PHM 390N: Integrated Basic and Applied Pharmacokinetics

Tuesday and Thursday 9:30 – 10:50 a.m.
Room: PHR 3.106
Spring 2019 – Unique #59210

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Course Teaching Assistants (TA’s):

AAA:

Description:
This course has been completely redesigned for this year, with just under half the class time being ‘flipped’ to allow you time in-class to work on various problem sets, etc., (versus historically where the problem sets and homework were done outside of class…) and rolling the separate lab course into the lecture course so they are more coordinated. These course changes are being implemented now such that they can be incorporated into the final catalog course change for 2021.
The course is designed to introduce students to the primary biological processes (absorption, distribution, metabolism, and excretion) that govern the fate of a drug after its administration, and to explain those processes in mathematical terms and then understand the clinical implications of those mathematical determinations. In addition to focusing on what the body does to a drug (pharmacokinetics), it will also provide a brief introduction as to what the drug does to the body (pharmacodynamics). This course will focus on concepts and appropriate use of pharmacokinetic tools (equations, calculations) to develop individualized drug dosage regimens and determine pharmacokinetic parameters. Emphasis will also be placed on understanding how to apply these basic principles to patient-treatment scenarios. This course will focus on specific agents where drug level monitoring is still used for therapeutic monitoring and applying principles to predict how factors (e.g., disease, organ function, genetics, diet, medications) may influence the biological processes that impact the pharmacokinetics of a drug. As identified in the course title, this class will integrate basic and clinically applied pharmacokinetics by including lectures from pharmaceutics (the theory of pharmacokinetics) and clinical (applying kinetics to the patient care setting and drug treatment). In addition, half the course will include ‘In Class Activities’, which will include various types of problem sets. Homework will also be done during the first class period and then reviewed during the second class period. This ‘flipped classroom’ will allow you actual in-class practice time, such that we can make sure you are able to complete the exercises. Also, I have incorporated the lab course into the lecture course and those as listed on the schedule as ‘Clinical Lab Case’.

Please note that this course carries the University’s Quantitative Reasoning flag. This flag course is designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will encounter in life. You can expect a substantial portion of your grade to come from your use of quantitative skills to analyze pharmacokinetic problems.

Required Materials
1. Foundations in Pharmacokinetics – by Adam Persky. This textbook is available for download from Canvas (https://utexas.instructure.com). You can find support in using Canvas at the ITS Help Desk at 475-9400, Monday-Friday 8AM – 6PM.

2. Lecture and reference materials will be available and posted throughout the duration of the course on Canvas website

3. You must have a personal laptop available during lecture. Quizzes will be taken on Canvas so you must have your own PC in class. Other in-class exercises will also require a laptop

4. Texas Instruments TI 36X-Pro calculator. This is the same calculator that was required for PHR 342C. You must have this specific calculator for admittance to each exam. No other calculator will be allowed.

Classroom Conduct/Seating
Due to the ‘in-class activities’ scheduled for the second half of the class period (flipped classroom) including such things as problem sets, applications, homework and clinical lab cases (plus 5 in-class quizzes, which are set in the schedule), attendance is required. Attendance will
be taken at 9:30 am (at the bell) of each class, by the course TA’s using a seating chart. If you are not in your seat when they take attendance, you are **ABSSENT** (if you arrive to class 5 minutes late and attendance has already been taken you are tardy and that counts as an absence). **Each student is allowed to be absent/tardy 2 times during the semester without penalty.** Any missed/tardy class for ANY reason will be counted (ie., illness (any), car didn’t start, alarm didn’t go off, traffic, couldn’t find my shoes, doctor’s appointment, was hit by a meteor, got drunk last night, studying for an exam, abducted by an alien spaceship, attended a meeting/College event, religious day, mission trip, sister/brother’s wedding, trip to Vegas, or I just couldn’t take it any more…, etc.). Each additional absence will result in a reduction in your final grade of 0.25%. **NOTE:** If you have a formal physician notice of medical need (surgery, hospitalization, death in family, etc.,) those will be excused. If you do miss a class, **you are responsible for the missed lecture material, etc., and will also need to get together with your ‘activities’ group to get any of the ‘problem set’ you missed (that will be your responsibility not that of the faculty or TA’s).**

A seating chart will be used, so you must sit in the SAME SEAT for each class (so the seat you take the first day of class will be YOUR seat, so choose wisely). Also the seat you choose will also establish who your ‘activities’ partner(s) will be (unless you decide to work alone). Once your ‘In-Class Activities’ group is formed, that will then be set for the whole semester, so again, choose your seating and who sits next to you carefully. By the third day of class, we will formally start to take attendance.

**Timeline:**
Please refer to the color-coded timeline provided. It outlines the entire course, shows all the lectures (and lecturers), the specific dates for homework, and dates for the quizzes and exams. It also indicates the ‘in-class activities’ time periods.

