PHARMACEUTICS (PCEU)

PCEU 507. Pharmaceutics and Biopharmaceutics I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Designed to describe
the physico-chemical and biopharmaceutical principles fundamental
to the development of pharmaceutical dosage forms. Topics will
include pharmaceutical calculations, solid-state properties, solubility,
partitioning, solution properties, disperse systems, micromeritics,
diffusion, dissolution and release rates, drug and dosage form stability
and degradation, pharmaceutical manufacture, and compounding.

PCEU 508. Pharmacokinetics. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: PCEU 507.
Corequisite: PCEU 509. Major topics include the mathematical and
physiological principles of pharmacokinetics related to the development
and use of pharmaceutical dosage forms. Discussions will include
compartmental modeling, physiological concepts of pharmacokinetics,
and clearance and absorption concepts. Also includes material related to
statistics.

PCEU 509. Pharmaceutics and Biopharmaceutics II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: PCEU 507.
Designed to describe the biopharmaceutical principles fundamental
to the development of pharmaceutical dosage forms, including
parenteral products, solutions, disperse systems, semisolids, solids
and novel drug delivery systems. The formulation, manufacture, control,
biotherapeutics and relevant patient-pharmacist interactions of
the major dosage forms will be addressed and presented by route of
administration.

PCEU 604. Molecular Pharmaceutics. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: permission
of course coordinator. The student’s basic biochemistry and pharmacy
education will be expanded with emerging molecular concepts in
enzyme and transporter structure and function, roles in drug disposition,
pharmacogenomics, biochemistry, molecular biology, and experimental
techniques.

PCEU 612. Advanced Physical Pharmacy and Biopharmaceutics. 3-5
Hours.
Semester course; 3 credits. Phase equilibria and phase transfer kinetics
related to biopharmaceutics will be covered. The relationship between
physicochemical properties of a drug dosage form and drug absorption,
along with the correlation between in vitro tests used to evaluate
dosage forms an in vitro measures of drug absorption will be covered.
The course assumes that the student has a basic understanding of
pharmacokinetics, physical chemistry and statistics.

PCEU 614. Research Techniques. 1-4 Hours.
Semester course; variable hours. Variable credit. Credit will be given
on the basis of 1 credit per 45 hours of laboratory time. Prerequisite:
approval of research adviser. Provides new graduate student with the
laboratory skills necessary to perform research in the chosen discipline.
The training time required will depend upon the discipline. Graded as
pass/fail. Crosslisted as: MEDC 614/PHAR 614.

PCEU 615. Applied Pharmacokinetics. 2.5 Hours.
Semester course; 2.5 lecture hours. 2.5 credits. Extends the concepts of
pharmacokinetics as applied to dosage regimen design, pharmacokinetic
variability, drug interactions and statistical strategies for individualization
of drug therapy. Lectures and conferences take place throughout the
semester.

PCEU 621. Advanced Pharmaceutics and Drug Disposition. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Study at the advanced
level of the relationships between the physiochemical properties of a
drug and dosage form and the absorption, distribution, elimination and
pharmacological effects of the drug. Current theory and methodology
involved in solving problems at the research level are emphasized.

PCEU 622. Clinical Pharmacokinetics. 3 Hours.
Semester course; 2 lecture and 2 laboratory hours. 3 credits. The
application of current pharmacokinetic theory to clinical problems
involved in optimizing and monitoring drug use in patients. Particular
attention is given to adjustment of drug dosage in individual patients
with impaired drug elimination due to renal and hepatic dysfunction.
(Nontraditional program).

PCEU 624. Advanced Pharmacokinetics. 3 Hours.
Semester course; 3 lecture hours. 3 credits. An advanced treatment of
the kinetics of drug absorption, distribution, and elimination utilizing
mathematical models, and digital computers for analysis of linear and
nonlinear biologic systems.

PCEU 625. Pharmaceutical Analysis. 4 Hours.
Semester course; 3 lecture and 1 laboratory hours. 4 credits. Theory and
practice of selected analytical techniques for the quantitative analysis
of drugs in body fluids and other matrices. Emphasis is on method
validation, and immunoassay methodologies. Laboratory sessions will
provide “hands on” experience with modern methods of drug analysis.

PCEU 626. Pharmaceutical Analysis Laboratory. 1 Hour.
1 lecture hour. 1 credit. Prerequisite: PHAR 625. A continuation of PHAR
625 with emphasis on providing advanced topics for analysis of drugs
and metabolites.

PCEU 690. Pharmaceutics Research Seminar. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Required of all graduate
students in pharmaceutics. Research Seminar.

PCEU 691. Special Topics in Pharmaceutics. 1-5 Hours.
Semester course; 1-5 lecture hours. 1-5 credits. Presentation of subject
matter is by lectures, tutorial studies, and/or library assignments in
selected areas of advanced study not available in other courses or as part
of the training in research.

PCEU 697. Directed Research in Pharmaceutics. 1-15 Hours.
Semester course; 1-15 credits. Research leading to the M.S., Pharm.D., or
Ph.D. degree.