinusitis) and community acquired pneumonia; apply national guidelines for otitis media and develop a patient-centered evidence based best practice care plan for a simulated or actual patient.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6

5. Differentiate between seasonal and perennial allergic rhinitis (AR), identify and modify AR triggers, select appropriate non-pharmacologic and pharmacologic therapy for the management of AR and develop a patient centered evidence based best practice care plan for a simulated or actual patient.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6
- *Scientific Foundations:* 1.2.1, 1.2.2, 2.1.1, 2.1.2, 2.1.6, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 5.2.2, 5.8.1, 5.8.2, 5.8.3, 5.8.5, 5.8.10, 5.8.12

6. Assess, interpret, apply guidelines, and develop a patient-centered evidence based best practice care plan for a simulated or actual patient with asthma.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 3.1, 3.6, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6
- *Scientific Foundations:* 5.1.3, 5.1.4, 5.1.5, 5.2.3, 5.3.10, 5.13.4, 5.4.1

7. Assess, interpret, apply guidelines, and develop a patient-centered evidence based best practice care plan for a simulated or actual patient with COPD.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6
- *Scientific Foundations:* 5.2.2, 5.3.14, 5.4.1, 5.6.1, 5.8.2, 5.7.5

8. Identify the pathogenesis and pharmacotherapy of common upper respiratory tract infections (otitis media and sinusitis) and pharyngitis/bronchitis/influenza; apply national guidelines for otitis media and develop a patient-centered evidence based best practice care plan for a simulated or actual patient.

- *Domain Competencies:* 1.0, 1.1, 1.2, 1.4, 1.5, 1.7, 2.4, 6.0, 6.1, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.4.5, 6.4.6

## **Assessment and Grading**

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### **Overall Course Grade:**

The overall course grade will be determined by quizzes, assignments, and final exam as described in the following table.

### **Missing Grades and/or Grade Book Discrepancies:**

Each time a grade is added to the Canvas gradebook, students will be able to access via gradebook in Canvas. Students are responsible for checking the gradebook for missing grades and/or grade discrepancies. If a potential inaccuracy is identified, students have one week from the day/time the announcement is posted to notify the teaching assistant. After one week grades change requests may not be honored.

### Graded Assessments and Rounding:

The final grade for the course will be determined according to the formula in the table below. Common rounding rules will be applied when determining the final grade. All assessments will follow “Canvas recording rules” = grades are recorded out to the hundredths place (e.g. a grade of 5.67777777 is recorded as a grade of “5.67” by Canvas). Final grades will be totalled by final quizzes and assignments divided by the total points, and the percentage will be **rounded to the nearest whole number** to determine the final letter grade (e.g. total percent score of 92.47 will be rounded to 92 = A-).

### Graded Assessments:

#	Due Date	Brief Description	Points	% of Final Grade
1	Weekly	Quizzes – online (closed resource)	60 (10 points each)	34.29
2	Various	In-class Activities	15 (5 points each)	8.57
3		Education Rx #1	15	8.57
4		Asthma Care Plan	10	5.71
5		Education Rx #2	15	8.57
6	TBD	Comprehensive Final Exam – Multiple choice	60	34.29
<b>Total</b>			175	100%

### Course Letter Grades:

Grade	A	A-	B+	B	B-	C+	C	C-	D	F
%	100-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-60	<59

### Quizzes:

Weekly quizzes will be administered via Canvas and available at the end of class on Thursday and close on Monday at the start of class. In order to take any of these quizzes, you will be required to download Respondus LockDown (as instructed on the first day of class). These quizzes will cover the content provided during the previous week. For example, the quiz will open on Thursday at the end of class 3:20 pm and will close Monday 10:10 am. Once you login, quizzes will be open only for 15 minutes. (Note: If you log in at 10:09 am on Monday morning, you will only have 1 minute to do your quiz. Please plan your time accordingly).

The use of electronic devices such as phones, computers, programmable calculators, and other devices with electronic databases are not permitted during quizzes. Each student is expected to take the quiz **independently** and submit their own work. Each student is responsible for ensuring that they are appropriately logged into the course website when taking assigned quizzes.

The scores only will be released once the quiz is closed. If you would like to ask for consideration of a question being challenged, **you must contact the Course Director(s) in writing within 24 hours after the release of the scores and provide the reason why you feel the question was inappropriate.** Students may request to see the quiz and which questions they got wrong by scheduling an appointment with either the TA or Course Directors.

