

# PHA5519 Advanced Topics in Anticoagulation Pharmacotherapy

Fall 2021

2 Semester Credit Hours Block 7 A-E Grading

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*The purpose of this course is to allow student pharmacists to further develop the knowledge and skills necessary to make optimal decisions regarding anticoagulation pharmacotherapy across the continuum of care. This course will provide opportunities for advanced discussion of topics in anticoagulation involving: hospital and ambulatory management, drug selection, monitoring, reversal approaches for anticoagulation therapy and anticoagulation management in special populations. Student pharmacists will build upon their current knowledge of medical conditions requiring anticoagulation treatment versus prophylaxis and pharmacologic agent selection through a variety of interactive activities including in-depth discussion of complex patient cases, mock patient care rounds, a debate related to controversial clinical practice and student presentations.*

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## Teaching Partnership Leader

Christina E. DeRemer, PharmD, BCPS, BCACP, FASHP

- Email: [cderemer@ufl.edu](mailto:cderemer@ufl.edu)
- Office: HPNP 3306/GNV
- Phone: 352-273-6224
- Office Hours: Open office hours and corresponding zoom link will be posted in canvas

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

## Entrustable Professional Activities

1. Collect information to identify a patient's medication-related problems and health-related needs.
2. Analyze information to determine the effects of medication therapy, identify medication-related problems, and prioritize health-related needs.
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
4. Implement a care plan in collaboration with the patient, caregivers, and other health professionals.
5. Follow-up and monitor a care plan.
6. Collaborate as a member of an interprofessional team.
7. Identify patients at risk for prevalent diseases in a population.
8. Minimize adverse drug events and medication errors.

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9. Maximize the appropriate use of medications in a population.
10. Educate patients and professional colleagues regarding the appropriate use of medications.
11. Use evidence-based information to advance patient care.

## Course-Level Objectives

Upon completion of this course, the student will:

1. List risk factors, indications, anticoagulation resources, and validated risk stratification tools available for patient assessment
2. Develop a pharmacists' patient care plan to address thromboembolic indications noting considerations for how to initiate, transition, interrupt, modify, or monitor anticoagulation therapy in various patient care settings.
3. Interpret pertinent labs values for various indications.
4. Predict disease, drug, and/or food interactions requiring anticoagulation therapy modifications.
5. Develop knowledge and clinical decision-making skills related to risk assessment for indication, anticoagulation drug selection, dosing, monitoring, and appropriate durations or transitions of therapy across the continuum of anticoagulation care.
6. Demonstrate communication techniques for thorough patient and care giver comprehension of care plan.
7. Describe strategies for selecting specific agents based on clinical evidence.
8. Present patient care recommendations/interventions concisely and effectively in a professional setting with focus on communication skills targeting key providers including physicians and patients.
9. Evaluate available direct oral anticoagulants for various indications with consideration to special populations.
10. Review medical literature to identify controversial and important questions related to clinical anticoagulation and present care plans despite controversy.

## Course Pre-requisites

Successful completion of Blocks 1-7 of the Doctor of Pharmacy curriculum including milestones

## Course Co-requisites

None required

## Required Textbooks/Readings

- There are no required textbooks for this course.
- Required readings will be posted on Canvas.

## Suggested Textbooks/Readings

Students should get in the habit of using tertiary resources (e.g. Clinical Pharmacology) to check for potential drug interactions when doing a patient case, just as you would in practice.

## Other Required Learning Resources

None

## Materials & Supplies Fees

None

## Student Evaluation & Grading

Assessment Item	Grade Percentage
QUIZ (5)	40%
Assignments	
1. Warfarin cases (Individual assessment)	10%
2. DOAC PowerPoint discussion (Team assessment)	5%
3. Search and Find assignment (Individual assessment)	10%
Final Exam	35%
Total	100%

Description of graded assignments:

1. Independent warfarin cases: electronically, cases will be posted to canvas with multiple choice or short answer responses required. These will be graded to accuracy on management to the situation provided based on material discussed in Patient Care 3 and this elective.
2. Team creation of a PowerPoint answering a clinical question in pearl format. Using template, students will present for <5min to articulate their information sharing based on learning of topic. Discussion and verbal defense may follow presentation
3. Search and Find assignment will take the form of a word puzzle with clues that students may immediately be able to answer, while others will require some reference or note searches.

