

Pharmacotherapy of Neurological And Psychiatric Disorders

Course Syllabus Fall 2020
3.1 Credits (Core)



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

Meeting Times & Locations

Dates: September 1 - December 10, One exam during Finals Week

Day	Time	Duluth Room	Twin Cities Room
Tuesday (Beginning September 1st)	10:10 am-12:05 pm	Zoom	Zoom
Thursday (Beginning September 3rd)	1:25 pm-3:20 pm	Zoom	Zoom

Course Web Site: <https://canvas.umn.edu/courses/199130>

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
Technology Help, Twin Cities: 612-301-4357 help@umn.edu

Faculty Office Hours: Zoom meeting can be set up by appointment

Name	Office Location	Phone	Email	Preferred contact
Michael Kotlyar, PharmD (TC Course Director)			kotly001@umn.edu	Email
Michael Swanoski, PharmD, CGP (Neurology Module Director)			mswanosk@d.umn.edu	Email
Susan Marino, Ph.D. (TC contact for Neurology Module)			marin007@umn.edu	Email
Mark Schneiderhan, PharmD (Duluth Course Director)			meschnei@d.umn.edu	Email

Jeannine Conway, Pharm.D. (TC Instructor)			pluha003@umn.edu	Email
Hossein Fatemi, M.D. (TC Instructor)			fatem002@umn.edu	Email
Virginia Ghafoor, Pharm.D. (TC Instructor)			vghafoo1@fairview.org	Email
Ilo Leppik, M.D. (TC Instructor)			leppi001@umn.edu	Email
Ann Philbrick, Pharm.D. (TC Instructor)			philb020@umn.edu	Email
Sheila Specker, M.D. (TC Instructor)			speck001@umn.edu	Email
Natalie Roy, PharmD (TC Instructor)			nrs16@umn.edu	Email

Teaching Assistants:

TBD

Overview of the course

Course content

This course is designed to prepare future generalist pharmacists to be knowledgeable about common psychiatric and neurologic disorders and about the appropriate use of medications used to treat them. The course will focus primarily on the pharmacotherapies used to treat psychiatric and neurologic disorders. This course will additionally provide an overview of the presentation and pathophysiology of specific psychiatric and neurologic disorders, an overview of the differences between the practices of psychiatry and neurology and a discussion of stigmas associated with mental illness. An overview of nonpharmacologic therapies will be introduced to the extent relevant to the generalist pharmacists. At the conclusion of the course, students will be expected to apply knowledge learned in the course in order to design and monitor a pharmacotherapeutic plan for specific patients and to appropriately educate patients regarding proper use of the various psychiatric and neurologic medications covered in the course.

Course format

This course is divided into two modules (i.e. neurology and psychiatry) with a module director for each. Each module director is responsible for the content and assessment methods for their module. Student questions or concerns regarding content or assessment should therefore be directed to the appropriate module director.

Except as noted below (see detailed course schedule) or due to unforeseen circumstances, lectures will be delivered via Zoom (or similar technology) during class time period and recorded for viewing later.

Prerequisites

Students must have completed all required Year 2 Pharm.D. courses successfully before beginning this course. Foundational information learned in Year 1 and 2 courses will be built upon in this course.

Requirements

Course Materials

Required

- *Applied Therapeutics: The Clinical Use of Drugs* 11th ed. (2018). Students will have access to this as an e-Textbook.
- Readings-The required readings for the course will be outlined in the course schedule on Canvas, and will include chapters from the text above. Students are urged to review the assigned readings prior to class to aid in the understanding of lecture material. Questions from the required readings may be included in course assessments (in addition to lecture and supplemental material). Additional recommended readings are listed in the course schedule.

Computer / Technology Requirements

- Canvas: This course will use Canvas to distribute resources and host course activities.
- E-Textbooks: Applied Therapeutics textbook is available as an e-text.
- Assessments: Some assessments will be administered through ExamSoft
- Email: Course instructors will communicate through email or through Canvas about course administrative issues. We suggest that you check your U of M email and log into Canvas daily.

Attendance Policy

Class sessions at which attendance is required will be announced at least two weeks in advance. Students are encouraged to attend synchronous on-line class periods in order to have the opportunity to ask questions during the live presentation.

