

APPROVED

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The University Of Toledo

JAN 16 2013

COLLEGE OF
GRADUATE STUDIES

New Graduate Course Proposal

* denotes required fields

1. College*:

Department*:

2. Contact Person*: Phone: (xxx - xxxx) Email:

3. Alpha/Numeric Code (Subject area - number)*: -

4. Proposed title*:
Proposed effective term*: (e.g. 201140 for 2011 Fall)

5. Is the course cross-listed with another academic unit? Yes No

Approval of other academic unit (signature and title)

Is the course offered at more than one level? Yes No

If yes, an undergraduate course proposal form must also be submitted. If the undergraduate course is new, complete the New Undergraduate Course Proposal; if the undergraduate course is existing, submit an Undergraduate Course Modification Proposal.

6. Credit hours*: Fixed: or Variable:

to

7. Delivery Mode:

	Primary*	Secondary	Tertiary
a. Activity Type *	<input type="text" value="Lecture"/>	<input type="text" value="Independent Study"/>	<input type="text" value="Web Assisted Instru"/>
b. Minimum Credit Hours *	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>
Maximum Credit Hours *	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>
c. Weekly Contact	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>

Hours *

8.

Terms offered: Fall Spring Summer

Years offered: Every Year Alternate Years

9. Are students permitted to register for more than one section during a term? No Yes

May the courses be repeated for credit? No Yes Maximum Hours

10. Grading System*: Normal Grading (A-F, PS/NC, PR, I)
 Passing Grade/No Credit (A-C, NC)
 Credit/No Credit
 Grade Only (A-F, PR, I)
 Audit Only
 No Grade

11. Prerequisites (must be taken **before**): i.e. C or higher in (BIOE 4500 or BIOE 5500) and C or higher in MATH 4200

PIN (Permission From Instructor) PDP (Permission From Department)

Co-requisites (must be taken **together**):

12.

Catalog Description* (75 words Maximum)

An advanced discussion of the theory and practice of using kinetic principles to model the time course of drugs and toxic chemicals in the body and in the environment. The student should understand the relationship between chemical time courses and outcomes and application to risk assessment. Additionally, students will gain hands-on practice using kinetic analysis methods and software.

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 No Grade

11. Prerequisites (must be taken **before**): i.e. C or higher in (BIOE 4500 or BIOE 5500) and C or higher in MATH 4200

PHCL-4760 or PHCL-5760 with a minimum grade of B-

PIN (Permission From Instructor)

PDP (Permission From Department)

Co-requisites (must be taken **together**):

PHCL-5760, if the pre-requisite course has not been completed


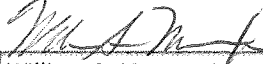
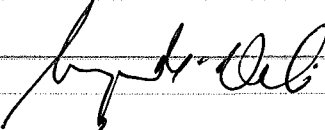


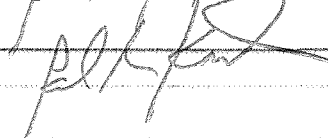

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13. Attach a syllabus and an electronic copy of a complete outline of the major topics covered. Click [here](#) for template.

File Type	View File
Syllabus	View

Course Approval:

Department Curriculum Authority:	 Ezdihar Hassoun	Date 2012/11/07
Department Chairperson:	 William S. Messer, Jr.	Date 2012/11/07
College Curriculum Authority or Chair:	 Surya Nauli	Date 2012/12/04
College Dean:	 Wayne Hoss	Date 2012/12/04
Graduate Council:		Date 2-5-2013
Dean of Graduate Studies:		Date 2-5-2013
Office of the Provost :		Date

Administrative Use Only

Effective Date:	<input type="text"/>  (YYYY/MM/DD)
CIP Code:	<input type="text"/>
Subsidy Taxonomy:	<input type="text"/>
Program Code:	<input type="text"/>
Instructional Level:	<input type="text"/>

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The following requirements will be differentiated for courses that are co-listed for Masters (5000 or 6000) and Ph.D. (7000 or 8000) levels:

Masters students will need to complete successfully all course requirements as indicated in the syllabus. They should be able to achieve and demonstrate comprehensive understanding of course topics through class discussion, assignments, quizzes and exams.