### **Technical Support for Online Quizzes:**

If you require assistance please take the following steps: Step 1: Consider visiting the technical support website <http://umn.edu/Canvas> to troubleshoot your problem through self-help pages. Step 2: Call the One Help desk at 218-726-8847 in Duluth or 612-301-4357 in the TC. Following these steps will ensure that you get the assistance that you need in a timely manner. Please do not hesitate to contact Tech Support. They are there to help! If you have technical difficulties during an online quiz, or if you are uncertain that your quiz is submitted properly, email the instructor for that material immediately, including your chosen answers for the quiz questions. **Note: Late quizzes will not be accepted if a student has technical difficulties and all avenues of technical support to correct the problem were not attempted.**

### **Final Exam Policy:**

The final exam will be offered during the finals week, in class and will be a mix of case-based and knowledge-based multiple choice. Students will have 2 hours to complete the final exam. **Students will have access to the specific designated references only during the exam.** Students are required to use Respondus LockDown Browser.

The final exam score will be released to students immediately after the last student completes the exam (note that some students may have to schedule an alternate time for a variety of excused reasons). Once released, students will be able to see their score and not be able to see the correct answers. If you have any questions regarding the final exam, please contact Dr. Moon in TC and Dr. Swanoski in Duluth to schedule a time on **Thursday May 14<sup>th</sup> (available from 1pm until 4pm)**. During the scheduled meeting with your professor, you will not be allowed to take pictures of your exam questions and you will not be allowed to write down any answers. The Honor Code is in effect.

## Assignments and Learning Activities

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### **Asthma Action Plan:**

This assignment is designed to students gain experience writing an asthma action plan. Using guidelines, students will be graded for each section of the plan and the appropriateness of recommended therapy.

### **Education Rx:**

This assignment is designed to develop and apply a framework for using evidence-based medicine skills in answering clinical questions. Given a clinical scenario, students will complete the Education Rx(s). See Appendix A for the detailed grading rubric.

### **In-Class Activities:**

Most weeks, students will engage in an in-class activity. Each of these activities will require student participation and points will be awarded during class time, based on the activity.

## Course Policies

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### **See Also:**

[University of Minnesota and College of Pharmacy Policy Reference](#) (Centralized Syllabus)

### **Attendance:**

Students are expected to attend every class for which they are registered. Students are expected to attend classes on the campus where they are enrolled. Instructors may choose to take attendance.

### **Absence from Exams or Quizzes:**

Make-Up Exams or Quizzes will not be offered unless absence is consistent with University Make-Up Policy, including personal illness, a family emergency, or an University-sponsored event. Additional circumstances will be considered at the discretion of the Course Director, but are not likely to be granted.

### **If a student is unable to attend:**

1. Course Exams or TBL Session: The Course Director must be notified (by email) at least 24 hours in advance (when possible) to provide information to explain the absence. Verification for absences (medical professional note, event registration, etc.) is required. If an acceptable circumstance or adequate documentation is not provided, a grade of zero will be assigned. If you do not receive a reply to your request, please do NOT assume that your request has been granted; contact us again to confirm that your request was received and processed. Depending on the circumstances, the make-up

due date will not be more than one week after the original due date and will, if possible, occur before the original due date. In the event more than one student misses an exam, a simultaneous makeup exam will be scheduled.

2. Course Quizzes: The Course Director must be notified (by email) at least 24 hours in advance (when possible), but no later than 24 hours after the due day/time to provide information to explain the absence. Verification is not required for the first absence, but is for any subsequent absence.

3. Make-up quizzes for students who unintentionally overlooked the due date/time (and/or without an accepted circumstance as above) will be granted a maximum of a 50% score in accordance with the Statement on Penalties for Late Work for the first missed quiz. Any quiz after the first will count for 0 points.

### **Statement on Penalties for Late Work:**

Late work will only be accepted if the Course Director is notified no later than 24 hours after the missed due date/time. Late work for the first assignment will count for a maximum of 50% of the final score. Any late work after this will count for 0 points.

### **Statement on Extra Credit:**

No extra credit will be offered.

**Minimum Passing Level:** Per University and College Policy, students who receive a grade below C- in this course must successfully repeat the course before advancing to courses which require this course as a prerequisite.