Goals & Objectives

These goals are linked to the College's Competency Domains: [Link to full competency domain document.](#)

Course Goals

1. Explain the basic pathophysiology associated with common neurologic or psychiatric conditions.
2. Contrast and compare available pharmacotherapeutic options to manage patients with neurologic or psychiatric conditions.
3. Apply the Pharmacists' Patient Care Process (Collect, Assess, Plan, Implement and Follow-up) for managing patients with common neurologic or psychiatric conditions.
4. Identify, resolve and/or prevent drug therapy problems (i.e. Indication, Effectiveness, Safety, and Convenience - IESC), and develop goals and follow-up plans for patients with neurologic or psychiatric conditions.
5. Describe how to educate patients receiving neurologic or psychiatric medications on their appropriate use.

Assessments and Grading

Grades will be determined by two quizzes, four exams, and the psychiatry interactive review session.

Assignments and Learning Activities

Reading assignments, Cases, Quizzes, Exams are listed by dates or will be announced in class.

Graded Assessments

The following graded assessments will count toward your final grade for this course in the following amounts:

Assessment	% of Grade
Neurology Exam 1	15%
Neurology Pain Case Quiz	10%
Neurology Epilepsy Quiz	5%
Neurology Exam 2	20%
Psychiatry Exam 1	20%
Psychiatry Interactive Review Session	5%
Psychiatry Exam 2	25%
Total	100%

Dates for Pain Quiz, Epilepsy Quiz will be announced in class. Dates for the exams and Psychiatry Interactive Review Session are listed in the schedule below.

Course Letter Grades

Letter grades will be assigned by the following scale:

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

Grading Information

The grades for individual assignments will be posted in the Canvas gradebook. Final grade percentage will be rounded such that grades ending in 0.5 or higher will be rounded up to the next highest percentage (the individual grades will be summed without rounding them first).

Statement on Penalties for Late Work

Graded activities or assessments submitted late will result in a loss of 50% of the points allocated for the activity or assessment if submitted within 1 week of the original due date (except for absences in accordance to the University Make-Up Policy). Work submitted after 1 week of the due date will receive no credit.

Statement on Extra Credit

No extra credit will be offered in this course. However, students who fill out the course evaluation at the end of the semester will receive an additional 1% added to their final grade percentage. Your responses on the course evaluation will be kept anonymously. The instructors will only be given a list of who participated in order to give this extra point.

Exam Policy

There will be 4 exams during the course. For each exam, questions will be weighed equally in determining your exam grade. Exams will be open over at least a 24 hour period and will consist of multiple-choice questions, some of which will be case based. Unless otherwise noted in class, exams will open during class time on the date indicated in the schedule below and will close at 5:00 PM on the next calendar day. References (such as notes, slides, textbooks, electronic resources, etc) may not be used during any assessments (exams, quizzes, etc) except as specified by the course / module director(s).

Quiz Policy

The Neurology Module directors will provide information regarding the format, material covered and other relevant information about each quiz. Quizzes will be administered electronically.

Psychiatry Interactive Review Session

An interactive review session will take place at the end of the psychiatry module. Information about this session will be provided by the Psychiatry Module directors. .

Honor Code Considerations

Answers to all assessments are to be prepared *independently* and should reflect your best individual (and professional) judgment. 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. Instructors or a fellow student may report academic misconduct during an exam to the Course Directors and the Honor Council for investigation. Information regarding the honor council and procedures for reporting violations can be found at <https://sites.google.com/umn.edu/hc-umn>

Course Evaluations

Students will have an opportunity to complete online course evaluations for instructors and the course itself (including instructional strategies, etc.) at the end of the semester. You are encouraged to contact one of the course directors any time you have concerns about the course or your progress in the course.

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 original/traditional expectations for that assessment.

Please contact Disability Resources to quantify and arrange the necessary accommodations:

Twin Cities: <https://disability.umn.edu/> 612-626-1333

Duluth: <http://www.d.umn.edu/disability-resources> 218-726-6130

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

This page includes all required UMN and CoP policies, e.g., Academic Freedom; Copyright; Course Evaluations; Disability Accommodations; FERPA, etc.