To complete the course requirements, Ph.D. students will need to demonstrate an extended expertise in the course topics. They also should demonstrate independent scholarly activity and creativity to the class instructor. The ability of the Ph.D. level students to synthesize scientific data/information, develop original ideas/hypotheses and Formulate independent research studies/proposals will be evaluated through additional assignments and readings, or by demonstrating leadership roles in class discussion or other collaborative settings."

Syllabus

Current Topics in Pharmacokinetics/Toxicokinetics

PHCL 5460/7460

1 Credit Hour

Instructor: Caren L. Steinmiller, Ph.D.
Office/Office Hours: HEB 280B; Tuesdays and Thursdays from 9-11am
Phone: 419.383.1912
Email: Caren.Steinmiller@utoledo.edu

Class Time and Location: *to be arranged*

Primary Communication Method: Lecture slides will be available on the course website. If you have any questions for me, please email or call my office. Homework assignments will be provided in class as handouts and also available on the course website. Articles for review will have links posted on course website.

Course Description: An advanced discussion of the theory and practice of using kinetic principles to model the time course of drugs and toxic chemicals in the body and in the environment. The student should understand the relationship between chemical time courses and outcomes and application to risk assessment. Additionally, students will gain hands-on practice using kinetic analysis methods and software.

Course Pre-/Co-requisites: Acceptance into the graduate program in the College of Pharmacy & Pharmaceutical Sciences, or instructor permission. Students should have completed/or currently be enrolled in PHCL 4760/5760. Students should be familiar with and able to use the following math concepts:

1. Logarithms and exponents in base 10 and base e
2. Plotting data on normal, semilog, and log-log axes
3. Linear regression analysis (covered in class as needed)
4. Working with units in calculations

Course Objectives: This course is expected to enable students to:

1. Understand pharmacokinetic/toxicokinetic mathematical models
2. Apply appropriate models to predict body levels after exposure, and analyze measured human/animal agent concentrations
3. Appreciate kinetic, physiologic, and physicochemical considerations involved in the effects of toxic agents and drugs

Required/Recommended Texts: There is no required textbook for this course, as all necessary information will be provided in the course materials. Textbooks that may be helpful in finding additional information will be listed in the course notes.

A software program capable of graphing experimental data and performing linear regression analysis (such as Excel, Kaledagraph, Deltagraph, or MathCAD) will be helpful on homework assignments. Computers are available with Excel on Main Campus in the Pharmacy Student Resource Center (WO

1269) or on the Health Science Campus in the Danna S. Fitzsimmons Student Resource Lounge (HEB 150A).

You can find graph paper online, instead of purchasing it, at the following website:

<http://incompetech.com/graphpaper/>

Please print graph paper checking "black" for grid color. Other grid colors will not be accepted.

Program Competencies: Completion of this course should assist the student in the following Learning Outcomes:

- 1 – Apply principles of physical, biological, and administrative sciences to successfully solve problems in the pharmaceutical sciences.
 - (a) Interpret the results of studies as presented in reviews and in the primary literature
 - (b) Apply the concepts of controlled experimentation and evidence-based practice
 - (d) Be able to begin a process of critical evaluation of technical issues related to the pharmaceutical sciences
- 3 – Work cooperatively as part of both disciplinary and interdisciplinary teams
- 4 – Understand the basic principles of chemistry, life science, medicinal chemistry, pharmacology and biochemistry as they apply to the activity of drugs, biological, and toxins
- 6 – Apply computer technology to the collection, processing, and analysis of data appropriate to a student's specialty
- 8 – Develop skills to carry out duties in accordance with accepted legal, ethical, social, economic, and professional practices and interact in a professional manner with managers, colleagues, and subordinates
- 9 – Develop the skills necessary to maintain professional competence and incorporate new developments and technologies into practice

Course Policies:

General- Students are expected to attend lectures and participate in class discussions. Please refer to the University of Toledo Missed Class Policy for accepted absences.
http://www.utoledo.edu/facsenate/missed_class_policy.html

Calculator- Each student must have their own scientific calculator capable of taking logarithms and exponentials. Any calculator with LOG, 10^x , LN, e^x , and y^x functions should be sufficient. Students are responsible for knowing how to use their own calculators.

