

# Phar 6716 Applied Pharmaceutical



Course Syllabus, Spring  
2020

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

[https://docs.google.com/a/umn.edu/document/d/1artQ5e1rbzxe8lEtWo7BE8k8snZAEgMMz\\_QcW8yJ-II/edit?pli=1](https://docs.google.com/a/umn.edu/document/d/1artQ5e1rbzxe8lEtWo7BE8k8snZAEgMMz_QcW8yJ-II/edit?pli=1)

## Meeting Times & Locations

Day	Time	Duluth Room	Twin Cities Room
Monday	10:10 am – 12:05 pm	Lib 410	WDH 7-135
Wednesday	10:10 am – 12:05 pm	LSci 165	MT 1-450
Friday	9:05 am - 9:55 am	LSci 163	MT 1-450

**Course Website:** <https://umn.instructure.com/courses/102888>

## Instructional Team

If you need assistance with the course, contact one of the Teaching Assistants.

**Technology Help, Duluth:** 218-726-8847 [itsshelp@d.umn.edu](mailto:itsshelp@d.umn.edu)  
**Technology Help, Twin Cities:** 612-301-4357 [help@umn.edu](mailto:help@umn.edu)

**Faculty Office Hours:** by appointment

<b>Course Director: Duluth</b> Tiffany Elton, Pharm.D. 119 Life Science 218-726-6000 telton@umn.edu Preferred method of contact: email Office Hours: arranged	<b>Course Director: Twin Cities</b> Tom Larson, Pharm.D., MT (ASCP), RPh, FCCP 7-159 WDH 612-626-5025 larso098@umn.edu Preferred method of contact: email Office Hours: arranged
---	---

## Course Faculty

<b>Instructor</b> Don Uden, PharmD 7-115 WDH 612-624-9624 <a href="mailto:udenx001@umn.edu">udenx001@umn.edu</a> Preferred method of contact: email	<b>Instructor</b> Wendy St. Peter, PharmD WDH 7-125B 612-625-5848 <a href="mailto:stpet002@umn.edu">stpet002@umn.edu</a> Preferred method of contact: email	<b>Instructor</b> Laura Palombi, PharmD 123 Life Science 218-726-6066 <a href="mailto:lpalombi@d.umn.edu">lpalombi@d.umn.edu</a> Preferred method of contact: email
--	--	--

## Course Faculty (cont.)

<p><b>Instructor</b> Ann Philbrick, PharmD 7-180 WDH 612-625-8053 philb020@umn.edu Preferred method of contact: email</p>	<p><b>Instructor</b> Chrystian Pereira, PharmD 7-180 WDH 612-625-7188 pereira@umn.edu Preferred method of contact: email</p>	<p><b>Instructor</b> Kerry Fierke, Ed.D. 215 Life Science 218-726-6027 kkfierke@d.umn.edu Preferred method of contact: email</p>
<p><b>Instructor</b> Shannon Reidt, PharmD, MPH reid0113@umn.edu Preferred method of contact: email</p>	<p><b>Instructor</b> Rory Rimmel, PhD 8-170 WDH remme001@umn.edu 612-624-0472</p>	<p><b>Instructor</b> Ron Hadsall, PhD 7-159 WDH 612-624-2487 hadsa001@umn.edu Preferred method of contact: email</p>
<p><b>Instructor</b> Lowell Anderson, D.Sc., FAPhA, FIIP 612-626-5158 ander245@umn.edu Preferred method of contact: email</p>	<p><b>Instructor</b> Olihe Okoro, PhD, MPH 235 Life Science 218-726-6036 ookoro@d.umn.edu Preferred method of contact: email</p>	<p><b>Graduate Teaching Assistants</b>  Dan Dauner, PharmD, MPH <a href="mailto:ddauner@d.umn.edu">ddauner@d.umn.edu</a>  Jay Wen, Pharm.D. <a href="mailto:wenxx164@umn.edu">wenxx164@umn.edu</a></p>