Tentative Course Schedule

Week 1	
09/1/2020 Hour 1	<p>Introduction/Orientation to the Course & Overview of Neurologic Disorders Kotlyar / Schneiderhan / Swanoski / Marino / Leppik</p> <p>Readings</p> <ul style="list-style-type: none"> Supplemental Reading: Pharmacotherapy: eChapter 53 Evaluation of Neurologic Illness: https://accesspharmacy.mhmedical.com/content.aspx?bookid=1861&sectionid=146079249
09/1/2020 Hour 2	<p>Overview of Neurologic Disorders (continued) Leppik</p>
09/3/2020 Hour 1	<p>Pain Pathways (Recorded for asynchronous viewing) Ghafoor</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 55 Pain and Its Management
09/3/2020 Hour 2	<p>Acute Pain (Recorded for asynchronous viewing) Ghafoor</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 55 Pain and Its Management
Week 2	
09/8/2020 Hour 1	<p>Chronic Pain (Recorded for asynchronous viewing) Ghafoor</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 55 Pain and Its Management
09/8/2020 Hour 2	<p>Headache-Migraine and Non-Migraine (Recorded for asynchronous viewing) Ghafoor</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 58 Headache
09/10/2020 Hour 1	<p>Pain Comorbidities / Addiction Ghafoor</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 55 Pain and Its Management
09/10/2020 Hour 2	<p>Pharmacists' Role in the Public Health Response to Opioid Overdose Schneiderhan</p>

Week 3	
09/15/2020 Hour 1	Medical Cannabis Philbrick
09/15/2020 Hour 2	Medical Aspects of Epilepsy Note: also watch recorded lectures- Antiepileptic Drugs Conway Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 60 Seizure Disorders
09/17/2020 Hour 1	Seizure Disorders Conway Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 60 Seizure Disorders
09/17/2020 Hour 2	Seizure Disorders Conway Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 60 Seizure Disorders
Week 4	
9/22/2020 Hour 1	Neurology Exam 1
9/22/2020 Hour 2	Neurology Exam 1
9/24/2020 Hour 1	Sleep Disorders Swanoski Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 84 Sleep Disorders
9/24/2020 Hour 2	Alzheimer's Disease and Other Dementias Swanoski Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 108 Geriatric Neurocognitive Disorders (Geriatric Dementias)
Week 5	
9/29/2020 Hour 1	No Class: CPF
9/29/2020 Hour 2	No Class: CPF
10/01/2020 Hour 1	Parkinson's Disease Roy Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 59 Parkinson Disease and Other Movement Disorders

10/01/2020 Hour 2	Parkinson's Disease Roy Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 59 Parkinson Disease and Other Movement Disorders
Week 6	
10/6/2020 Hour 1	Non-Parkinson's Movement Disorders Swanoski Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 59 Parkinson Disease and Other Movement Disorders
10/6/2020 Hour 2	Pathophysiology and Clinical Features of Stroke Leppik Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 61 Ischemic and Hemorrhagic Stroke
10/8/2020 Hour 1	Cerebrovascular Disorders Jancik Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 61 Ischemic and Hemorrhagic Stroke
10/8/2020 Hour 2	Cerebrovascular Disorders Jancik Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 61 Ischemic and Hemorrhagic Stroke
Week 7	
10/13/2020 Hour 1	No Class – IPPE
10/13/2020 Hour 2	No Class – IPPE
10/15/2020 Hour 1	No Class – IPPE
10/15/2020Ho Hour 2	No Class – IPPE
Week 8	
10/20/2020 Hour 1	Treatment of Aggressive Behaviors Related to Dementia Schneiderhan/Swanoski Readings <ul style="list-style-type: none"> Applied Therapeutics Chapter 108 Geriatric Neurocognitive Disorders (Geriatric Dementias) Supplemental reading: The American Psychiatric Association Practice Guideline on the Use of Antipsychotics to Treat Agitation or Psychosis in Patients With Dementia. 173(5), pp. 543–546. https://doi.org/10.1176/appi.ajp.2015.173501

10/20/2020 Hour 2	<p>Treatment of Aggressive Behaviors Related to Dementia</p> <p>Schneiderhan/Swanoski</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 108 Geriatric Neurocognitive Disorders (Geriatric Dementias)
10/22/2020 Hour 1	<p>Multiple Sclerosis</p> <p>Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 57 Multiple Sclerosis
10/22/2020 Hour 2	<p>Multiple Sclerosis</p> <p>Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 57 Multiple Sclerosis
Week 9	
10/27/2020 Hour 1	<p>Neurology Exam 2</p>
10/27/2020 Hour 2	<p>Neurology Exam 2</p>
10/29/2020 Hour 1	<p>Introduction to Psychiatry: Overview</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> Supplemental reading: Schneiderhan ME, Nelson, Leigh A., Bishop JR, Bauer, S. "Assessment of Psychiatric Disorders." In: DiPiro, Talbert, Yee, Matzke, Wells, Posey. eds. <i>Pharmacotherapy: A Pathophysiological Approach, Tenth Edition</i>. The McGraw-Hill Company, Inc. (eChapter78) 2018. Pharmacotherapy, a Physiological Approach (11th edition)
10/29/2020 Hour 2	<p>Introduction to Psychiatry: Role of the Psychiatric Pharmacist</p> <p>Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> Supplemental reading: Schneiderhan ME, Nelson, Leigh A., Bishop JR, Bauer, S. "Assessment of Psychiatric Disorders." In: DiPiro, Talbert, Yee, Matzke, Wells, Posey. eds. <i>Pharmacotherapy: A Pathophysiological Approach, Tenth Edition</i>. The McGraw-Hill Company, Inc. (eChapter78) 2018. Pharmacotherapy, a Physiological Approach (11th edition)
Week 10	
11/03/2020 Hour 1	<p>Physiological Alterations in Mood Disorders</p> <p>Marino</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 86 Depressive Disorders
11/03/2020 Hour 2	<p>Major Depressive Disorder</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> Applied Therapeutics Chapter 86 Depressive Disorders