Exams- All exams will be open notes. Each student is responsible for bringing their own calculator and ensuring it functions properly during exams. There will be no sharing of calculators or notes. The use of laptops and cell phones during exams is not permitted.

Make-Up Exams- Unexcused absences resulting in a missed exam will result in a grade of zero. Make-up exams will only be administered for *excused* absences. Prior approval for an absence from an examination can only be obtained from **acknowledged direct contact** with Dr. Steinmiller. Post-exam approval for an excused absence from an exam must be sought out immediately upon the student's arrival back to school. Appropriate documentation of why the absence occurred will be required. Make-up exams will be administered either during Finals week or as soon as possible as determined by Dr. Steinmiller.

1269) or on the Health Science Campus in the Danna S. Fitzsimmons Student Resource Lounge (HEB 150A).

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Homework- Homework will be assigned about once per week. All homework will be collected and leniently graded. Answer keys will be posted after the homework is graded. Unless a documented excuse is provided, late homework will be penalized 25% if handed in before answers are posted, or 75% after answers have been posted. Homework can be done in groups, but everyone must hand in their own work (photocopies are not accepted). *Showing your work is actually worth more points than getting the correct answer*, so be sure to show all work, especially formulas.

Academic Dishonesty Statement- Academic dishonesty **will not** be tolerated, and any student caught in this action will be dealt with according to the Policy Statement on Academic Dishonesty found in the University of Toledo General Catalog. The grade for this course will be reduced to an "F". In addition, the student may be dismissed from the BSPS or graduate program. Any form of work that is not your own is considered academic dishonesty.

Students with Disabilities-

1. The University will make reasonable academic accommodations for students with documented disabilities. Students should contact the Office of Accessibility (Rocket Hall 1820; 419.530.4981; officeofaccessibility@utoledo.edu) as soon as possible for more information and/or to initiate the process for accessing academic accommodations.
2. If you are registered with the Office of Accessibility, I have received notification regarding your academic accommodations. Please see me as soon as possible to discuss your accommodations and how I may be of assistance to you throughout the course.
3. The University of Toledo abides by the Americans with Disabilities Act (equal and timely access) and Section 504 of the Rehabilitation Act of 1973 (non-discrimination on the basis of disability). If you have a disability and are in need of academic accommodations but have not yet registered with the Office of Accessibility (OA) (Rocket Hall 1820; 419.530.4981; officeofaccessibility@utoledo.edu) please contact the office as soon as possible for more information and/or to initiate the process for accessing academic accommodations. I also encourage students with disabilities receiving accommodations through OA to discuss these with me, after class or during my office hours, so that I may be better informed on how to assist you during the semester.
4. Any student with a documented disability receiving academic accommodations through the Office of Accessibility is requested to speak with me as soon as possible. All discussions will remain confidential and are intended to assist me with ensuring your accommodations are appropriately implemented throughout the course.
5. Students with disabilities who believe they may need academic accommodations are encouraged to speak with me after class and will need to contact the Office of Accessibility (Rocket Hall 1820; 419.530.4981; officeofaccessibility@utoledo.edu) as soon as possible for more information and/or to initiate the process for accessing academic accommodations.

Drop/Withdrawal- The petition for withdrawal must be received in the Office of the Registrar, Rocket Hall, Room 1100, by the deadline date either: in person, fax, or mail. When mailing, the envelope must be postmarked by the deadline date. For the fall term, it must be filed between the 15th calendar day of the term through Friday of calendar week 10.

Course Grade: The course grade will be comprised of homework assignments, exams, and class discussions of review articles. Attendance is required and will make up approximately 20% of the final course grade.

Grading Scale: Your overall average will be rounded to the nearest whole number and subjected to the grading scale:

92-100 A
90-91 A-
88-89 B+
82-87 B
80-81 B-
78-79 C+
72-77 C
70-71 C-
68-69 D+
62-67 D
60-61 D-

Important

Course Dates: list important dates for the term, including first day of class, exam dates, project due dates, and holidays.

Material to be Covered: Differences in linear and non-linear kinetics, advanced topics in pharmacokinetics/toxicokinetics (metabolite kinetics, allometric scaling), physiologically based pharmacokinetic/toxicokinetic models, application of pharmacokinetic software,

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