Course Purpose:
This course is the second part of a two-semester continuum designed to flow logically, that began with the with fundamental physicochemical concepts of pharmaceutical preformulation, followed by their integration into understanding pharmaceutical dosage forms and routes of drug administration. This semester, the course will begin with pharmaceutical calculations, then continue through the remaining dosage forms and routes. (See course schedule in the Appendix for specific topics.) The concepts and facts learned in this course are part of a foundational knowledge base that enables a clear and comprehensive understanding of drug products and preparations. This knowledge is integrated with other curricular knowledge to help create logically sound arguments for a particular patient’s care and accurate explanations of the effects of the particular drug therapy.

Course Faculty and Office Hours
Course Coordinator and Instructor:
Cary Mobley, R.Ph., Ph.D.
Email: mobley@cop.ufl.edu  Office: HPNP 1315  Phone: 352-273-6282

Office Hours:
Mondays 11:45-12:35 and by appointment (mobley@cop.ufl.edu )

Directions for Contacting Course Faculty:
Please feel free to contact the course coordinator via email (mobley@cop.ufl.edu ). Please put “Dosage Forms 2” in the email subject, and please indicate which campus you attend in your email signature. Emails will be returned as soon as possible.

Place and Time of Class Session
Lectures in Gainesville: Monday 12:50-1:40 in C1-11, Friday 11:45-12:35 in HPNP 1404

Discussion Sessions
(Weeks 2,3 and 4):  G114 – Section 7189
(Weeks 2,3 and 4):  G103 – Section 7190
9:35 – 10:25
10:40-11:30

How This Course Relates to the Learning Outcomes You Will Achieve in the Pharm.D. Program:
This course prepares the Pharm.D. student to accomplish the following abilities and the related Student Learning Outcomes (SLOs) upon graduation:

1. Provide Patient-centered Care - Specifically: Design, implement, monitor, evaluate, and adjust pharmacy care plans that are patient-specific; address health literacy, cultural diversity, and behavioral psychosocial issues; are evidence-based and accomplished in collaboration with other health professionals. (Foundational)
2. Perform pharmacist responsibilities within the medication use system and relate to the larger health care systems to assure safe and quality patient care. (Foundational)
3. Use pharmacy knowledge in the care of patients and resolution of practice problems. (SLO 6.1)
4. Solve complex practice problems (both patient-specific and general practice) using an evidence-based approach, other aspects of good clinical science, and informatics. (SLO 8.1)

Course Objectives

Upon completion of this course, the student will be able to:
1. Become proficient at performing pharmaceutical calculations.
2. Define important concepts and recall important facts associated with drug product formulation and routes of drug administration.
3. Integrate knowledge about a drug's physicochemical properties, formulation, and administration route to help explain its relative bioavailability.
4. Integrate knowledge about drug formulation design and routes of drug administration to explain concepts of proper drug product usage by the patient.
5. Recall important facts about proper patient use of the dosage forms taught in this course.
6. Infer consequences of altering a drug's physicochemical properties, formulation, or administration.
7. Reason about observed clinical or non-clinical data or phenomena based on knowledge of a drug's physicochemical properties, formulation, or administration.

Course Structure & Outline

Course Structure.

1. This is a lecture-based course wherein lectures are delivered live in Gainesville and recorded for viewing and listening by students at all College of Pharmacy sites.
2. Lecture handouts are written in a consistent, outline-based manner and are designed to be succinct consolidations of essential course concepts and facts, abstracted from a wide variety of resources. They are designed and delivered with the goal of maximizing the efficiency of quality of the learning process for the students.
3. Web Page Lectures: Lectures are delivered as web pages with hyperlinks to explanations, facts, definitions, illustrations, examples, and other related content from other lectures and from the Internet. These web-page versions of the lectures are made available online for student self-usage approximately one-week before each exam.
4. Practice Assessments: Non-mandatory practice assessments will be made available in ELS to help students self-assess their understanding of course concepts and facts.
5. Required Reading Assignments: Periodic supplemental reading assignments from the course texts and the Internet will be required to increase the comprehensiveness and clarity of course topics. These assignments are chosen in consideration of their concision and clarity. Material from required reading assignments will be material for exams.
6. Recommended Reading Assignments: For each major course topic, supplemental reading assignments will be recommended. This material will not be required for exams.
7. **Discussion Boards:** Two types of discussion boards made in ELS:
   a. Student-to-Student Discussion Board – an unmonitored discussion board for students to communicate with each other
   b. Exam-Specific Discussion Board – a discussion board monitored by the course instructor dedicated to help students clarify course material related to specific upcoming exams

**Course Outline/Activities.** See the Course Schedule in Appendix.

**Textbooks**

**Required Course Materials**

A. **Required Texts:**

*Pharmaceutical Dosage Forms and Delivery Systems, 9th Ed.*, LV Allen, NG Popovich, & HC Ansel (Eds.), Lippincott Williams and Wilkins.