**Lectures: (45 min)**
The first period of the class (9:30 am – 10:15 am), has been set aside for most of the course (except for quiz days and homework days) as the lecture period. During these sessions you will get both the theory lectures (TL) related to kinetics and the clinical application lectures (CL). Note the abbreviations and color coding on the timeline. Also, note that faculty may provide you with pre-class reading materials, equations sheets, etc. So, please pay attend to canvas for messages from faculty.

**In-Class Activities (35 minutes)**
The second classroom period of the class (10:15 am – 10:50 am) has been set aside for ‘in-class activities. Throughout the semester there will be sessions built into the one hour and 20 min., class time for students, individually or in groups of 2 or 3, to actively work on various types if problem sets, homework review, quiz review and the clinical lab cases (the lab course is integrated here - Note: the **clinical lab cases** will be graded separately for your 1 credit hour lab grade). This will provide a controlled setting where faculty and TA’s can oversee and interact with the student groups. Faculty & TA’s will have posted office hours where they can be contacted for further assistance.
Problem Sets: (Problem Sets/Applications)
There will be various types of problem sets, to be worked on during the semester in class. These are designed to give you experience and practice, under supervision, to prepare you for the quizzes, and then for the exams. These are provided for your benefit. Students can work individually or in teams of 2/3 to complete all the in-class activities. These problem sets will be done in the 2nd period of the class (35 min). This will give your group time to work on these activities while under supervision, and have people available to answer questions. In the event your group does not get through all the designated activities during the second class period, you will be encouraged to finish up the work on your own or in your group outside of class. NOTE: For homework specifically, 45 minutes at the beginning of the class will be allowed to complete the homework, and the remainder of the class will be used by Matt and the TA’s to review the homework and provide the correct answers. The Problem Sets and Homework are not graded, but are provided for you to become proficient in doing the calculations, etc., (prepares you for the quizzes and exams, which are graded).

Clinical Lab Cases (Represents the 1-credit hour lab course – graded separately)
After each of the ‘clinical’ lectures, there will be a clinical lab case provided for your 2nd period In-Class Activity. There are 10 Clinical Lab Cases (each lab worth 10 points) that are being integrated and incorporated into the Lecture Course to ensure a smoother transition between the two courses. The clinical lab cases will provided on Canvas for each specific lab and will be worked on in your ‘group’ during the specified 2nd period time. At the end of each clinical case lab period, each student Must upload their answers to Canvas for grading (If there are no answers uploaded for any student, they will receive a 0). Each member of your group MUST submit their own answers (they may be the same or different answers than your partners). These grades will then become your 1 credit hour lab grade (which is still designated as a separate class). These grades will be A, B, C, D, F (not +/-). Note: There are no ‘make up’ lab cases, so please be careful which classes you miss. The clinical lab cases dates are listed in advance, so plan any activities that would make you miss a class carefully. If by chance you do miss a lab, you would still have the ability to jump on Canvas during the ‘lab’ time and answer the case and upload your answers. The clinical lab TA’s who will be grading your labs will be in the class room during the lab to monitor your progress and answer questions that may arise. Note: In the ‘Lab Course’ syllabus, you will find more information related to this course and TA office hours, etc.

Quizzes
There will be 5 quizzes during the semester. Each quiz will be worth 20 points. The quizzes will total 100 points for the semester and count toward 25% of your final grade. As with the in-class activities, all students will be given 45 min to complete the quiz, then the remainder of the class time will be used to review the quiz. All quiz dates are pre-set into the course schedule, so everyone will know exactly when the quizzes are and should plan accordingly. There should be no excuse for missing a quiz. There are No make-ups for missed quizzes. If a quiz is missed (for whatever reason), instead of getting a 0 on the missed quiz, the student will get the lowest grade achieved on the other quizzes taken, then applying that grade to the missed quiz.
Class Recordings
Video recordings of all lectures will be made. The clinical faculty will either present their lectures live or over camera from San Antonio. These recordings will also be made available by the University of Texas (http://registrar.utexas.edu/students/records/ferpa).

Please remember that this service is offered to supplement (not replace) lecture attendance. An issue might arise that could prevent material from being made available in a timely fashion or at all. Although every effort will be taken to keep the system running, UT does not guarantee the availability of these recordings. Attending class is the only way to insure your viewing of the professor's presentations.

Assessment: Examinations
There will be two, 3-hour evening examinations and a final course materials/comprehensive 3-hour final exam. All exams will be worth 100 points. Students must take all 3 exams.

Students must arrive on time for examinations. All instructions and corrections will be made at the beginning of the examination period and will not be repeated. Students arriving after a test has been handed in by another student will not be allowed to sit for the examination and may receive a score of zero for the exam.