## Teaching Assistants

<p><b>Teaching Assistant (TC)</b> Ann Nagle nagle080@umn.edu</p>	<p><b>Care Plan Grader</b> Erin Host hostx016@d.umn.edu</p>	<p><b>Care Plan Grader</b> Seth Johnson joh11938@d.umn.edu</p>
<p><b>Care Plan Grader</b> Megan Hulscher hulsc007@d.umn.edu</p>	<p><b>Care Plan Grader</b> Kaylee Clark clar1177@umn.edu</p>	<p><b>Care Plan Grader</b> Sara Bugliosi bugli013@umn.edu</p>
<p><b>Care Plan Grader</b> Annie Hertel herte023@umn.edu</p>	<p><b>Care Plan Grader</b> Julia Weimer wiem0045@umn.edu</p>	<p><b>Care Plan Grader</b> Shawn Anderson and03054@umn.edu</p>
<p><b>Care Plan Grader</b> Hailey Haugen hauge601@umn.edu</p>	<p><b>Care Plan Grader</b> Caitlin Schanz schan196@d.umn.edu</p>	<p><b>Resident Teaching Assistants</b> Amanda Hulinsky, Pharm.D. Stephanie Mohan, Pharm.D.</p>

## Course content

Evidence-based patient-centered pharmaceutical care involves:

- a) assessing patients' drug-related needs
- b) identifying, resolving, and preventing drug therapy problems
- c) developing a care plan and plan for follow-up
- d) communicating with a patient and the health care team

These concepts will be applied to patient and population scenarios featuring common medical conditions and medications students are likely to encounter during their introductory pharmacy practice experiences (IPPEs).

### Course format

This ITV course, taught by a number of faculty, utilizes a combination of online material, Voice Thread presentations, assigned readings, case discussions, team-based learning and lectures. For every hour a student spends in the classroom in this course, the student can expect to devote approximately 1-2 hours outside of class either preparing for the class session or completing homework arising from the class session. Students are expected to have completed assigned pre-readings to prepare them to fully participate in in-class active and team-based learning exercises.

In class, students will have the opportunity to practice working up simulated patient cases and live patients for disorders commonly encountered in the ambulatory care setting.

Students will use their electronic devices to conduct real-time literature searches to aid them in recommending treatment approaches. Audience response devices will enable students to fully participate in in-class quizzes and surveys related to the topic of the day.

## Prerequisites

To be successful in this course, students should be able to apply the drug literature evaluation and statistics skills they developed in *Becoming a Pharmacist* and in the Drug Literature Review and Biostatistics portion of *Foundations of Social and Administrative Pharmacy* to inform drug therapy decisions. To address simulated and actual patient care situations, students should be able to apply the Philosophy of Practice and the Pharmaceutical Care process to which they were introduced in *Becoming a Pharmacist* and *Foundations of Pharmaceutical Care*. Students should be able to apply the information gained in their General Microbiology pre-pharmacy courses in Biochemistry I, Medical Microbiology, Medicinal Agents and Pharmacology to the areas of Antibiotics and antiviral therapies commonly encountered in ambulatory care settings. Finally, students should be able to apply the information they obtained in Cellular Physiology, Molecular Biology and Genetics to the topics of Dermatology and Renal Function.

## Requirements

### Course Materials

- APhA Handbook of Nonprescription Drugs, 18th or 19th ed (2015-2017)
- APhA Immunization Handbook, 4th Edition (2018)
- Applied Therapeutics: The Clinical Use of Drugs, 11th Edition (2018) (\*Available online\*)

### Computer / Technology Requirements

The University of Minnesota computer requirements are listed here:

<https://www.pharmacy.umn.edu/degrees-and-programs/doctor-pharmacy/current-students/technology-resources>

- Students are required to bring laptop computers or electronic tablets to class each day.

- Each day, students are required to bring a device to class that is capable of interacting with the classroom's audience response system.

## Attendance Policy

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. See COP Central Syllabus for information on what is considered an excused absence.

## Team-Based Learning

Team-Based Learning (TBL) is used throughout the Applied Pharmaceutical Care course. TBL exercises are intended to help build critical thinking and communication skills necessary to improve patient outcomes. Students will be assigned to TBL groups at the beginning of the semester. Laptop computers are required for all TBL sessions. TBL sessions are conducted on Canvas. Each TBL will consist of three phases:

- **iRAT** (5 points) - The iRAT (individual readiness assurance test) is a closed-note multiple choice test that is taken on Canvas. It is designed to assess a student's understanding of material that has been assigned or presented in class. The questions will be written at the level of section exams.
- **tRAT** (5 points) - tRAT (team readiness assurance test) is a closed-note multiple choice test that is taken by students in teams (TBL groups). The questions are identical to the iRAT. One scratch-off card will be provided to each TBL group. The scratch-off answers provided by the TBL group will be graded and applied to all individual students in the group.
- **Applied Exercise** (5 points) - The applied exercise allows students to work in TBL groups, review material at-hand, and provide a written response to case-based questions/scenarios. The questions may be intentionally "grey" (having more than one right answer) and will be graded on the basis of good faith effort/reasonable answer. Faculty will circulate to assist groups as requested.

