

# PHA5519 Advanced Topics in Anticoagulation Pharmacotherapy

Fall 2020

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, TTS, 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.

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8. Minimize adverse drug events and medication errors.
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 pharmacist's patient care plan to address thromboembolic indications noting considerations for how to initiate, transition, interrupt, or modify anticoagulation therapy in various patient care settings.
3. Interpret pertinent lab 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. Illustrate 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

## Course Outline

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

<b>Date</b> <i>Recommended Dates for Independent Study</i>	<b>Delivery Date</b>	<b>Mod #</b>	<b>Unit Topic</b>	<b>Contact Hours</b> <i>[hr.]a</i>	<b>Faculty Author</b>	<b>Learning Objectives Covered</b>
		0	Watch: Welcome video	0.1	DeRemer, C	
		0	Course introduction Quiz		DeRemer, C	
Monday 11/30/20		1	Module 1: Foundations of warfarin: types and significant of location for thrombosis, risk stratification, and dosing strategies			1, 2, 3, 4
		1.1	Watch: Warfarin Therapy Overview	1 hr	Vogel-Anderson, K	
		1.2	Watch: Warfarin in Venous Thromboembolism and other indications	0.75 hr	Taylor, J	
		1.3	Watch: Pharmacogenomics Impact on Anticoagulation	0.5 hr	Cicali, E	
		1.5	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	
Tuesday, 12/1/20	12/1/20 12-2pm	1-1.5	Active Learning Session 1 - Readiness Assessment Quiz 1(iRAT) - Patient presentation - Complicated warfarin scenarios	2 hr	Taylor, J Vogel Anderson, K DeRemer, C	2, 5, 4, 6, 10
Assignment Graded	DUE 12/2/20 2359	1.1-1.5	Complicated warfarin cases INDIVIDUAL SUBMISSION - Graded	1 hr	Taylor, J Vogel Anderson, K. Cicali, E	
Wednesday 12/2/20		2	Module 2: Time in therapeutic range			2, 3, 8, 10
Wednesday 12/2/20		2.1	Watch: Time in therapeutic range (TTR) – discussion of methods	0.5 hr	DeRemer, C	6a

Wednesday 12/2/20		3	Module 3: Transitions of care for patients anticoagulated	1 hr	Soucie, J	5
Wednesday 12/2/20		3.1	Watch: Intro for transitions of care anticoagulated of patients	1 hr	Soucie, J	5
Graded Assignment Individual	<i>DUE 12/3/20 2359</i>	2-2.1	Time in therapeutic range calculations: example cases	0.5 hr	DeRemer, C	3,8,10,6a
Graded Assignment Team	<i>DUE 12/3/20 2359</i>		Team created transition of care anticoagulation case with 3 questions	1 hr	DeRemer, C	1-10
Thursday 12/3/20		4	Module 4: Management of anticoagulation for inpatient setting			1, 2, 3
		4.1	Watch: Inpatient management of HIT	0.5 hr	Voils, S	
		4.2	Watch: Peri-Procedural anticoagulation management	1 hr	Vascimini, A	
		4.3	READ: Inpatient assess for VTE risk and prophylaxis	1 hr	Voils, S	
		1.4	Watch: COVID-19-Associated Coagulopathy	0.5 hr	Gayle, Ansley Voils, S	
		4.4	Watch: Overview for heparin anticoagulation management	0.5 hr	C. DeRemer	
Friday 12/4/20	<i>12/4/20 12-2pm</i>	4-4.4	Active Learning Session 2 - Readiness Assessment Quiz 1(iRAT) - Mock patient care rounds	2 hr	Vascimini, A DeRemer, C	7, 8, 9
Friday 12/4/20		5	Awesome		DeRemer, C Dietrich, E	5, 7, 9, 10
		5.1	Watch: Overview of DOAC therapy	0.5 hr	DeRemer, C	
		5.2	Watch: DOAC literature for atrial fibrillation	0.5 hr	DeRemer, C	
		5.3	Watch: DOAC use in VTE treatment and extended time	0.5 hr	E. Dietrich	