B. **Simple Calculators** - Calculators allowing NO text input, graphing, or programming

**Active Learning Requirements**

For all learning experiences in this course, including reading assignments and lectures, students are expected to actively engage their minds in the learning process, striving to grasp the meaning and relevance of all transmitted concepts and facts. Students should strive to discover deficiencies in their understanding, and attempt to resolve those deficiencies by any of several means, including through their own research (a recommended first-step) and through consultation with course instructors and fellow student-pharmacists.

1. **Lecture Viewing** – Watching and listening to lectures are considered active processes in this course. As with other audiovisual-based forms of communication, the recipients are expected to actively engage their minds to understand the material and integrate it with their existing knowledge base. Instructors must continuously strive to create and deliver lectures in a manner that stimulates the engagement and aids the integration.

2. **Self-Paced Web-Based Lecture Review** – When made available, students are welcome to navigate the lecture material on their own, exploring hyperlinks to a variety of related facts and concepts.

3. **Reading Assignments** – As with lectures, students are expected to actively engage in their understanding of the ideas communicated in reading assignments.

4. **Self-Assessments and Discussion Boards in ELS (or Facebook) -** It is recommended that students take advantage of the voluntary self-assessments and communication boards to help actively discover and resolve knowledge deficiencies and problems with test-taking, and to share and gain insights on time-management and coping strategies.
Student Evaluation & Grading

Evaluation Methods

Students will be evaluated using a problem-solving calculations exam (exam 1) and two multiple-choice exams (exams 2 and 3). They are weighted as follows:
Exam 1 (Feb 14th) - 30%. Exam 2 (Mar 25th) and exam 3 (May 1st) – 35% each

**Important:** The student must earn at least a **70%** on the Calculations Exam (1st exam). A student who does not earn at least a 70% must **retake** a calculations exam – with attempted completion of all problems - during the second exam and – if necessary - during the final exam. For the repeated attempts, a **maximum grade of 70%** will be awarded if the student earns at least a 70%. If the student still does not earn at least a 70% on the calculations exam retakes, a grade of **Incomplete** will be given for the course. If after 3 attempts of retaking the exam or by the beginning of the following Fall semester - whichever comes first - if a 70% is not achieved, a zero will be awarded for the exam, and the course grade will be changed from an **Incomplete** to the recalculated grade.

**Extra Credit:** Calculations Sessions

One percentage point will be added to the final grade for each calculations session. To receive credit, the student must do all of the following, without exception:

1. Attend the **entire** discussion session that you are assigned to, and be **on time**.
2. Turn in the problem set at the beginning of the discussion session, with EACH problem at least attempted to be solved – in **pencil**. (Students are strongly advised to make a photocopy of the problem set, but **must** turn in the **original document**.)
3. Participate in the discussion when asked to do so by the facilitator.

**Grading Scale**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93-100%</td>
<td>A</td>
</tr>
<tr>
<td>90-92%</td>
<td>A-</td>
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<tr>
<td>87-89%</td>
<td>B+</td>
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<tr>
<td>83-86%</td>
<td>B</td>
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<tr>
<td>80-82%</td>
<td>B-</td>
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<td>Below 80%</td>
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**Class Attendance Policy**

Attendance is not required for lectures.

**Quiz/Exam Policy**

**Exam Rules**

1. Students must arrive and be seated promptly to be eligible to take the exam. **Penalties for tardiness:** One point per minute may be deducted for students arriving late to an exam. Students who arrive more than 10 minutes late to an exam are not eligible to take the exam and must contact the course coordinator within 24 hours of the exam to arrange for a makeup exam that may be offered, depending on the circumstances surrounding the tardiness.
2. No talking or other disruptive behavior during the distribution or taking of the exam.
3. No calculators allowing text input, graphing, or programming will be allowed to be used in an exam. Use of such calculators will be considered evidence of academic dishonesty.
4. No sharing of calculators.
5. Nonessential materials (e.g., books, coats, notes, purses, etc.) are NOT allowed at the student’s desk during examination periods. Please leave all nonessential materials outside of or in the front of the examination room.
6. Other exam rules may be instituted during the progression of the course.
7. Once the exam commences, students may not leave the room without first turning in the exam. Once the exam is turned in, the examination period for the student is considered complete and the student must leave the examination room. For example, if the student must use the restroom, the student must first turn in the exam and may not return afterward to continue with the exam.