Table 1. Grading Scale

## 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."

## 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](#) at this URL:  
<http://curriculum.pharmacy.ufl.edu/current-students/technical-help/>

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

## Pharm.D. Course Policies

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

## Late Assignment Policy

All late assignments will have a 20% reduction of assignment grade.

## Make-up Assignment Policy

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.

## 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.

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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 feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>

# Appendix A. Course Directory

## Teaching Partnership Leader/Course Director:

Christina E. DeRemer, PharmD, BCPS, BCACP, FASHP

- Email: [cderemer@ufl.edu](mailto:cderemer@ufl.edu)
- Office: HPNP 3306/GNV
- Phone: 352-273-6224
- Office Hours: Open office hours and corresponding zoom link will be posted in canvas

### Questions to Ask:

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

## Instructional Designer:

Kathryn Rush

Email: [krush@cop.ufl.edu](mailto:krush@cop.ufl.edu)

Office: HPNP 4312

Phone: 352-273-6284

Absence/Tardy Email: [absent2PD@cop.ufl.edu](mailto:absent2PD@cop.ufl.edu) or [absent3PD@cop.ufl.edu](mailto:absent3PD@cop.ufl.edu)

## Academic Coordinator Gainesville Campus:

Ashleigh Langford

- Email: [lynn8597@cop.ufl.edu](mailto:lynn8597@cop.ufl.edu)
- Office: HPNP 4312
- Phone: (352) 273 - 6002

**Absence/Tardy Email:** [absent2pd@cop.ufl.edu](mailto:absent2pd@cop.ufl.edu) or [absent3pd@cop.ufl.edu](mailto:absent3pd@cop.ufl.edu)

(Visit the course policy site for further instructions)

## Educational Coordinators:

McKenzie Wallen  
Email: [mwallen@cop.ufl.edu](mailto:mwallen@cop.ufl.edu)  
Office: Jacksonville Campus

Andrea M Arredondo  
Email: [aarredondo1@cop.ufl.edu](mailto:aarredondo1@cop.ufl.edu)  
Office: Orlando Campus

### 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.)

## Other Teaching Partnership Faculty Members:

Renad Abu-Sawwa, PharmD, BCPPS

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## Appendix B. Course Directory

<i>Recommended Dates for Independent Study</i>	<i>Delivery Date</i>	<i>Mod#</i>	<i>Unit Topic</i>	<i>Contact Hours [hr.]a</i>	<i>Faculty Author</i>	<i>Learning Objectives Covered</i>
		0	Watch: Welcome video	0.1	DeRemer, C	
		0	Course introduction Quiz		DeRemer, C	
12/1/21		1	Module 1: Foundations of warfarin and monitoring	8hr		1, 2, 3, 4, 6, 8, 10
12/1/21		1.1	Watch: Warfarin Therapy Overview	1 hr	Vogel-Anderson, K	
12/1/21		1.2	Watch: Warfarin in Venous Thromboembolism and other indications	1 hr	Taylor, J	
12/1/21		1.3	Expanding on hypercoagulant states	1 hr	Poteet, M	
12/1/21		1.4	New era of COVID influenced clot risk: infection vs vaccination	0.5	Poteet, M	
12/2/21		1.5	Watch: Pharmacogenomics Impact on Anticoagulation	0.5 hr	Cicali, E	
12/2/21		1.6	READ: Witt DM et al. Guidance for the practical management of warfarin therapy in the treatment of venous thromboembolism. J Thromb Thrombolysis (2016) 41:187–205	0.5 hr	Taylor, J	
12/2/21		1.7	Watch: Time in therapeutic range (TTR) – discussion of methods	0.5 hr	DeRemer, C	
12/3/21: 815-1005		1-1.7	Active Learning Session 1 - QUIZ - Live Patient presentation	2 hr	Taylor, J	2, 5, 4, 6, 10

