

# PHA5784C Patient Care 4: Gastrointestinal and Renal Disorders

Spring 2023

6 Credit Hours – [A-E Grading]

*Fourth of an eight-course sequence that prepares the student to provide patient-centered care by serving as a collaborative interprofessional team-member who is an authority on pharmacotherapy. The course continues to prepare the student to be a collaborative team member since learning involves teamwork. This course focuses on providing patient-centered care to patients who have a gastrointestinal or renal disorder. Learners will develop, integrate, and apply knowledge from the foundational disciplines (i.e., **pharmaceutical, social/behavioral/administrative, and clinical sciences**) and apply the Pharmacists' Patient Care Process in solving case-based scenarios of patients with gastrointestinal and renal disorders.*

## Teaching Partnership Leader

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Erin St. Onge, Pharm.D.

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See Appendix A. for Course Directory of Faculty and Staff Contact Information.

## Entrustable Professional Activities

This course will prepare you to perform the following activities which the public entrusts a Pharmacist to perform:

- Patient Care Provider Domain
  - 2. Analyze information to determine the effects of medication therapy, identify medication-related problems, and prioritize health-related needs.

- ST2.1. Assess a patient's signs and symptoms to determine whether the patient can be treated within the scope of practice or requires a referral
  - ST2.3. Interpret laboratory test results
  - ST2.5. Assess a patient's health literacy using a validated screening tool
  - ST2.6. Compile a prioritized health-related problem list for a patient.
  - ST2.7. Evaluate an existing drug therapy regimen
- 3. Establish patient-centered goals and create a care plan for a patient in collaboration with the patient, caregiver(s), and other health professionals that is evidence-based and cost-effective
  - ST3.2. Develop a treatment plan with a patient. (including recommend therapeutic alternatives and generic substitution)
  - ST3.3. Manage drug interactions.
  - ST3.4. Select monitoring parameters to determine the therapeutic and adverse effects related to the treatment plan.
  - ST3.6. Create a patient-specific education plan.
- 4. Implement a care plan in collaboration with the patient, caregivers, and other health professionals.
  - ST4.1. Write a note that documents the findings, recommendations, and plan from a patient encounter.
  - ST4.2. Educate a patient regarding the appropriate use of a new medication, device to administer a medication, or self-monitoring test.
  - ST4.4. Assist a patient with behavior change (e.g., use shared decision making and motivational strategies).
- 5. Follow-up and monitor a care plan.
  - ST5.2. Evaluate the selected monitoring parameters to determine the therapeutic and adverse effects related to the treatment plan.
  - ST5.3. Recommend modifications or adjustments to an existing medication therapy regimen based on patient response.
- Interprofessional Team Member Domain
  - 6. Collaborate as a member of an interprofessional team.
    - ST6.3. Communicate a patient's medication-related problem(s) to another health professional.
- Population Health Promoter Domain
  - 7. Identify patients at risk for prevalent diseases in a population.
    - ST7.1. Perform a screening assessment to identify patients at risk for prevalent diseases in a population (e.g., hypertension, diabetes, depression).
  - 8. Minimize adverse drug events and medication errors.
    - ST8.1. Assist in the identification of underlying system-associated causes of errors.
    - ST8.2. Report adverse drug events and medication errors to stakeholders.
- Information Master Domain
  - 12. Use evidence-based information to advance patient care.

- ST12.1 Retrieve and analyze scientific literature to make a patient-specific recommendation.

## Course-Level Objectives

Given a case of a patient with one or more of the above disorders/pharmacotherapy needs, Integrate knowledge and use clinical reasoning skills in accomplishing the following steps when managing a patient with the disease state:

- i. **Collect:** Gather subjective and objective information and analyze the data in order to understand the relevant medical/medication history and clinical status of the patient.
  1. Subjective and objective information is collected through comprehensive medication review with the patient, medical record review, pharmacy profile review, and communication with other members of the health care team.
  2. A holistic view is initiated during collection in order to consider physiological, psychological, and sociological variables of the patient and this view is maintained throughout the patient care process.
- ii. **Assess:** Assess the information collected and formulate a problem list consisting of the patient's active medical problems and medication therapy problems in order to prioritize medication therapy recommendations to achieve the patient's overall health goals.
  1. Assess the patient's active medical conditions taking into account clinical and patient goals of therapy.
  2. Assess the indication, effectiveness, safety, adherence and convenience (administration, access, affordability) of each medication the patient is taking.
  3. Include in the assessment an evaluation of risk factors, relevant psychosocial issues, and the need for preventative care or for referral to another healthcare practitioner for further evaluation
  4. Formulate a medication therapy problem list, classifying the patient's medication therapy problems based on indication, effectiveness, safety, and compliance.
  5. Prioritize the patient's medication therapy problems.
- iii. **Plan:** Develop an individualized patient-centered care plan in collaboration with other health care professionals and the patient/caregiver that is evidence-based and as affordable as possible.
  1. For each problem, create patient-centered goal(s) in collaboration with the patient/caregiver and other members of the healthcare team
  2. Develop a care plan to manage the patient's active medical conditions and resolve the identified medication therapy problems.
  3. Identify monitoring parameters to assess effectiveness, safety, adherence, and quality of life.
- iv. **Implement:** Implement the care plan in collaboration with other health care professionals and the patient/caregiver.
  1. For each condition and associated recommended strategy for resolving identified MTPs, provide the medication order in its entirety, including full drug name, dose, dosage form, route of administration, dosing interval, duration of therapy
    - a. Discuss the care plan with the patient.
    - b. Educate the patient on his/her medications (which may include explanations of medication action, the regimen or its proper discontinuation, proper medication use and storage, expected results and when to expect them, possible adverse effects, and when and how to follow-up or seek additional care.