*Failure to follow exam rules may be considered as evidence of academic dishonesty.*

**Review of Exams by Students**
Exams are not given back to the students. Within *seven* business days of posting the grades, students - in the presence of a designated staff person - may review his or her exam scantron, along with a copy of the exam key. Students must make an appointment with the designated staff person to review their exams. Students cannot take anything out with them. No rebuttal forms are needed as no additional points will be awarded based on students contesting a question. Additional points would be awarded for the following reasons only: The exam was graded incorrectly (scantron error) or the instructor considers an exam question to be a poor question.

**Make-up Quiz/Exam Policy**
Makeup exams are given only under special circumstances. If the student is unable to take a scheduled examination, the course coordinator must be notified before the examination. In addition, a written letter of explanation, requesting that the absence from the exam be excused, must be presented before the exam or immediately afterwards. An excused absence is allowable when: 1) the student is hospitalized and/or has been advised by a licensed medical practitioner or hospital not to attend the exam, or 2) if there is a documented death of an immediate family member. All excused absences will be considered on an individual basis by the course coordinator. Depending on the decision, a comprehensive exam may be given, which will contain material from all previous exams. The questions on the makeup exam may be in the form of essay, short answer, or multiple-choice. With the exception of highly extenuating circumstances, failure to follow the prescribed procedures or failure to attend the announced comprehensive examination will result in a grade of zero for that exam. A request for an "excused absence" does not guarantee acceptance. No precedence can be drawn from any courses in the College of Pharmacy or any other college within University of Florida.

**Policy on Old Quizzes and Assignments**
Old exams are not provided, but Self-Assessments in ELS will include exam-like practice questions.

**General College of Pharmacy Course Policies**
The College of Pharmacy has a website that lists course policies that are common to all courses. This website covers the following:

1. University Grading Policies
2. Academic Integrity Policy
3. How to request learning accommodations
4. Faculty and course evaluations
5. Student expectations in class
6. Discussion board policy
7. Email communications
8. Religious holidays
9. Counseling & student health
10. How to access services for student success

Please see the following URL for this information:

**Complaints**
Should you have any complaints with your experience in this course please visit:
http://www.distancelearning.ufl.edu/student-complaints to submit a complaint.
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lecture Schedule</th>
<th>Activities</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan 7</td>
<td>Introduction /Calculations</td>
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<td>Jan. 11</td>
<td>Calculations</td>
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<td>2</td>
<td>Jan. 14</td>
<td>Calculations</td>
<td>Discussion groups meet</td>
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<td></td>
<td>Jan. 18</td>
<td>Calculations</td>
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<tr>
<td>3</td>
<td>Jan. 21</td>
<td>ML King Jr Day Calculations</td>
<td>Discussion groups meet</td>
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<td>Jan. 25</td>
<td>Calculations</td>
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<tr>
<td>4</td>
<td>Jan. 28</td>
<td>Calculations</td>
<td>Discussion groups meet</td>
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<td></td>
<td>Feb. 1</td>
<td>Calculations</td>
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<tr>
<td>5</td>
<td>Feb. 4</td>
<td>Parenteral Drug Delivery</td>
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<td>6</td>
<td>Feb. 11</td>
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<td>Exam I - Feb 14th – Calculations</td>
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<td>7</td>
<td>Feb. 18</td>
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<td>Feb. 22</td>
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<td>8</td>
<td>Feb. 25</td>
<td>Parenteral Drug Delivery</td>
<td>Aseptic Techniques in Skill Lab (ICS)</td>
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<td>Mar. 1</td>
<td>Parenteral Drug Delivery</td>
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<td>Mar. 5-9</td>
<td>SPRING BREAK</td>
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<td>10</td>
<td>Mar. 11</td>
<td>Ophthalmic Drug Delivery</td>
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<td>11</td>
<td>Mar. 18</td>
<td>Respiratory Drug Delivery</td>
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<td>Mar. 22</td>
<td>Respiratory Drug Delivery</td>
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<td>Mar. 25</td>
<td>Respiratory Drug Delivery</td>
<td>Exam II - March 25th– Parenterals/Ophthalmics</td>
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<td></td>
<td>Mar. 29</td>
<td>Respiratory Drug Delivery / Rectal</td>
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<td>13</td>
<td>Apr. 1</td>
<td>Rectal Drug Delivery</td>
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<td>Apr. 8</td>
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<td>17</td>
<td>Final Exam – Wednesday May 1st, 9-10:30 – Respiratory to Advanced</td>
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