TBL Grading: There will be 5 TBL sessions, each worth 15 points. The lowest TBL score will be dropped at the end of the semester. TBL sessions are designed to provide an active, team-based learning experience, thus students must be present to earn a grade. Working remotely does not demonstrate professionalism and will not be awarded credit. Students are responsible for bringing all items needed to complete the readiness assessments (this may include computers, batteries, etc.). Students without a working device will not be awarded credit - paper and/or verbal answers will not be accepted. The honor code applies to all aspects of TBL exercises.

## Honor Code

Each student is bound by the following specific provisions as part of the Code: Academic misconduct is 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. You are required to do your own work on all exams, quizzes, and assignments.

## Goals & Objectives

The overall goal of the course is to assess individual patient and population drug-related needs and develop a plan to meet those needs

Learning Objectives: By the end of this class period, students will be able to:

- 1) Assess a patient's drug-related needs, collect, organize and interpret relevant patient-specific subjective and objective data (including patient/population characteristics and laboratory values, and medication history, etc.) and document this in an evidence-based pharmaceutical care plan.
- 2) Describe the pathophysiology of selected common medical conditions.
- 3) Define the characteristics of medications (structure-activity relationships, pharmacology, kinetics, formulation, etc.) that help pharmacists assess for Indication, Efficacy, Safety, and Convenience (IESC).
- 4) Identify common drug therapy problems related to the pharmacotherapy agents discussed and list therapeutic alternatives to resolve and prevent these drug therapy problems.
- 5) When presented with a patient who has more than one drug therapy problem, prioritize drug therapy problems and establish relative timeline of when they should be addressed [novice level].
- 6) Effectively and professionally communicate information related to health care, pharmaceutical care plans, population health, and other related information to patients, providers and others in written and oral form.
- 7) Apply public health policy as it relates to topics within the course, and in the context of patient-specific care.

For more information on the Domains and Scientific Foundations related to this course, see the "Domains and Scientific Foundations" document on the course Canvas site.

## Assessments and Grading

- Types of exams/quizzes will include: TBL, in-class and/or online quizzes and exams
- Exams may include multiple choice and short answer questions, and care plans
- Method of examination may include in-class audience response, scratch-off, or written
- Care Plans will be graded using the standard rubric (S-, S, S+ grading)

### Graded Assessments\*

Topic	Points	Form of Assessment	On or Due Date(s)
TBL Sessions (iRAT, tRAT, Applied Ex.)	60 (15 points/session; lowest score at the end of the semester is dropped)	In-class and online quizzes	February 19 <sup>th</sup> , 26 <sup>th</sup> March 2 <sup>nd</sup> , 18 <sup>th</sup> , 25 <sup>th</sup>
In-class Participation & Readiness Quizzes	Up to 40 (5 points/session)	Attendance and participation	Feb 3rd, 12th
Topics 1 Exam	50	In class exam	February 24 <sup>th</sup>
Intro to Labs Values Exam	50	In-class exam	March 27 <sup>th</sup>
Antibiotics Exam	100	Online exam	April 19 <sup>th</sup> – April 21 <sup>st</sup>
Topics 2 Exam	80	In-class exam	May 8 <sup>th</sup>

Care Plans	120 (30 points/care plan)	Written All care plans are due by <b>11:59 PM</b> on the respective due dates	Head Lice CP – Mar 1st Oral Rehydration CP – Mar 22nd Allergic Rhinitis CP – April 5th UTI – April 29th
Vaccines Quiz	40	Must Pass Online Quiz	April 26th – April 28th
<b>Total points</b>	<b>540</b>		

\*Points and due dates subject to change at course instructor's discretion

### Disability Accommodations

Accommodation requests are welcome and all discussions concerning accommodations will remain confidential. Students with documentation already registered with the Disability Resource Center must contact the Course Director within the first week of class to discuss accommodations. Accommodations do take advance planning to implement. Students who do not present documentation from Disability Services a minimum of one week before an assessment may need to adhere to an unmodified testing environment for that assessment. Students are responsible for scheduling their exams in the Disability Center as soon as the schedule is posted. Notifying Disability Services less than 2 weeks before an exam can result in being unable to schedule an exam at that location. Course faculty do not have a mechanism to schedule individual rooms at the College.