2. Where appropriate, contribute to coordination of care by providing documentation to other providers using an evidence-based method of communication, such as SBAR (Situation, Background, Assessment, Recommendation) or SOAP (Subjective, Objective, Assessment, Plan)
- v. **Follow-up with the Patient:** Monitor and evaluate the effectiveness of the care plan and modify the plan in collaboration with other health care professionals and the patient/caregiver.

## Course Pre-requisites

1. Completion of all Year 1 Pharm.D. program coursework including milestones.
2. PHA 5782C, Patient Care 2

## Course Co-requisites

1. PHA 5164L Professional Practice Skills Lab 4

## Course Outline

See Appendix. Please routinely check your campus calendar and the Canvas course site for any messages about changes in the schedule including meeting dates/times, deadlines, and room changes.

## Required Textbooks/Readings

1. Foye WO, Lemke T, Williams DA. Foye's Principles of Medicinal Chemistry, Wolters Kluwer Health/Lippincott Williams & Wilkins, Philadelphia, PA, 8<sup>th</sup> Edition, 2019. ISBN-13:978-1-4963-8502-4
  - Not available via HSC Library
  - Previously purchased for PHA5782C Patient Care 2
2. Brunton L. Goodman and Gilman's The Pharmacological Basis of Therapeutics, McGraw-Hill Professional, New York, NY, 13<sup>th</sup> Edition, 2018. ISBN-13: 978-1259584732; ISBN-10: 1259584739
  - Available via HSC Library – Access Pharmacy
3. DiPiro, J, Talbert R, Yee G, Matzke G, Wells B, Posey L. Pharmacotherapy – A Pathophysiologic Approach. McGraw-Hill Professional, New York, NY, 12th Edition, 2021.
  - Previously used in PHA5878C Patient Care 3
  - Available via HSC Library – Access Pharmacy
4. Krinsky DL, Ferreri SP, Hemstreet B, et al. Handbook of nonprescription drugs: An interactive approach to self-care.
  - Not available via HSC Library
  - Previously purchased for PHA5781 Patient Care 1

Use [UF VPN to access UF Libraries Resources](#) when off-campus. The UF HSC library staff can assist you with questions or issues related to accessing online library materials. For assistance contact your College of Pharmacy librarian or visit the [HSC Library Website](#) at this URL: <http://www.library.health.ufl.edu/>

## Suggested Textbooks/Readings

Suggested readings may be posted in Canvas.

## Other Required Learning Resources

Non-programmable calculators are required for this course.

## Materials & Supplies Fees

None

## Student Evaluation & Grading

Evaluation Methods and How Grades are calculated.

[The Canvas gradebook will be set-up using the percentages below to compute the grade.]

*Table 1.1 Evaluation and Grading*

Assessment Item	Grade Percentage
iRATs [N=11; lowest dropped; 1.4% each]	14%
tRATs [N=11]	6%
Exam 1	20%
Exam 2	20%
Exam 3 (Final Exam)	30%
Facilitated Case Discussions	2%
SOAP note submission	3%
Conducting a Meta-Analysis	1%
Capstone	4%
Total	100%

## Description of graded assessments:

**SOAP note submission:** this activity will evaluate students' ability to effectively communicate via written documentation. A templated format will be provided to guide the completion of a full SOAP note with a focus on medication adjustment in patients with renal changes. A rubric will be supplied at time of note assignment

**Conducting a meta-analysis:** Class activities include data extraction from original articles, pooled effect-size calculations, results interpretation, and drawing a forest plot.

**Capstone:** This graded assignment will be completed within the capstone class session and vary from short answer to multiple choice type activities and adjustments to optimize pharmaceutical care plans.

## Rounding of grades:

Final grades in Canvas will be rounded to the 2<sup>nd</sup> decimal place. If the decimal is X.495 or higher, Canvas will round the grade to X.50. The above scale depicts this policy and grades are determined accordingly. Grade assignment is made using this policy and NO EXCEPTIONS will be made in situations where a student's grade is "close."

Table 1.2 Grading Scale

Percentage Range	Letter Grade
92.50-100%	A
89.50-92.49%	A-
86.50-89.49%	B+
82.50-86.49%	B
79.50-82.49%	B-
76.50-79.49%	C+
72.50-76.49%	C
69.50-72.49%	C-
66.50-69.49%	D+
62.50-66.49%	D
59.50-62.49%	D-
< 59.50%	E

## Educational Technology Use

The following technology below will be used during the course and the student must have the appropriate technology and software.

1. ExamSoft™ Testing Platform
2. Canvas™ Learning Management System

For technical support, navigate to [Educational Technology and IT Support Contact Information](http://curriculum.pharmacy.ufl.edu/current-students/technical-help/) at this URL:  
<http://curriculum.pharmacy.ufl.edu/current-students/technical-help/>

## Pharm.D. Course Policies

The Policies in the following link apply to this course. Review the [Pharm.D. Course Policies](http://curriculum.pharmacy.ufl.edu/current-students/course-policies/) carefully, at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/course-policies/>

## Makeup Assignments

Makeup assignments may be required for excused absences from all Active Learning Sessions. Students will be required to complete the makeup assignment within one week of the missed session.

