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.

Teaching Partnership Leader

Christina E. DeRemer, PharmD, BCPS, FASHP, BCACP
- Email: cderemer@ufl.edu
- Office: HPNP 3306/GNV
- Phone: 352-273-6224
- Office Hours: By appointment ONLY.

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

Entrustable Professional Activities

Patient care Provider Domain
1. Collect information to identify a patient’s medication-related problems and health-related needs.
   - ST1.3. Determine a patient’s medication adherence.
   - ST1.4. Use health records to determine a patient’s health-related needs relevant to setting of care and purpose of the encounter.
2. Analyze information to determine the effects of medication therapy, identify medication-related problems, and prioritize health-related needs.
   - ST2.3. Interpret laboratory test results
   - ST 2.3b Interpret data related to personalized medicine.
   - 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.
   ST3.5. Determine the appropriate time interval(s) to collect monitoring data.
   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.

5. Follow-up and monitor a care plan.
   ST5.1. Collect monitoring data at the appropriate time interval(s).
   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.

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).

Information Master Domain

11. Educate patients and professional colleagues regarding the appropriate use of medications.
    ST11.1. Lead a discussion regarding a recently published research manuscript and its application to patient care.

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

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, or modify 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. Illustrate communication techniques for thorough patient and care giver comprehension of care plan.
7. Describe strategies for selecting specific agents based on clinical evidenced.
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