### **Disability Accommodations:**

Students with a documented disability (eg. physical, learning, psychiatric, vision, hearing, etc.) already registered with the Disability Resource Center **must contact the Course Director within the first week of class to discuss your accommodations.** Accommodations take advance planning to implement. Students who do not present documentation from Disability Services a minimum of one week before an assessment will adhere to the original/traditional expectations for that assessment. All students are welcome here and all discussions concerning this issue will remain confidential. Please contact Disability Services to quantify and arrange the necessary accommodations:

- Twin Cities: <http://ds.umn.edu/> 612-626-1333
- Duluth: <http://www.d.umn.edu/access/> 218-726-8217

### **Honor Code:**

Each student is bound by the honor code which defines academic misconduct as any unauthorized act which may give a student an unfair advantage over other students, including but not limited to: falsification, plagiarism, misuse of test materials, receiving unauthorized



assistance and giving unauthorized assistance. Specifically, each student will be required to do their own work on all quizzes, tests, extra credit assignments, oral and written exams unless otherwise advised by the course instructors. For exams & other assessments it will be considered a "misuse of test materials," and therefore a violation of the honor code to copy, scan, photograph, share, or otherwise re-construct such assessment content. Instructors or a fellow student should report academic misconduct during an exam to the Course Director and the Honor Council for investigation.

Students signed the following statement upon accepting placement in the College of Pharmacy: "I hereby affirm that I have read and understood the provisions and stipulations of the University of Minnesota Pharmacy Student Code of Ethical Responsibility and Professional Behavior."

The Code was established in the belief that central to any intellectual and professional endeavor is an atmosphere of mutual trust and respect. Your professional community starts here at the College of Pharmacy with your peers, faculty, preceptors, staff and administrators.

It is our expectation that students will exhibit professional behavior towards other students and faculty in the classroom at all times. In turn, we will treat you with the professional respect you deserve as the future of the profession of pharmacy.

## **Course Evaluations**

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Students will have an opportunity to complete online course evaluations for course instructors as well as the overall course. We value your opinion. It's our intention to provide a good backdrop for educational and professional development. To accomplish this it is vital that our students provide us with constructive assessment of our progress so far.

## APPENDIX A

### Education Rx Scoring Rubric

PICO Conformity	Yes = 2 points	Somewhat = 1 point	No = 0 points
Patient/ Population is clearly stated	<u>More than one</u> appropriate descriptor is used to describe patient/population.	<u>One</u> appropriate descriptor is used to describe patient/population.	Patient/population is not stated.
Intervention/ exposure is clearly stated	Outlines specific intervention of interest; e.g. drug class, specific drug name.	Non-specifically outlines intervention in a way that will not contribute to search; e.g. "methods" "options" "treatments"	Intervention is not stated
Comparison is clearly stated	Outlines specific comparison of interest; e.g. drug class, specific drug name, placebo, or "usual care".	Non-specifically outlines comparison in a way that will not contribute to search; e.g. "alternate methods".	Comparison is not stated
Outcome is clearly stated	Outcome that is objective and meaningful to patient or patient case; e.g. decrease in hospital admission, injury prevention, reduction in BP.	Outcome stated is so general that it will not contribute to search; e.g. "effect", "change in outcome", "improvement", "treatment", "success".	Outcome is not stated
Answer to PICO	Present = 1	Not = 0	
Answer Quality	Specifically/ yes = 2	Somewhat = 1	None/no = 0
Directness: Does the answer directly answer the question	Answer addresses all 4 elements outlined by PICO.	Answer addresses only 1-3 elements of the PICO.	Answer does not address any element of the PICO.
Evidence: Is there evidence provided	Evidence that is relevant and valid to	Evidence is provided; however, validity or	Evidence provided is misinterpreted.

to support the answer?	the answer is provided. Evidence is evaluated for credibility.	relevance to the answer is questionable.	Evidence is either irrelevant or invalid for the answer provided.
Confidence in Answer: Do you trust the management suggested by this answer?	Evaluator trusts with full confidence in the management suggested by the answer.	Evaluator trusts with moderate confidence in the management suggested by the answer.	Evaluator does not trust the management suggested by the answer.
<b>TOTAL SCORE</b>			<b>/15</b>