## Late Assignments

Late assignments will be discussed on a case-by-case basis.

## Respect for Diversity

The University of Florida College of Pharmacy strives to stimulate a culture that promotes diversity and inclusion within an exceptional community of students, faculty, and staff. It is our intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit.

We intend to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let us know ways to improve the course's effectiveness for you personally or for other students or student groups.

If any of our class meetings conflict with any of your religious events, an excused absence will be provided when requested using the standard UF COP process as detailed in the [UF COP Course policies](#).

If you feel that you have experienced or witnessed any bias/treatment that falls short of these expectations, you may submit a report through the UF [COP Student Mistreatment Report](#).

## Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.



# Appendix A. Course Directory

## Teaching Partnership Leader/Course Director:

### Adonice Khoury, Pharm.D., BCPS

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### Erin St. Onge, Pharm.D.

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### Questions to Ask:

- Questions about grades
- Concerns about performance
- Guidance when there are performance problems (failing grades)
- General questions about content

## Other Teaching Partnership Faculty Members:

### William Allen, JD, MDiv

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## **Instructional Designer:**

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## **Academic Coordinator Gainesville Campus:**

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## **Educational Coordinators**

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## **Questions to Ask:**

- Issues related to course policies (absences, make up exams, missed attendance)
- Absence/tardy requests (Only the Academic Coordinator handles absence requests)
- Questions about dates, deadlines, meeting place
- Availability of handouts and other course materials
- Assignment directions
- Questions about grade entries in gradebook (missing grades, incorrect grade)
- Assistance with ExamSoft® (Distance campus students may contact the Educational Coordinator for use of Exemplify and assistance during exams. The Academic Coordinator is the contact person for issues related to grading and posting of ExamSoft grades.)

## Appendix B: Course Outline

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
	0	Other	Welcome video		Adonice Khoury, Erin St Onge
	1	Module	PUD and GERD		Erin St Onge
	1.1	Unit	Pharmacology of GI Drugs Part I		Erin St Onge
01/18/23	1.1	Lecture Video	Pharmacology of GI Drugs I: Gastric acid reducing drugs	0.75	Erin St Onge
	1.2	Unit	Medicinal Chemistry of GI Drugs		Chengguo Xing
01/18/23	1.2.1	Lecture Video	Medicinal Chemistry of Gastrointestinal Drugs: Part 1 H <sub>2</sub> antagonists	0.8	Chengguo Xing
01/18/23	1.2.2	Lecture Video	Medicinal Chemistry of Gastrointestinal Drugs: Part 2 Proton Pump Inhibitors (PPIs)	0.8	Chengguo Xing
	1.3	Unit	Management of Peptic Ulcer Disease		Erin St Onge
01/19/23	1.3	Lecture Video	Peptic Ulcer Disease (PUD)	1.2	Erin St Onge
	1.4	Unit	Management of GERD		Erin St Onge
01/19/23	1.4	Lecture Video	Gastroesophageal Reflux Disease (GERD)	1.64	Erin St Onge
	1.5	Unit	Transcending Concept - Evidence-Based Practice		Haesuk Park
01/19/23	1.5	Reading (PDF)	Walker E et al. Meta-analysis: Its strengths and limitations. Cleveland Clinic Journal of Medicine 2008;75(6):431-439	1.2	Haesuk Park
01/19/23	1.5	Reading (PDF)	Yu EW, Bauer SR, Bain PA, Bauer DC. Proton pump inhibitors and risk of fractures: a meta-analysis of 11 international studies. Am J Med. 2011 Jun;124(6):519-26.	1	Haesuk Park
	1.6	Unit	Transcending Concept - Self Care 2		Erin St Onge
01/20/23	1.6	Lecture Video	Self-Care for Heartburn and Dyspepsia	1	Erin St Onge
	1.7	Unit	Pharmacogenomics for Gastrointestinal Disorders		Emily Cicali
01/20/23	1.7	Lecture Video	Pharmacogenomics for Gastrointestinal Disorders	0.64	Emily Cicali
1/23/23 @ 10:40am- 12:35pm	1	Active Learning Session	Active Learning Session 1A: Ulcers & GERD (2 hours)	1	Chengguo Xing, Emily Cicali, Erin St Onge, Haesuk Park
01/20/23	1.1- 1.7	Quiz (iRAT/tRAT)	iRAT/tRAT 1		Erin St Onge
1/23/23 @ 1:55pm- 3:50pm	1	Active Learning Session	Active Learning Session 1B: Ulcers & GERD (2 hours)	1	Chengguo Xing, Emily Cicali, Erin St Onge, Haesuk Park
1/24/23 at 11:59pm		Assignment (Graded)	Conducting a meta-analysis (to begin during ALS 1B)		Haesuk Park