Please contact Disability Services to quantify and arrange accommodations:

- Twin Cities: <https://diversity.umn.edu/disability/student-services> 612-626-1333
- Duluth: [www.d.umn.edu/access/](http://www.d.umn.edu/access/) 218-726-8217

### 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	59-0

### Final Course Grade & Minimum Passing Level:

Final grades will be rounded to the nearest whole number using common rounding rules (as per Microsoft Excel® where values  $\geq 0.5$  are rounded up). Letter grade assignments appearing on transcripts will reflect the table above.

### **Minimum Passing Level**

Per the Academic Standing Committee Policy, students who receive a grade below C- in this course must successfully repeat the course before advancing to 2nd year courses.

### **Absence from Exam or TBL session**

- Exams: Make-up exams will not be offered except under circumstances as allowed by University and College of Pharmacy Attendance Policy (see University of Minnesota and College of Pharmacy Central Syllabus link at the top of the syllabus). Additional circumstances will be considered at the discretion of the course directors, but are not likely to be granted. If a student is unable to attend the scheduled exam, both Drs. Larson and Elton must be notified (via email) at least 24 hours in advance of the exam time (where possible). If you do not receive a reply to your request prior to the exam time, do not assume that your request has been granted; contact course directors again to confirm that your request was received and processed. If an acceptable circumstance or adequate documentation is not provided to course directors, a grade of zero on the exam

will be assigned. Make-up exams are scheduled as soon as possible, typically no longer than 1 week from the originally scheduled exam.

- Team-Based Learning (TBL) Sessions: TBL sessions will not be recorded. If you are absent for a TBL session, you will receive 0 points for that session. TBL sessions cannot be made up. Regardless of excused, unexcused, or no absence, your lowest TBL session score will be dropped. If you are late to a TBL session, notify the instructor immediately upon arrival so that you may receive points for parts of the TBL session you participated in. If you wait until after class to notify the instructor, you will receive 0 points for the TBL session.

**Participation Make-up**

Participation points will be made up at the course directors discretion and in a manner consistent with the class session missed, and in most cases will involve work that demonstrates the students having had a discussion with peers about the class content missed. Students may be asked to write a paragraph outlining the concepts that were discussed in the class session they missed and how these are used in the pharmaceutical care process.

**Statement on Extra Credit**

Honors Credit will be awarded per prior arrangement with Course Directors. Representative Honors projects could include developing and conducting a presentation on a course-related topic, or developing and facilitating a course-related case.

**Statement on Penalties for Late Work**

- Written assignments: Late work will be accepted for full credit only with prior approval of the Course Directors and only for excused absences.
- Written assignments submitted late without prior approval may be submitted within 24 hours to receive 50% point deduction. After 24 hours, no points will be awarded.
- In-class assignments: Students must be present to obtain credit (i.e. TBL, Quizzes, Attendance, etc.)
- Students must complete all assignments to pass the course.

**Course Schedule**

Date	Agenda/Topic	Assignments
<b>Week One</b>		
January 15 <sup>th</sup>	Introduction to the Course (Elton, Larson)	
January 17 <sup>th</sup>	Rural Health (Lemke)	
<b>Week Two</b>		
January 20 <sup>st</sup>	<b>Martin Luther King Holiday – No Class</b>	
January 22 <sup>nd</sup>	Physical Assessment (Pereira)	
January 24 <sup>th</sup>	Physical Assessment (Pereira)	

Date	Agenda/Topic	Assignments
<b>Week Three</b>		
January 27 <sup>th</sup>	Leadership Communication (Fierke)	
January 29 <sup>th</sup>	Introduction to Population Health & Rural Health Policy (Terry Hill)	
January 31 <sup>st</sup>	Motivational Interviewing (LaRue, Elton)	
<b>Week Four</b>		
February 3 <sup>rd</sup>	Multicultural Panel (Kathleen Gates, Linda Frizzel, Hashim Mohamud)	<b>Attendance</b>
February 5 <sup>th</sup>	Meta-Analysis (Reidt)	
February 7 <sup>th</sup>	Patient Medication Experience (Bruce Perkins)	
<b>Week Five</b>		
February 10 <sup>th</sup>	Alternative Medicine (Dr. Dawood, Dr. Ma, Dr. Otten)	
February 12 <sup>th</sup>	Medication Adherence (Okoro) Patient Care Documentation (Nagle)	<b>Readiness/Attendance</b>
February 14 <sup>th</sup>	Diaper Rash (Dr. Rivers, Dr. Palombi)	
<b>Week Six</b>		
February 17 <sup>th</sup>	<b>Placebo, Nocebo (Self-Learning Exercise)</b> Reading Assignment + 2 videos (placebo surgery)	<b>No Class</b>
February 19 <sup>th</sup>	Head Lice (Elton) Dermatitis & Acne Part I (Larson)	<b>TBL</b> Head Lice Case Open
February 21 <sup>st</sup>	Dermatitis & Acne (Larson) Part II; Dry Skin and Sunscreen (online)	
<b>Week Seven</b>		