Graded Assignment Due Monday 12/7/20		5.4	DOAC assignment	0.5 hr		
Monday 12/7/20	12/7/20 12-2pm	5-5.4	Active Learning Session 3 - Readiness Assessment Quiz 1(iRAT) - Review recordings (team assignment), hear rebuttal arguments and vote	2 hr	DeRemer, C Dietrich, E	
Monday, 12/7/20		6	Module 6: Considerations for reversal of anticoagulation		DeRemer, C	1, 2, 10
		6.1	READ: <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4899056/pdf/wjem-17-264.pdf">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4899056/pdf/wjem-17-264.pdf</a> Christos S. Naples R. Anticoagulation Reversal and Treatment strategies in Major bleeding: Update 2016. West J Emerg Med. 2016; 17(3):264–270.	1 hr	Voils, S	
		6.2	Watch: Defining types of bleed	0.5 hr	DeRemer, C	
		6.3	Watch: Reversal: applying UF Health Shands Protocol	1 hr	Voils, S	
Tuesday 12/8/20	12/8/20 12-2pm	1, 5, 6	Active Learning Session 4 - Readiness Assessment Quiz 1(iRAT) - Clinical scenario decisions for reversal or agent change	2 hr	DeRemer, C	
Graded Assignment Team	DUE 12/11/20 2359	all	PEER team case solution Solve assigned case from peer team case creation	1 hr	DeRemer, C	1-10
Wednesday, 12/9/20		7	Module 7: Special Populations requiring anticoagulation management		Manasco, K DeRemer, D Tenpas, A DeRemer, C	2, 5, 9, 10
		7.1	Watch: Anticoagulation in pediatric patients	0.33 hr	Manasco, K	
		7.2	Watch: Anticoagulation in pregnancy	0.33 hr	Manasco, K	

		7.3	Watch: Anticoagulation in patients with oncology conditions	1 hr	DeRemer, D	
		7.4	Watch: Anticoagulants in patients with kidney disease	1 hr	Tenpas, A	
		7.5	Watch: Anticoagulation in obese patients	0.33 hr	DeRemer, C	
		7.6	Watch: Anticoagulation in elderly patients	0.33 hr	DeRemer, C	
Friday, Dec 12/13/20	12/11/20 12-2pm	7	Active Learning Session 5 - Q&A for anticoagulation decisions in special populations - Readiness Assessment Quiz 1(iRAT/tRAT)	2 hr	Manasco, K DeRemer, D Tenpas, A DeRemer, C	
Monday 12/14/20	21/14/20 12-2pm	1-7	Material review – ZOOM	1 hour		
Wednesday 12/16/20	TIME		<b>Final exam</b>			
			<i>Total</i>	<i>30 hr</i>		

## 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
iRATs (5)	30%
<b>Assignments</b>	
1. Independent warfarin cases	10%
2. Independent TTR calculations	5%
3. Team peer-case submission	10%
4. Independent peer-case response	10%
5. DOAC assignment	5%
<b>Final Exam</b>	30%
<b>Total</b>	100%

### Description of graded assignments:

- 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.
- Independent TTR calculations: scenarios will be posted in canvas surrounding time in therapeutic range discussion points. You will be asked to calculate some TTRs from information extracted in the situations.
- Team case for transition of care:
  - Teams will create case situation with 3 questions for assessment that will be taken by another team. Both activities will carry a separate grade for participation and quality of case.
- Team DOAC debate recording: recording will be graded on being submitted on time and accuracy of information stated in debate. All students will need to participate in a speaking role for team to acquire high marks.

Table 1. 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-

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### **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."

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/>

## **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, TTS, 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

Elliot Tordoff

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Phone: 352-294-5215

## Academic Coordinator:

TBC

Email:

Office:

Phone: 352-294-5215

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

## Educational Coordinators:

McKenzie Wallen

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Office: Jacksonville Campus

Iverta Allen

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

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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.)

## Other Teaching Partnership Faculty Members:

Course Faculty and Office Hours

**Teaching Partnership Leader:**

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