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
	2	Module	Common Gastrointestinal Complaints and Inflammatory Bowel Disease		Adonice Khoury, Kimberly Stultz
	2.1	Unit	Pharmacology of GI Drugs Part II:		Kimberly Stultz
01/23/23	2.1.1	Lecture Video	Pharmacology of Drugs for Nausea and Vomiting (Anti-Emetic Drugs I)	0.44	Kimberly Stultz
01/23/23	2.1.2	Lecture Video	Pharmacology of Drugs for Nausea and Vomiting (Anti-Emetic Drugs II)	0.4	Kimberly Stultz
01/23/23	2.1.3	Lecture Video	Pharmacology of Anti-Diarrheal Agents	0.36	Kimberly Stultz
01/23/23	2.1.4	Lecture Video	Pharmacology of Drugs for Constipation (Laxatives and Cathartics)	0.6	Kimberly Stultz
01/23/23	2.1.5	Lecture Video	Pharmacology of Drugs for Irritable Bowel Syndrome (IBS)	0.4	Kimberly Stultz
	2.2	Unit	Medicinal Chemistry of GI Drugs		Chengguo Xing
01/23/23	2.2.1	Lecture Video	Medicinal Chemistry of GI Drugs – Diarrhea, IBS, and nausea/vomiting	1	Chengguo Xing
	2.3	Unit	Management of Nausea & Vomiting—including Self-care		Kimberly Stultz
01/23/23	2.3	Lecture Video	Nausea and Vomiting	0.6	Kimberly Stultz
	2.4	Unit	Management of Diarrhea, Constipation, Irritable Bowel Syndrome		Kimberly Stultz
01/24/23	2.4.1	Lecture Video	Management of Diarrhea	0.4	Kimberly Stultz
01/24/23	2.4.2	Lecture Video	Constipation	0.5	Kimberly Stultz
01/24/23	2.4.3	Lecture Video	IBS	0.5	Kimberly Stultz
01/24/23	2.4	Video Other	<a href="https://www.youtube.com/watch?v=Ve6eWR8nivU">Irritable Bowel Syndrome Overview   GI Society</a> <a href="https://www.youtube.com/watch?v=Ve6eWR8nivU">https://www.youtube.com/watch?v=Ve6eWR8nivU</a>	0.06	Kimberly Stultz
01/24/23	2.4	Video Other	<a href="https://www.youtube.com/watch?v=dSSXOcGG_HE">Irritable Bowel Syndrome Treatments   GI Society</a> <a href="https://www.youtube.com/watch?v=dSSXOcGG_HE">https://www.youtube.com/watch?v=dSSXOcGG_HE</a>	0.1	Kimberly Stultz
	2.5	Unit	Transcending Concept - Behavioral: Stress		Teresa Cavanaugh
01/24/23	2.5	Reading-- PDF	Moloney RD, Johnson AC, O'Mahony SM et al. Stress and the microbiota-gut-brain axis in visceral pain: Relevance to irritable bowel syndrome. CNS Neuroscience & Therapeutics 2016;22:102-117.	2	Teresa Cavanaugh
01/24/23	2.5	Video Other	How to make Stress your Friend, Kelley McGonigal	0.1	Teresa Cavanaugh
01/24/23	2.5	Video Other	<a href="https://ed.ted.com/lessons/how-stress-affects-your-body-sharon-horesh-bergquist%20">How stress affects your body - Sharon Horesh Bergquist</a> <a href="https://ed.ted.com/lessons/how-stress-affects-your-body-sharon-horesh-bergquist%20">https://ed.ted.com/lessons/how-stress-affects-your-body-sharon-horesh-bergquist%20</a>	0.3	Teresa Cavanaugh
	2.5	Other	Study Guide		Teresa Cavanaugh
	2.6	Unit	Transcending Concept - Self-care 1: Herbals and supplements in digestive disorders		Oliver Grundmann

<b>Date and Time [Recommended for Independent Study]</b>	<b>Mod #</b>	<b>Activity</b>	<b>Activity Title</b>	<b>Contact Time (hr)</b>	<b>Responsible</b>
01/24/23	2.6	Lecture Video	Self-care -- GI disorders supplement use	1.2	Oliver Grundmann
1/25/23 @ 10:40am- 12:35pm	2-2.3	Active Learning Session	Active Learning Session 2A: Common GI Complaints (2 hours)	1	Adonice Khoury, Kimberly Stultz
01/25/23	2.1- 2.6	Quiz (iRAT/tRAT)	iRAT/tRAT 2		Adonice Paul Khoury, Kimberly Stultz
1/25/23 @ 1:55pm- 3:50pm	2.4- 2.6	Active Learning Session	Active Learning Session 2B: Common GI Complaints (2 hours)	1	Adonice Khoury, Kimberly Stultz, Oliver Grundmann, Teresa Cavanaugh
	2.7	Unit	Pharmacology of Selected Anti-inflammatory Agents: Aminosalicylates, Azathioprine, Biologicals		Adonice Khoury
01/26/23	2.7	Lecture Video	Pharmacology of Selected Anti-inflammatory Agents	1	Adonice Khoury
	2.8	Unit	Medicinal Chemistry of Selected Anti-inflammatory Agents: Aminosalicylates, Azathioprine, Biologicals		Chengguo Xing
01/26/23	2.8	Lecture Video	Medicinal Chemistry of Selected Anti-inflammatory Agents	0.4	Chengguo Xing
	2.9	Unit	Management of Inflammatory Bowel Disease		Adonice Khoury
01/26/23	2.9.1	Lecture Video	Inflammatory Bowel Disease (IBD) Part 1: Disease Overview and Intro to Treatment	1.2	Adonice Khoury
01/26/23	2.9.2	Lecture Video	Inflammatory Bowel Disease (IBD) Part 2: Evidence- Based Patient Management	1.2	Adonice Khoury
01/26/23	2.9	Reading-- Web	Scribano, et al. "Use of antibiotics in the treatment of Crohn's disease." World J Gastroenterol 19.5 (2013): 648-653.	0.5	Adonice Khoury
1/27/23 @ 8:30am- 10:25am	2- 2.9.2	Active Learning Session	Active Learning Session 2C: Inflammatory Bowel Disease (2 hours)	1	Adonice Khoury, Chengguo Xing
01/27/23	2.7- 2.9.2	Quiz (iRAT/tRAT)	iRAT/tRAT 3		Adonice Khoury
1/30/23 @ 10am- 12pm	1-2	Exam	Exam 1	2	Adonice Khoury, Erin St Onge
	3	Module	Hepatic Disease		Lindsey Childs- Kean
	3.1	Unit	Pharmacology of Hepatitis Antivirals		Lindsey Childs- Kean
01/31/23	3.1	Lecture Video	Pharmacology of Hepatitis Antivirals	0.67	Lindsey Childs- Kean
	3.2	Unit	Management of Viral Hepatitis		Lindsey Childs- Kean
01/31/23	3.2	Lecture Video	Management of Viral Hepatitis	1	Lindsey Childs- Kean