See Appendix B. 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

<table>
<thead>
<tr>
<th>Date [Recommended Date for Independent Study]</th>
<th>Mod #</th>
<th>Unit Topic</th>
<th>Contact Time [hr.]</th>
<th>Responsible</th>
<th>Syllabus Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/03/2018</td>
<td>1.1</td>
<td>Watch: Warfarin in Venous Thromboembolism and other indications</td>
<td>0.67</td>
<td>James Robert Taylor, Katherine L Vogel Anderson</td>
<td>1-4</td>
</tr>
<tr>
<td>12/03/2019</td>
<td>1.2</td>
<td>Watch: Warfarin Therapy Overview</td>
<td>1</td>
<td>Katherine L Vogel Anderson</td>
<td>1-4</td>
</tr>
<tr>
<td>DUE 12/05/2018 at 12:00pm NOON</td>
<td>1</td>
<td>Case application - warfarin with risk assessment</td>
<td>2</td>
<td>James Robert Taylor, Katherine L Vogel Anderson</td>
<td>1-4</td>
</tr>
<tr>
<td>Date</td>
<td>Mod #</td>
<td>Unit Topic</td>
<td>Contact Time [hr.]</td>
<td>Responsible</td>
<td>Syllabus Learning Objectives</td>
</tr>
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<tr>
<td>12/4/2018</td>
<td>1</td>
<td>Team Meeting Day for Team Assignment: post 5 minute team recording debating assigned DOAC for clinical scenario</td>
<td></td>
<td>James Robert Taylor, Katherine L Vogel Anderson</td>
<td></td>
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<tr>
<td>12/4/2018</td>
<td>2</td>
<td>Module 2: Management of anticoagulation for inpatient setting</td>
<td></td>
<td>Voils, Dupree</td>
<td>1-3</td>
</tr>
<tr>
<td>12/4/2018</td>
<td>2.1</td>
<td>Watch: Inpatient management of HITT</td>
<td>1</td>
<td>Stacy Alan Voils</td>
<td></td>
</tr>
<tr>
<td>12/4/2018</td>
<td>2.2</td>
<td>Watch: Periprocedural Anticoagulation Management</td>
<td>1</td>
<td>Lori Dupree</td>
<td></td>
</tr>
<tr>
<td>12/4/2018</td>
<td>2</td>
<td>Read: The use of weighted and scored risk assessment models for venous thromboembolism</td>
<td>1</td>
<td>Stacy Alan Voils</td>
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<tr>
<td>12/05/2018</td>
<td>1</td>
<td>Active Learning Session 1: Case Application - Warfarin Scenarios</td>
<td>2</td>
<td>James Robert Taylor, Katherine L Vogel Anderson</td>
<td>2, 4-6, 10</td>
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<tr>
<td></td>
<td>1</td>
<td>iRAT/IRAT 1</td>
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<tr>
<td>12/06/2018</td>
<td>2</td>
<td>Active Learning Session 2: Mock Patient Rounds</td>
<td>2</td>
<td>Lori Dupree, Stacy Alan Voils</td>
<td>7-9</td>
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<td></td>
<td>2</td>
<td>iRAT/IRAT 2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>3</td>
<td>Module 3: Direct oral anticoagulants</td>
<td></td>
<td>Christina DeRemer, Eric A Dietrich</td>
<td>5, 7, 9, 10</td>
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<tr>
<td>12/06/2018</td>
<td>3.1</td>
<td>Watch: Overview of DOAC therapy</td>
<td>0.5</td>
<td>Christina DeRemer</td>
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<tr>
<td>12/06/2019</td>
<td>3.2</td>
<td>Watch: DOAC use in Non-Valvular Atrial Fibrillation</td>
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<td>Christina DeRemer</td>
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<tr>
<td>12/06/2018</td>
<td>3.3</td>
<td>Watch: DOAC use in VTE treatment and extended time</td>
<td>0.5</td>
<td>Eric A Dietrich</td>
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<tr>
<td>DUE 12/07/2018</td>
<td>3</td>
<td>TEAM Assignment: post 5 minute team recording debating assigned DOAC for clinical scenario</td>
<td>0.5</td>
<td>Christina DeRemer</td>
<td></td>
</tr>
<tr>
<td>12/07/2018</td>
<td>3</td>
<td>Active Learning Session 3: Review Recordings, Rebuttal, Vote</td>
<td>2</td>
<td>Christina DeRemer, Eric A Dietrich</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>iRAT/IRAT 3</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>12/07/2018</td>
<td>4</td>
<td>Module 4: Transitions of care for patients anticoagulated</td>
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<td>Christina DeRemer</td>
<td>5</td>
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<tr>
<td>12/07/2018</td>
<td>4.1</td>
<td>Watch: Intro for transitions of care anticoagulated of patients</td>
<td>1</td>
<td>Christina DeRemer</td>
<td></td>
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<tr>
<td>Date</td>
<td>Mod #</td>
<td>Unit Topic</td>
<td>Contact Time [hr.]</td>
<td>Responsible</td>
<td>Syllabus Learning Objectives</td>
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<tr>
<td>12/10/2018 at 4:15-6:05pm</td>
<td>4</td>
<td>Active Learning Session 4: Transition Patient Through Care Continuum on Anticoagulation Therapy for Indication: Verbal Gallery</td>
<td>2</td>
<td>Christina DeRemer</td>
<td>2, 6, 10</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Module 5: Considerations for reversal of anticoagulation</td>
<td></td>
<td>Christina DeRemer, Stacy Alan Voils</td>
<td>1-2, 10</td>
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<tr>
<td>12/11/2018</td>
<td>5.1</td>
<td>Watch: Defining types of bleed</td>
<td>0.6</td>
<td>Christina DeRemer</td>
<td></td>
</tr>
<tr>
<td>12/11/2018</td>
<td>5.2</td>
<td>Watch: Applying Shands reversal protocol and addition drug information</td>
<td>1</td>
<td>Stacy Alan Voils</td>
<td></td>
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<tr>
<td></td>
<td>6</td>
<td>Module 6: Time in therapeutic range</td>
<td></td>
<td>Christina DeRemer</td>
<td>2-3, 8, 10</td>
</tr>
<tr>
<td>12/11/2018</td>
<td>6.1</td>
<td>Watch: Time in therapeutic range (TTR) – discussion of methods</td>
<td>0.5</td>
<td>Christina DeRemer</td>
<td></td>
</tr>
<tr>
<td><strong>DUE 12/12/2018 at 3:00pm</strong></td>
<td>6</td>
<td><strong>Assignment:</strong> Calculate TTR for example cases and submit through canvas</td>
<td>0.5</td>
<td>Christina DeRemer</td>
<td></td>
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<tr>
<td>12/12/2018 at 4:15-6:05pm</td>
<td>4-6</td>
<td>Active Learning Session 5: Clinical Scenario Decisions for Reversal or Agent Change</td>
<td>2</td>
<td>Christina DeRemer, Stacy Alan Voils</td>
<td></td>
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<tr>
<td></td>
<td>4-5</td>
<td>iRAT/IRAT 4</td>
<td></td>
<td>Christina DeRemer</td>
<td></td>
</tr>
<tr>
<td>12/12/2018</td>
<td>7.1</td>
<td>Watch: Anticoagulation use in Pediatrics</td>
<td>0.3</td>
<td>Kalen Manasco</td>
<td></td>
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<tr>
<td>12/12/2018</td>
<td>7.2</td>
<td>Watch: Anticoagulation use in Pregnancy</td>
<td>0.3</td>
<td>Kalen Manasco</td>
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<tr>
<td>12/12/2018</td>
<td>7.3</td>
<td>Watch: Anticoagulation use in Oncology-cancer</td>
<td>0.3</td>
<td>David DeRemer</td>
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<tr>
<td>12/12/2018</td>
<td>7</td>
<td>Read: Clinical Pharmacology of Oral Anticoagulants in Patients with Kidney Disease</td>
<td>1.5</td>
<td>Lori Dupree</td>
<td></td>
</tr>
</tbody>
</table>
### 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