			- Complicated warfarin scenarios		Vogel Anderson, K Poteet, M	
<i>Graded Assignment</i>	<i>Distributed 12/3/21</i>  <i>DUE: 12/6 @ midnight</i>	1.1-1.7	<i>Complicated warfarin cases INDIVIDUAL SUBMISSION - Graded</i>	1 hr	Taylor, J Vogel Anderson, K. Cicali, E, Poteet, M	
			<i>Assignment release for DOAC assignment with team and clinical statement</i>			
Day/Time		2	Module 2: Management of anticoagulation for inpatient setting	5.5		1, 2, 3, 5, 7, 10
12/3/21		2.1	Watch: Overview for heparin anticoagulation management	0.5 hr	Alexander, K	
12/3/21		2.2	Watch: Inpatient management of Heparin induced thrombocytopenia (HIT)"	0.5 hr	Feild	
12/6/21		2.3	Watch: Disseminated intravascular coagulation	0.5 hr	Feild	
12/6/21		2.4	Watch: Inpatient assess for VTE risk and prophylaxis in special populations (obesity, trauma, controversy with filters)	1 hr	Alexander, K	
12/6/21		2.5	Anticoagulation in Mechanical Circulatory Support	1 hr	Renad Abu-Sawwa	
12/8/21: 815-1005		2-2.5	Active Learning Session 2 - Quiz - Mock patient care rounds	2 hr	Alexander, Feild, Abu-Sawwa	1, 2, 3, 5, 7, 10
Day/Time		3	Module 3: Direct Oral Anticoagulants	4.5	DeRemer, C Dietrich, E	5, 7, 9, 10

12/7/21		3.1	Watch: Overview of DOAC therapy	0.5 hr	DeRemer, C	
12/7/21		3.2	Watch: DOAC literature for atrial fibrillation	0.5 hr	DeRemer, C	
12/7/21		3.3	Watch: DOAC use in VTE treatment and extended time	0.5 hr	E. Dietrich	
12/7/21		3.4	Watch: Expanded DOAC indications	0.5	E. Dietrich	
Team Graded Assignment	Released 12/1/21  Submission due: 12/9 @ noon	3.4	DOAC PowerPoint assignment	0.5 hr		
12/10/21 815-1005		3-3.3	Active Learning Session 3 - Quiz - Review recordings (team assignment), hear rebuttal arguments and vote	2 hr	DeRemer, C Dietrich, E	
		4	Module 4: strategies for interruption and reversal for anticoagulation therapy	5	Alexander, K DeRemer C	1, 2, 10
12/10/21		4.1	Watch: Defining anticoagulation related bleeds	0.5 hr	DeRemer, C	
12/10/21		4.2	Watch: Peri-Procedural anticoagulation management	1 hr	Alexander, K	
12/10/21		4.3	Selection of reversal agents – and when to resume anticoagulation. Role of FFP, vit K formulations	1.5 hr	Alexander, K	
12/13/21 815-1005		1-4.3	Active Learning Session 4 - Quiz - Clinical scenario decisions for reversal or agent change	2 hr	Alexander, K DeRemer, C	

Individual Graded assignment	Released 12/13/21 @ 10am  Submission due: 12/14 @ midnight	1-4.3	Search and Find answers	1 HR		
		5	Module 5: Special Populations requiring anticoagulation management	6	Manasco, K DeRemer, D Sanchez, R DeRemer, C	2, 5, 9, 10
12/14/21		5.1	Watch: Anticoagulation in pediatric patients	0.5 hr	Manasco, K	
12/14/21		5.2	Watch: Anticoagulation in pregnancy	0.5 hr	Manasco, K	
12/14/21		5.3	Watch: Anticoagulation in patients with oncology conditions	1 hr	DeRemer, D	
12/14/21		5.4	Watch: Anticoagulants in patients with kidney disease	1 hr	Sanchez, R	
12/14/21		5.5	Watch: Anticoagulation treatment in obese patients	0.5 hr	DeRemer, C	
12/14/21		5.6	Watch: Anticoagulation risk in elderly patients	0.5 hr	DeRemer, C	
12/15/21 @815-1005		5-5.6	Active Learning Session 5 - Q&A for anticoagulation decisions in special populations - Quiz	2 hr	Manasco, K DeRemer, D Sanchez, R	
12/16/21		1-7	Material review – ZOOM			
12/17 10-12pm			<b>Final exam</b>			
			<i>Total</i>	<i>30 hr</i>		