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
	3.3	Unit	Management of Portal Hypertension & Cirrhosis		Adonice Khoury
01/31/23	3.3.1	Lecture Video	Cirrhosis and Portal Hypertension Part 1: Background & Clinical Presentation	0.84	Adonice Khoury
02/01/23	3.3.2	Lecture Video	Cirrhosis and Portal Hypertension Part 2: Management	1	Adonice Khoury
	3.4	Unit	Transcending Concept - Pharmacokinetics: PKDosing in hepatic dysfunction		Lisa M Vandervoort
02/01/23	3.4	Lecture Video	Transcending Concept: Pharmacokinetic Dosing in Liver Disease	0.5	Lisa M Vandervoort
	3.5	Unit	Transcending Concept - Drug Delivery Systems: Drug Administration in Patients with GI Disorders		Lisa M Vandervoort
02/01/23	3.5	Lecture Video	Administering Medications Through Enteral Tubes	0.5	Lisa M Vandervoort
	3.6	Unit	Management of Drug Interactions		Lisa M Vandervoort
02/01/23	3.6	Lecture Video	Assessment and Management of Drug-Drug Interactions	0.5	Lisa M Vandervoort
	3.7	Unit	Transcending Concept - Communications - Patients: Communicating with patients when an error occurs		Kayihura Manigaba
02/01/23	3.7	Lecture Video	Communicating with patients when an error occurs	0.26	Kayihura Manigaba
2/2/23 @ 10:40am- 12:35pm	3-3.7	Active Learning Session	Active Learning Session 3A: Cirrhosis and Hepatitis (2 hours)	1	Adonice Khoury, Kayihura Manigaba, Lindsey Childs- Kean, Lisa M Vandervoort
02/02/23	3-3.7	Quiz (iRAT/tRAT)	iRAT/tRAT 4		Lindsey Childs- Kean
2/2/23 @ 1:55pm- 3:50pm	3-3.7	Active Learning Session	Active Learning Session 3B: Cirrhosis and Hepatitis (2 hours)	1	Adonice Khoury, Kayihura Manigaba, Lindsey Childs- Kean, Lisa M Vandervoort
2/3/23 @ 10am- 12pm		Facilitated Case Discussion	Facilitated Case Discussion 1: Cirrhosis and Heart Failure		
	4	Module	Gastrointestinal Infections		Lindsey Childs- Kean
	4.1	Unit	Management of Gastrointestinal Infections and C. Diff		Lindsey Childs- Kean
02/03/23	4.1	Lecture Video	Management of GI Infections	1	Lindsey Childs- Kean
	4.2	Unit	Management of Intra-abdominal Infections		Kayihura Manigaba
02/03/23	4.2.1	Lecture Video	Intra-abdominal Infections-Part I: Background and Clinical Presentation	0.4	Kayihura Manigaba



Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
02/03/23	4.2.2	Lecture Video	Intra-Abdominal Infections-Part 2: Management	0.56	Kayihura Manigaba
	4.3	Unit	Transcending Concept - Interprofessional Communication: Present Oral/Written Plan Using Evidence		Katherine L Vogel Anderson
02/03/23	4.3	Lecture Video	Transcending Concept - Interprofessional Communication: Present Oral/Written Plan Using Evidence	0.8	Katherine L Vogel Anderson
	4.4	Unit	Transcending Concept - Communications - Patients: MI		Teresa Elaine Roane
02/03/23	4.4.1	Lecture Video	Intro to comMlt modules	0.26	Teresa Elaine Roane
02/03/23	4.4.2	Other	comMlt elearning Module 4: Developing Rapport and the Synergy of MI	1.5	Teresa Elaine Roane
2/6/23 @ 10:40am- 12:35pm	4- 4.4.2	Active Learning Session	Active Learning Session 4A: Gastrointestinal Infections and Communications (2 hours)	1	Katherine L Vogel Anderson, Kayihura Manigaba, Lindsey Childs- Kean, Teresa Elaine Roane
02/06/23	4.1- 4.4.2	Quiz (iRAT/tRAT)	iRAT/tRAT 5		Lindsey Childs- Kean
2/6/23 @ 1:55pm- 3:50pm	4- 4.4.2	Active Learning Session	Active Learning Session 4B: Gastrointestinal Infections and Communications (2 hours)	1	Katherine L Vogel Anderson, Kayihura Manigaba, Lindsey Childs- Kean, Teresa Elaine Roane
02/06/23	3-4	Assignment (Ungraded)	Introduction of medication list		Lindsey Childs- Kean
2/6/23 @ 4pm- 4:30pm		Exam Review	Exam 1 Review		
	5	Module	Nutrition & Weight Management		Carol Motycka
	5.1	Unit	Med Chem, Pharmacology and Intro to Pharmacotherapy of Vitamins		Robert W Huigens III
02/07/23	5.1	Lecture Video	Medicinal Chemistry of Vitamins	1	Robert W Huigens III
	5.1	Other	Self-Assess: Know your numbers!		Carol Motycka
	5.2	Unit	Effects of Vitamin Deficiencies		Carol Motycka
02/07/23		Video Other	Dietary Supplements--What you need to know	0.04	Carol Motycka
02/07/23	5.2	Reading	OTC Handbook for Non Prescription Drugs--Chapter 23	0.5	Carol Motycka
	5.3	Unit	Introduction to Obesity		Carol Motycka
02/07/23	5.3	Lecture Video	Introduction to Obesity	0.7	Carol Motycka