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Grade Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>iRATs (5)</td>
<td>10%</td>
</tr>
<tr>
<td>tRATs (5)</td>
<td>15%</td>
</tr>
<tr>
<td>Case application - warfarin</td>
<td>15%</td>
</tr>
<tr>
<td>Recording Activity</td>
<td>10%</td>
</tr>
<tr>
<td>Time in Therapeutic Range Submission</td>
<td>15%</td>
</tr>
<tr>
<td>Participation in active learning sessions (See Appendix C)</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1. Grading Scale

Rounding of grades:
Final grades in Canvas will be rounded to the 2nd 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/

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/
Appendix A. Course Directory

Teaching Partnership Leader/Course Director:

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

- Email: cderemer@ufl.edu
- Office: HPNP 3306/GNV
- Phone: 352-273-6224
- Office Hours: By appointment ONLY

Questions to Ask:

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

Instructional Designer:

Sarah Burgess
Email: sburgess@ufl.edu
Office: HPNP 4309
Phone: 352-273-9492

Nicole Marlowe
Email: nicolemarlowe@cop.ufl.edu
Office: HPNP 4312
Phone: 352-273-6523
Absence/Tardy Email: absent2pd@cop.ufl.edu or absent3pd@cop.ufl.edu (course policy site)

Educational Coordinators:

McKenzie Wallen
Email: mwallen@cop.ufl.edu
Office: Jacksonville Campus

Iverta Allen
Email: iallen1@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 Examplify 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:

Katie Vogel Anderson, PharmD, BCACP
Phone: 352-273-6240
Email: kvanderson@cop.ufl.edu

David DeRemer, PharmD, BCOP, FCCP
Phone: 352-273-6225
Email: dderemer@cop.ufl.edu

Eric Dietrich, PharmD, BCPS, CPC-A
Phone: 352-294-5648
Email: ead1129@cop.ufl.edu

Lori Dupree, PharmD, BCPS
Phone: (904) 244-9590
Email: LDupree@cop.ufl.edu

Kalen Manasco, PharmD, BCPS, FPPAG, FCCP
Phone: 352-294-8749
Email: KManasco@cop.ufl.edu

James R. Taylor, PharmD, CDE, BCACP
Phone: 352-273-6239
Email: JTaylor@cop.ufl.edu

Stacy Voils, PharmD, MS, BCPS, FCCM, FCCP
Phone: 352-294-5276
Email: SVoils@cop.ufl.edu
Appendix C: Rubric for Assessing Student Participation in Class

This document will be used to provide an assessment of the student’s overall participation at the end of the course. Instructors will keep track of student participation during each session.

<table>
<thead>
<tr>
<th>Frequency of participation in class</th>
<th>Exemplary (Score = 5)</th>
<th>Proficient (Score = 4)</th>
<th>Developing (Score = 3)</th>
<th>Unacceptable (Score = 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student initiates contributions more than once in each recitation.</td>
<td>Student initiates contribution once in each recitation.</td>
<td>Student initiates contribution at least in half of the recitations</td>
<td>Student does not initiate contribution and needs instructor to solicit input.</td>
<td></td>
</tr>
</tbody>
</table>

| Quality of comments | Comments always insightful and constructive; uses appropriate terminology. Comments balanced between general impressions, opinions and specific, thoughtful criticisms or contributions. | Comments mostly insightful and constructive; mostly uses appropriate terminology. Occasionally comments are too general or not relevant to the discussion. | Comments are sometimes constructive, with occasional signs of insight. Student does not use appropriate terminology; comments not always relevant to the discussion. | Comments are uninformative, lacking in appropriate terminology. Heavy reliance on opinion and personal taste, e.g., “I love it”, “I hate it”, “It’s bad” etc. |

| Listening Skills | Student listens attentively when others present materials, perspectives, as indicated by comments that build on others’ remarks, i.e., student hears what others say and contributes to the dialogue. | Student is mostly attentive when others present ideas, materials, as indicated by comments that reflect and build on others’ remarks. Occasionally needs encouragement or reminder from T.A of focus of comment. | Student is often inattentive and needs reminder of focus of class. Occasionally makes disruptive comments while others are speaking. | Does not listen to others; regularly talks while others speak or does not pay attention while others speak; detracts from discussion; sleeps, etc. |

**Total Score = ____**  Conversion to a percentage grade:
15 = 100%  14 = 93%  13 = 83%  12 = 77%  11 = 70%  10 = 66%  9 = 60%  8 = 50%  7 = 45%  6 = 40%  5 = 33%  4 = 26%  3 = 20%  2 = 13%  1 = 6%  0 = 0%