11/05/2020 Hour 1	<p>Major Depressive Disorder Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 86 Depressive Disorders •
11/05/2020 Hour 2	<p>Depression in the Pediatric Population Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> • Supplemental reading: The Use of Medications in Treating Childhood and Adolescent Depression: Information for Patients and Families (2010) http://parentsmedguide.org/
Week 11	
11/10/2020 Hour 1	<p>Physiological Alterations in Anxiety Disorders Marino</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 83 Anxiety Disorders
11/10/2020 Hour 2	<p>Anxiety Disorders Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 83 Anxiety Disorders
11/12/2020 Hour 1	<p>Anxiety Disorders Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 83 Anxiety Disorders
11/12/2020 Hour 2	<p>Obsessive-Compulsive and Trauma-Related Disorders Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 83 Anxiety Disorders
Week 12	
11/17/2020 Hour 1	Psychiatry Exam 1
11/17/2020 Hour 2	Psychiatry Exam 1
11/19/2020 Hour 1	<p>Medical Aspects of Schizophrenia Fatemi</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 85 Schizophrenia
11/19/2020 Hour 2	<p>Use of Antipsychotic Medications in the Treatment of Psychiatric and Other Disorders Schneiderhan</p> <p>Readings</p>

	<ul style="list-style-type: none"> • Applied Therapeutics Chapter 85 Schizophrenia • Supplemental reading: 2009 Schizophrenia PORT Treatment Guidelines. Schizophr Bull. 2010 Jan;36(1):71-93. doi: 10.1093/schbul/sbp116. Epub 2009 Dec 2
Week 13	
11/24/2020 Hour 1	<p>Use of Antipsychotic Medications in the Treatment of Psychiatric and Other Disorders (continued)</p> <p>Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 85 Schizophrenia
11/24/2020 Hour 2	<p>ADHD</p> <p>Schneiderhan</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 89 Attention Deficit Hyperactivity Disorder in Children, Adolescents and Adults • Supplemental reading: ADHD Parents Medication Guide (2013) http://parentsmedguide.org/
11/26/2020 Hour 1	No Class - Thanksgiving
11/26/2020 Hour 2	No Class - Thanksgiving
Week 14	
12/01/2020 Hour 1	<p>Bipolar Disorders</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 87 Bipolar Disorders
12/01/2020 Hour 2	<p>Bipolar Disorders</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 87 Bipolar Disorders
12/03/2020 Hour 1	<p>Drugs of Abuse</p> <p>Specker</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 90 Substance Use Disorders
12/03/2020 Hour 2	<p>Drugs of Abuse</p> <p>Specker</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 90 Substance Use Disorders
Week 15	
12/08/2020 Hour 1	<p>Treatment of Tobacco Dependence</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 91 Tobacco Use and Dependence

	<ul style="list-style-type: none"> • Fiore et al. A clinical practice guideline for treating tobacco use and dependence: 2008 update. Am J Prev Med 2008;35(2): 158–176.
12/08/2020 Hour 2	<p>Treatment of Tobacco Dependence</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 91 Tobacco Use and Dependence
12/10/2020 Hour 1	<p>Treatment of Tobacco Dependence</p> <p>Kotlyar</p> <p>Readings</p> <ul style="list-style-type: none"> • Applied Therapeutics Chapter 91 Tobacco Use and Dependence
12/10/2020 Hour 2	<p>Psychiatry Interactive Review Session</p> <p>Kotlyar / Schneiderhan</p>
Finals Week	
	Finals Week: Psychiatry Exam 2