

MI101-W: Introduction to Pharmacokinetics and Pharmacodynamics (3 CR)

MI101 is designed to provide a thorough introduction to fundamental concepts in pharmacokinetics and pharmacodynamics through lectures and problem-solving lab sessions emphasizing physiologic concepts and real-world applications. Content in this course is consistent with expectations for an introductory pharmacokinetics course in a professional Pharmacy curriculum. Participants may apply the 3 credit hours from this course to the Metrum Institute Certificate Program in Pharmacometrics.

Instructors

Kevin R. Sweeney, Ph.D, Pharmacometrician, Pfizer
Carol Cronenberger, Ph.D, Clinical Pharmacologist, Pfizer
Marc R. Gastonguay, Ph.D, Metrum Institute
and Metrum Institute scientific staff

Prerequisites

None

Computer Hardware/Software

This course requires a Windows computer with a web browser. Students will be given access to a Metrum Institute web-application server for hands-on examples, including all required software. Details on how to access the program are provided at the start of the course.

Fall 2011 Schedule

TBD

Location

Live webcast

Fees

Regular registration: \$3000 USD / Academic & government registration: \$1500 USD

Course Outline

1. Introduction & Kinetics of Drug Absorption
2. Drug Distribution
3. Clearance: Renal, Hepatic
4. Bioavailability/Bioequivalence, NCA
5. Compartmental PK Models
6. Drug Input and Dosing
7. Nonlinear Pharmacokinetics
8. Population Pharmacokinetics
9. Pharmacodynamics
10. Drug-Drug and Other Interactions
11. Clinical Pharmacokinetics: Digoxin and other Therapeutic Drug Monitoring Examples
12. Interpretation of PK Data (PK parameter effects on exposure); PK in Drug Development
13. Make up (if needed)