The only items allowed during examinations are pencils and a Texas Instruments TI 36X calculator. Books, bags, and coats will need to be left in a location designated by the faculty proctor. No student may possess a cell phone, digital music player or any other type of electronic device during the exam. Students caught with any of these devices will be reported to the Dean of Students and may receive a score of zero on that exam.

Absences on any test day must be approved by the Course Director prior to the scheduled test. Requests must be in emailed to Prof. Koeller. If permission is granted by telephone at the last minute (e.g. due to illness), it is the student's responsibility to confirm the request by email as soon as possible. For very special College activities, alternative date/time for the exam will be set by the Course Director. An unexcused absence from an exam may result in a grade of zero for that exam.

All students must take the final examination. The final will consist of materials covered since the second exam and cumulative materials from the rest of the semester.

A designated person for the course will retain all examinations during the semester. Any student who removes an examination, equation sheets or scratch paper from the testing room may receive a score of 0 for the exam. Students will be provided an opportunity to view their exams after the test (see below).

Answers to multiple choice questions are based on the answers placed on the scantron sheets and not answers written on the test papers. All tests are taken to the Scanning Office for grading. After the tests have been graded and an item analysis is performed, questions may be discarded at the discretion of the Course Coordinator. Only after that time, may the students request a challenge to a specific question. All challenges must be sent to the instructor who wrote the
question and the course director must be CC’ed. Any changes to the exam will be done by the
course director. A 15 min. period at the beginning of a class (after the exam) will be used for
students to review their exams. Exams will be returned at the end of that review. No pictures,
etc., can be taken of the exam.

**Final Exam Re-Examination Policy**
The re-examination policy for this course will follow the General Information Catalog (GIC)
policy for the University, which reads as follows: “Only a student who has a grade average of at
least a C on all class work and lab work submitted before the final exam may request a
temporary delay of the final course grade because he or she failed the final examination, which
is the examination given during the final exam period as printed in the official examination
schedule.”

"If the petition is denied by the instructor, the student’s final course grade will remain as
originally determined. If the instructor grants the petition, the grade on the reexamination will
be substituted for the grade on the original exam in determining the student’s final course grade,
provided the student earns at least a C on the reexamination. If the grade on the reexamination
is less than a C, a final course grade of F must be recorded."

If a re-examination of the final must be given, the student must meet with the course director and
take the exam prior to the start of the following semester.

**Calculation of Final Scores:**

- **Quizzes**: 25%
- **Examination #1**: 25%
- **Examination #2**: 25%
- **Comprehensive Final**: 25%

100%

**Posting Class Scores**
Following each examination, the scores will be posted on the password-protected course Canvas
website.

**Grading Policy:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93 - 100%</td>
</tr>
<tr>
<td>A-</td>
<td>90 - 92%</td>
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<tr>
<td>B+</td>
<td>87 - 89%</td>
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<tr>
<td>B</td>
<td>83 - 86%</td>
</tr>
<tr>
<td>B-</td>
<td>80 - 82%</td>
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<tr>
<td>C+</td>
<td>77 - 79%</td>
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<tr>
<td>C</td>
<td>73 - 76%</td>
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<tr>
<td>C-</td>
<td>70 - 72%</td>
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<tr>
<td>D+</td>
<td>67 - 69%</td>
</tr>
<tr>
<td>D</td>
<td>63 - 66%</td>
</tr>
<tr>
<td>D-</td>
<td>60 - 62%</td>
</tr>
<tr>
<td>F</td>
<td>Below 60%</td>
</tr>
</tbody>
</table>

A curve may be used in assigning grades in this class at the discretion of the Course Director.
No test scores are "dropped" and no "re-takes" will be offered for poor performance. NOTE:
once the final grade is determined, there will be NO Rounding of the final numeric grade to
obtain a higher letter grade (eg., an 89.89 is a B+, and will not be rounded to 90 for an A-).
University of Texas Honor Code
The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Students with Disabilities
Students with disabilities will need to request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259 (voice), 232-2937 (video phone) or http://www.utexas.edu/diversity/ddce/ssd/. Once you have your accommodation letter or if you already have your letter, please provide it to the course director as soon as possible, so adjustments to exams can be planned.

Use of E-Mail for Official Correspondence to Students
I will use e-mail for official course announcements. You are required to check the e-mail account officially listed with the University on a regular basis, but no less than every day during the semester. You are responsible to keep the university informed about changes to your e-mail address.

Religious Holy Days
By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. You will be responsible for any ‘activities’ missed, but for a quiz or an exam, the course coordinator will make alternative arrangements.

Behavior Concerns Advice Line (BCAL)
If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual’s behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit www.utexas.edu/safety/bcal/

Emergency Evacuation Policy
- Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation: Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building.

- If you require assistance to evacuate, inform me in writing during the first week of class. In the event of an evacuation, follow my instructions or those of class instructors. Do not re-enter a building unless you’re given instructions by the Austin Fire Department, the UT Police Department, or the Fire Prevention Services office.