February 24 <sup>th</sup>	Intro to Lab Values- Electrolytes, metabolic panel (Larson)	<b>TBL</b>
February 26 <sup>th</sup>	<b>Topics Exam 1 (In Class)</b>	
February 28 <sup>th</sup>	<b>TBD</b>	<b>Head Lice Care Plan Due March 1st</b>
<b>Week Eight</b>		
March 2 <sup>th</sup>	Intro to Kidney Lab Values (St. Peter)	<b>TBL</b> Oral Rehydration Case Open
March 4 <sup>th</sup>	Lab Values – CBC (Larson)	
March 6 <sup>th</sup>	Kidney Lab Values (St. Peter)	
<b>Week Nine - Spring Break: March 9-13th</b>		
<b>Week Ten</b>		
March 16 <sup>th</sup>	OTCs for Pain and Fever (Elton)	<b>TBL</b>
March 18 <sup>th</sup>	Lab Values: Coagulation and Cardiac Enzymes (Larson)	
March 20 <sup>th</sup>	Lab Values – Lipids, Liver Enzymes (Larson) APhA March 20-23 in 2020	<b>Oral Rehydration Care Plan Due March 22nd</b>

<b>Date</b>	<b>Agenda/Topic</b>	<b>Assignments</b>
<b>Week Eleven</b>		
March 23 <sup>rd</sup>	Cough/Cold (Uden/Elton)	<b>TBL</b>
March 25 <sup>th</sup>	Allergic Rhinitis (Uden/Elton)	Allergic Rhinitis Case Open
March 27 <sup>th</sup>	<b>Lab Values Exam (In Class)</b>	
<b>Week Twelve</b>		
March 30 <sup>th</sup>	<b>CPF day 2020</b>	<b>No Class</b>
April 1 <sup>st</sup>	<b>TBD</b>	
April 3 <sup>rd</sup>	Non-hormonal contraceptives (Elton)	<b>Allergic Rhinitis Care Plan Due April 5</b>
<b>Week Thirteen</b>		
April 6 <sup>th</sup>	Stewardship (Rotschafer) Antibiotics (Aldrich/Remmel)	UTI Case Open
April 8 <sup>th</sup>	Antibiotics (Aldrich/Remmel) Case (Larson/TAs)	
April 10 <sup>th</sup>	Antibiotics (Aldrich/Remmel) Case (Larson/TAs)	
<b>Week Fourteen</b>		
April 13 <sup>th</sup>	Antibiotics (Aldrich/Remmel) Case (Larson/TAs)	
April 15 <sup>th</sup>	Antibiotics (Aldrich/Remmel) Case (Larson/TAs)	
April 17 <sup>th</sup>	Antibiotics (Remmel)	<b>Antibiotic Exam On-Line April 19-21</b>
<b>Week Fifteen</b>		
April 20 <sup>nd</sup>	Vaccines (Philbrick)	
April 22 <sup>th</sup>	Vaccines (Philbrick)	
April 24 <sup>th</sup>	Vaccines (Philbrick)	<b>Vaccine Quiz On-Line April 26-28</b>
<b>Week Sixteen</b>		
April 27 <sup>th</sup>	GERD/PUD (Pereira)	

April 29 <sup>th</sup>	Diarrhea/Constipation (Pereira)	<b>UTI Care Plan Due April 29</b>
May 1 <sup>st</sup>	<b>Pharmacy Day May 1st</b>	<b>No Class</b>
<b>Week Seventeen</b>		
May 4 <sup>th</sup>	Law, BOP & Practice Act (Hadsall/Anderson)	
May 6 <sup>th</sup>	Introduction to Hospice & End of Life Considerations (Axness)	
May 8 <sup>th</sup>	<b>Topics II Exam (In Class)</b>	