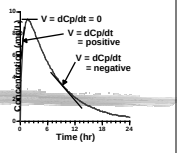
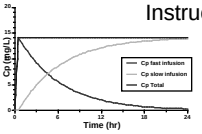
PHAR 7633
Pharmacokinetics -
Biopharmaceutics



University of Oklahoma
College of Pharmacy
Instructor: David Bourne, Ph.D.



I. Introduction to Course

- Staff
- Grading
- Course Outline
- Textbook
- Other References, Journals
- Software

A. Staff

- Lecturer: David Bourne, Ph.D.
  Office: CPB 303
  email: david-bourne@ouhsc.edu
- Course WebSite
  http://www.boomer.org/c/p2/
- Lectures: 11:10 a.m. - 12:00 noon
  Monday, Wednesday and Friday
  in (CPB 103)

B. Grading

Mid Semester Exam(1)	25 %
Mid Semester Exam(2)	25 %
Project	
Preliminary Report (I)	5 %
Group Report (G)	5 %
Final Report (I)	10 %
Final Exam	30 %
TOTAL	100 %

B. Grading

- Calculators/Computers Rules/Guidelines
- Homework - practice - not graded
- Project
  - Preliminary Report - Individual
  - Group Report - Grouped by project
  - Final Report - Individual
- Quizzes in class - TF and/or Multiple Choice - not graded

B. Grading

- Total Score = 100%
- Grade Assignment
  - 100 - 90 = A
  - 89 - 80 = B
  - 79 - 70 = C
  - 69 - 60 = D

C. Course - Objectives

- Student will be able:
  - Develop safe dosing regimen
    - Recognise required model
    - Determine appropriate parameter values
  - Evaluate drug dosage form performance
    - Assess bioequivalence studies
  - Determine pharmacokinetic parameter values
    - Correctly use graphical methods
    - Correctly use non-linear regression analysis

C. Coursework - PHAR7632

- Introduction
- Mathematical Material
- Pharmaceutical Analysis
- Pharmacokinetic Intro
- One Compartment I.V. Bolus, Plasma
- Analysis of Urine Data

C. Coursework (contd.)

- Intravenous Infusion
- Routes of Drug Administration
- Pharmacokinetic of Oral Administration
- Bioavailability Calculations, F
- Bioavailability Studies

C. Coursework (contd.)

- Routes of Drug Administration
- Pharmacokinetic of Oral Administration
- Bioavailability Calculations, F
- Bioavailability Studies

Method of residuals, W-N method

Fitting simultaneous data sets, Optimal sampling

C. Coursework (contd.)

- Routes of Drug Administration
- Pharmacokinetic of Oral Administration
- Bioavailability Calculations, F
- Bioavailability Studies

C. Coursework (contd.)

- Factors affecting Oral Absorption
  - Physiological
  - Physico-chemical
  - Formulation
- Multiple Dose I.V. Bolus
- Multiple Oral Dose
- Routes of Excretion

C. Coursework (contd.)

- Metabolism
- Drug Distribution
- Multicompartment PK Models, Selection
- Non-linear PK Models
- More complex PK Models
- PBPK Models, PD Models
- Clinical Application of PK

D. Textbook

- Bourne, **Mathematical Modeling of Pharmacokinetic Data**
- Old Course Syllabus (PHAR 4634) http://boomer.org/c/p1/
- Boomer Manual
- Other online resources, e-mail list (see http://www.boomer.org/pkin/

E.-F. Other References

- Books, Journals
- Instructor
  During class - ask questions
  After class, Office (CPB 303)
  eMail (david-bourne@uokhsc.edu)
  WWW resources
  http://www.boomer.org/c/p2/

G. Software

- Boomer http://www.boomer.org/
- Other software http://www.boomer.org/pkin/soft.html
- SAAM II
- WinNONLIN Professional
- ADAPT II
- NONMEM