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
	5.4	Unit	Pharmacology of Weight Loss Agents/Stimulants		Joanna Peris
02/07/23	5.4	Lecture Video	Pharmacology of Weight Loss Agents	1	Joanna Peris
	5.5	Unit	Med Chem of Weight Loss Agents/Stimulants		Robert W Huigens III
02/07/23	5.5	Lecture Video	Med Chem of Weight Loss Agents/Stimulants	0.34	Robert W Huigens III
	5.6	Unit	Pharmacotherapy of Weight loss Agents		Carol Motycka
02/07/23	5.6	Lecture Video	Pharmacotherapy of Weight Loss medications	1.2	Carol Motycka
	5.7	Unit	Pediatric Obesity		Carol Motycka
02/08/23	5.7.1	Lecture Video	Pediatric Obesity	0.5	Carol Motycka
02/08/23	5.7.2	Video Other	The Weight of the Nation: Children in Crisis (YouTube)	1.34	Carol Motycka
	5.8	Unit	Transcending Concept - Specialized Populations: Obesity and Bariatric Dosing		Carol Motycka
02/08/23	5.8.1	Lecture Video	Obesity and Bariatric Surgery Dosing	1	Carol Motycka
	5.9	Unit	Transcending Concept - Self-care 1: herbals & Supplements used in weight loss; sports nutrition		Oliver Grundmann
02/08/23	5.9.1	Lecture Video	Weight Management Supplements	0.66	Oliver Grundmann
02/08/23	5.9.2	Lecture Video	Sports Nutrition	0.74	Oliver Grundmann
2/9/23 @ 10:40am- 12:35pm	5.1- 5.5	Active Learning Session	Active Learning Session 5A: Weight Loss and Vitamins (2 hours)	1	Carol Motycka, Joanna Peris, Robert W Huigens III
02/09/23	5.1- 5.9.2	Quiz (iRAT/tRAT)	iRAT/tRAT 6		Carol Motycka
2/9/23 @ 1:55pm- 3:50pm	5.6- 5.9	Active Learning Session	Active Learning Session 5B: Weight Loss and Vitamins (2hours)	1	Carol Motycka, Oliver Grundmann
2/10/23 @ 10am- 12pm		Facilitated Case Discussion	Facilitated Case Discussion 2: Obesity and Cardiovascular		
	6	Module	Colorectal Cancer		David DeRemer
	6.1	Unit	Management of Colorectal Cancer		David DeRemer
02/10/23	6.1	Lecture Video	Management of Colorectal Cancer	1.5	David DeRemer
	6.2	Unit	Transcending Concept - Health and Wellness: Colorectal Screening		David DeRemer
02/10/23	6.2	Lecture Video	Colorectal Screening	0.84	David DeRemer
	6.3	Unit	Pathophysiology of Anemias		Adonice Khoury

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
02/10/23	6.3.1	Lecture Video	Anemias: Pathophysiology, Clinical Presentation & Laboratory Evaluation, Part I: Intro and Overview	0.7	Adonice Khoury
02/10/23	6.3.2	Lecture Video	Anemias: Pathophysiology, Clinical Presentation & Laboratory Evaluation, Part 2: Specific Anemias	0.7	Adonice Khoury
	6.4	Unit	Therapeutics of Anemias		Michelle Farland
02/10/23	6.4	Lecture Video	Anemias: Specific Clinical Presentation & Treatment Options	1.36	Michelle Farland
2/13/23 @ 1:55pm-3:50pm	6-6.4	Active Learning Session	Active Learning Session 6: Colorectal Cancer and anemia (2 hours)	1	Adonice Khoury, David DeRemer, Michelle Farland
02/13/23	6.1-6.4	Quiz (iRAT/tRAT)	iRAT/tRAT 7		David DeRemer
2/16/23 @ 2pm-4pm	3-6	Exam	Exam 2	2	Adonice Khoury, Erin St Onge
	7	Module	Introduction to the Renal System		Carinda Feild
	7.1	Unit	Pathophysiology of the Renal System		Lihui Yuan
02/17/23	7.1	Lecture Video	Pathophysiology of the Renal System	1.4	Lihui Yuan
	7.2	Unit	Fluids and Electrolytes		Carinda Feild
02/17/23	7.2.1	Lecture Video	IV Fluids	0.8	Carinda Feild
02/17/23	7.2.2	Lecture Video	Electrolytes Disorder	1	Carinda Feild
	7.3	Unit	Acid-Base Balance		Carinda Feild
02/17/23	7.3	Lecture Video	Acid-Base Disorder	1	Carinda Feild
	7.4	Unit	Estimating Renal Function		Kaitlin Alexander
02/17/23	7.4	Lecture Video	Estimating Renal Function - Clinical Examples	0.25	Kaitlin Alexander
	7.5	Unit	Transcending Concept - Pharmacokinetic: Dosing in Renal Dysfunction		Lisa M Vandervoort
02/17/23	7.5.1	Lecture Video	Transcending Concept - Pharmacokinetic Dosing in Kidney Dysfunction	0.55	Lisa M Vandervoort
2/20/23 @ 10:40am-12:35pm	7-7.5	Active Learning Session	Active Learning Session 7A: Renal Impairment (2 hours)	1	Carinda Feild, Kaitlin Alexander, Lihui Yuan, Lisa M Vandervoort
02/20/23	7.1-7.5	Quiz (iRAT/tRAT)	iRAT/tRAT #8		
2/20/23 @ 1:55pm-3:50pm	7-7.5	Active Learning Session	Active Learning Session 7B: Renal Impairment (2 hours)	1	Carinda Feild, Kaitlin Alexander, Lihui Yuan, Lisa M Vandervoort

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
	7-7.5	Assignment (Graded)	Templated renal/Pharmacokinetics SOAP note		
	8	Module	Renal Failure & Disease		Kaitlin Alexander
	8.1	Unit	Acute Kidney Injury		Kaitlin Alexander
02/21/23	8.1.1	Lecture Video	Acute Kidney Injury-Part 1-Background	0.5	Kaitlin Alexander
02/21/23	8.1.2	Lecture Video	Acute Kidney Injury-Part 2-Clinical Presentation	0.5	Kaitlin Alexander
02/21/23	8.1.3	Lecture Video	Acute Kidney Injury-Part 3-Prevention&Treatment	1	Kaitlin Alexander
	8.2	Unit	Drug-Induced Kidney Disease		Kaitlin Alexander
02/21/23	8.2.1	Lecture Video	Drug-Induced Kidney Disease	0.9	Kaitlin Alexander
2/22/23 @ 8:30am- 10:25am	8- 8.2.2	Active Learning Session	Active Learning Session 8A: Acute Renal Failure (2 hours)	1	Kaitlin Alexander
02/22/23	8.1- 8.2	Quiz (iRAT/tRAT)	iRAT/tRAT 9		Kaitlin Alexander
	8.3	Unit	Chronic Kidney Disease		Joy Wright
02/23/23	8.3.1	Lecture Video	Introduction to Chronic Kidney Disease	0.75	Joy Wright
02/23/23	8.3.2	Lecture Video	Chronic Kidney Disease: Anemia	0.6	Joy Wright
02/23/23	8.3.3	Lecture Video	Chronic Kidney Disease: Mineral & Bone Disorders	0.55	Joy Wright
02/23/23	8.3.4	Lecture Video	Chronic Kidney Disease: Complications Wrap-up	0.3	Joy Wright
02/23/23	8.3.5	Lecture Video	Chronic Kidney Disease: ESRD & Patient Case	0.7	Joy Wright
	8.3	Video Other	Living Well with Kidney Failure, Part 5: Hemodialysis		Joy Wright
	8.3	Video Other	Living Well with Kidney Failure, Part 4: Peritoneal Dialysis		Joy Wright
	8.4	Unit	Transcending Concept - Informatics: Foundation Informatics – Data Quality in CDSS		Khoa Nguyen
02/23/23	8.4	Lecture Video	Transcending Concept: Health Information & Informatics—Foundation Informatics – Data Quality in CDSS	0.65	Khoa Nguyen
	8.5	Unit	Transcending Concept - Pharmacokinetics: Drug Individualization—Dialysis; Hemodialysis and Peritoneal Dialysis		Kayihura Manigaba
02/23/23	8.5.1	Lecture Video	Transcending Concept - Pharmacokinetics: Drug Individualization—Dialysis; Hemodialysis and Peritoneal Dialysis	0.06	Kayihura Manigaba

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
02/23/23	8.5.2	Reading	Roberts DM, Sevastos J, Carland JE, Stocker SL, Lea-Henry TN. Clinical Pharmacokinetics in Kidney Disease: Application to Rational Design of Dosing Regimens. Clin J Am Soc Nephrol. 2018;13(8):1254-1263. doi:10.2215/CJN.05150418	1.5	Kayihura Manigaba
02/23/23	8.5.3	Reading	<a href="#">Hoff BM, Maker JH, Dager WE, Heintz BH. Antibiotic Dosing for Critically Ill Adult Patients Receiving Intermittent Hemodialysis, Prolonged Intermittent Renal Replacement Therapy, and Continuous Renal Replacement Therapy: An Update. Annals of Pharmacotherapy 2020, Vol. 54(1) 43–55.  https://doi.org/10.1177/1060028019865873</a>	1.5	Kayihura Manigaba
	8.6	Unit	Transcending Concept: Patient Safety/Med Errors in CKD		Kaitlin Alexander
02/23/23	8.6	Reading (PDF)	Whittaker CF. Medication Safety Principles and Practice in CKD. Clin J Am Soc Nephrol. 2018; 13(11): 1738–1746.	0.5	Kaitlin Alexander
	8.7	Unit	Transcending Concept: Health Disparities; Health Literacy—Renal Patients		MegCholack Awunti
02/23/23	8.7.1	Lecture Video	Transcending concept: Health disparities and health literacy of renal patients	0.5	MegCholack Awunti
02/23/23	8.7.2	Reading (PDF)	<a href="#">Norbert Lameire, Raymond Vanholder, Health literacy problems of kidney patients, Nephrology Dialysis Transplantation, Volume 36, Issue 7, July 2021, Pages 1155–1157.  https://doi.org/10.1093/ndt/qfaa340</a>	0.25	MegCholack Awunti
02/23/23		Reading (PDF)	<a href="#">Tucker JK. What's behind racial disparities in kidney disease? Harvard Health blog. Updated Feb 2021. Accessed Dec 2021.  https://www.health.harvard.edu/blog/whats-behind-racial-disparities-in-kidney-disease-2021020321842</a>	0.25	MegCholack Awunti
02/23/23		Reading (PDF)	<a href="#">Chronic Kidney Disease Disparities: Educational Guide for Primary Care. Centers for Medicare &amp; Medicaid Services. Updated April 2021. Accessed Dec 2021.  https://www.cms.gov/files/document/chronic-kidney-disease-disparities-educational-guide-primary-care.pdf</a>	1	MegCholack Awunti
02/23/23		Reading (PDF)	<a href="#">Boonstra MD, Reijneveld SA, Foitzik EM, et al. How to tackle health literacy problems in chronic kidney disease patients? A systematic review to identify promising intervention targets and strategies. Nephrology Dialysis Transplantation, Volume 36, Issue 7, July 2021, Pages 1207–1221.  https://doi.org/10.1093/ndt/qfaa273</a>	2	MegCholack Awunti
	8.8	Unit	Transcending Concept - Law & Ethics: Professionalism		Bill Allen
02/23/23	8.8	Lecture Video	Distributive Justice in Allocation of Dialysis & Kidney Transplants	0.8	Bill Allen

Date and Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Responsible
2/24/23 @ 10:40am-12:35pm	8.31-8.8	Active Learning Session	Active Learning Session 8B: Chronic Renal Failure (2 hours)	1	Bill Allen, Joy Wright, Kaitlin Alexander, Kayihura Manigaba, Khoa Nguyen, MegCholack Awunti
02/24/23	8.3-8.8	Quiz (iRAT/tRAT)	iRAT/tRAT 10		Khoa Nguyen
2/24/23 @ 1:55pm-3:50pm	8.3-8.8	Active Learning Session	Active Learning Session 8C: Chronic Renal Failure (2 hours)	1	Bill Allen, Joy Wright, Kaitlin Alexander, Kayihura Manigaba, Khoa Nguyen, MegCholack Awunti
2/24/23 @ 4pm-4:30pm		Exam Review	Exam 2 Review		
	9	Module	Infectious Diseases of the Kidney		Barbara Santevecchi
	9.1	Unit	Management of Pyelonephritis		Barbara Santevecchi
02/27/23	9.1	Lecture Video	Management of Pyelonephritis	0.6	Barbara Santevecchi
	9.2	Unit	Management of Complicated UTIs		Barbara Santevecchi
02/27/23	9.2	Lecture Video	Management of Complicated UTIs	0.85	Barbara Santevecchi
	9.3	Unit	Catheter associated UTI		Barbara Santevecchi
02/27/23	9.3	Lecture Video	Catheter associated UTI	0.5	Barbara Santevecchi
	9.4	Unit	Candiduria		Barbara Santevecchi
02/27/23	9.4	Lecture Video	Candiduria	0.75	Barbara Santevecchi
	9.5	Unit	Prostatitis		Barbara Santevecchi
02/27/23	9.5	Lecture Video	Acute Bacterial Prostatitis	0.4	Barbara Santevecchi
2/28/23 @ 1:55pm-3:50pm	9-9.5	Active Learning Session	Active Learning Session 9: Complicated UTIs (2 hours)	1	Barbara Santevecchi
02/28/23	9.1-9.5	Quiz (iRAT/tRAT)	iRAT/tRAT 11		Barbara Santevecchi
2/28/23 @ 4pm-4:30pm		Course Evaluation	Patient Care 4 Course Evaluation - Required Attendance		

<b>Date and Time [Recommended for Independent Study]</b>	<b>Mod #</b>	<b>Activity</b>	<b>Activity Title</b>	<b>Contact Time (hr)</b>	<b>Responsible</b>
3/1/23 @ 1:55pm-6pm	1-9	Active Learning Session	PC4 Capstone (4 hours)	2	Adonice Khoury, Barbara Santevecchi, Carinda Feild, Carol Motycka, David DeRemer, Erin St Onge, Kaitlin Alexander, Lindsey Childs-Kean
03/01/23		Assignment (Graded)	Graded Assignment Capstone		Adonice Khoury, Erin St Onge
3/3/23 @ 9am-11:30am	1-9	Exam	Final Exam: Modules 1-9 (2.5 hours)		Adonice Khoury, Erin St Onge
3/9/23 @ 4pm-4:30pm		Exam Review	Exam 3 Review		
			Total Contact Hours	93	