

PHARMACOGENOMICS (PHARMGENOM)

PHARMGENOM 206 Laboratory Rotation (2-8 Units) Fall, Winter, Spring

Instructor(s): Staff

Prerequisite(s): Consent of instructor.

Restrictions: None

Activities: Lab science

A laboratory rotation course to familiarize new students in the Graduate Program in Pharmaceutical Sciences and Pharmacogenomics with various approaches to research in the pharmaceutical sciences and to gain exposure to potential dissertation research projects. .

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? Yes

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: Letter Grade

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD)

enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 219 Special Topics in Pharm Sci and Pharmacogenomics (3 Units) Fall, Winter, Spring

Instructor(s): Staff

Prerequisite(s): None.

Restrictions: First year graduate students, other graduate and professional students with permission of instructor.

Activities: Lecture, Independent Study

Each course offering will focus on the literature of a current important area of Pharmaceutical Sciences and Pharmacogenomics. Students will be expected to read assigned papers critically before class and to present and discuss papers in class. Students will also be expected to write and present a brief research proposal based upon their reading. Topics in Pharmaceutical Sciences and Pharmacogenomics will be covered in individual course offerings.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? Yes

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD)

enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 220 Student Research Seminar (1 Units) Fall, Winter, Spring

Instructor(s): Rada Savic

Prerequisite(s): None

Restrictions: None

Activities: Seminar

This seminar will provide graduate students with a forum in which to develop seminar and poster presentation skills; critically organize and critically review scientific data; and analyze and question oral scientific presentations.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD)

enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 223 Formal Seminar (1 Units) Fall, Winter, Spring

Instructor(s): Rada Savic

Prerequisite(s): None

Restrictions: None

Activities: Lecture

This course is designed to expose students to advancements in PSPG & prepare students for their own oral presentations- at retreats, in other classes, lab presentations, etc. The students will see first hand and close up how professionals in their field organize & present their research. While they won't have oral presentations for this class, they will have oral presentations throughout the year that don't go on record because they are not related to a class (such as our retreat).

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD)

enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 245A Basic Principles of Pharmaceutical Sciences (5 Units) Fall

Instructor(s): Sook Wah Yee

Prerequisite(s): Consent of instructor

Restrictions: None

Activities: Lecture, Seminar, Workshop

This is a five unit course. There are three major sections of the course, with evaluation on each section: Pharmacokinetic Principles; Metabolism and Transport; and Applied Pharmacokinetics. Overall for the quarter, the course will average three hours of didactic lectures and two 3-hour workshops/journal clubs. The course serves as a core course for graduate students in PSPG and is open to graduate students in all programs.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade, P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

PHARMGENOM 245B.1 Systems Pharmacology (2 Units) Winter

Instructor(s): Rada Savic

Prerequisite(s): No advanced training in mathematics or computational biology is required. Previous experience with computational methods for data analysis and visualization and a background in pharmacology would be beneficial but is not required.

Restrictions: None

Activities: Lecture, Workshop

An in-depth introduction to the use of systems approaches in pharmacology research. The course covers experimental and computational methods to understanding target identification and validation, drug biomarker discovery, drug repurposing drug development and identifying mechanisms of adverse drug reactions and multidrug resistance. Emphasis is placed on computational modeling and quantitative data analysis. Students will work in teams to analyze complex biological data sets.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade, P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

PHARMGENOM 245B.2 Systems Pharmacology (2 Units) Winter

Instructor(s): Sourav Bandyopadhyay

Prerequisite(s): No advanced training in mathematics or computational biology is required. Previous experience with computational methods for data analysis and visualization and a background in pharmacology would be beneficial but is not required.

Restrictions: None

Activities: Lecture, Workshop

A series of lectures and hands-on workshops designed to teach students core principles in systems biology and pharmacogenomics approaches. Example topics include precision medicine, drug development, drug repurposing, big data analysis and biomarker discovery. The purpose is to acquaint students with emerging topics in the field and provide a firm basis in computational analysis and programming through hand on, project oriented workshops.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade, P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

PHARMGENOM 245C Principles of Pharmacogenomics (3 Units) Spring

Instructor(s): Nadav Ahituv

Prerequisite(s): Membership in the Pharmaceutical Sciences pathway, the Pharmaceutical Sciences and Pharmacogenomics graduate program, or consent of the instructor.

Restrictions: None

Activities: Lecture, Project, Lab skills

The course will provide an introduction to the application of genetic and genomic methods to the study of drug response and the genetic basis for variation in that response.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade, P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

PHARMGENOM 250 Research (1-8 Units) Fall, Winter, Spring, Summer*Instructor(s):* Staff

Prerequisite(s): Consent of instructor.

Restrictions: NA

Activities: Project

In this course, students will work together with a primary research advisor to select a research question and design a project workplan that will be carried out by the student. Through this activity, the student will gain experience in research strategy, learn techniques associated with modern biomedical research and practice how to interpret results. At the conclusion of the course, the student will present on their progress.

School: Graduate Division**Department:** Pharmaceutical Science And Pharmacogenomics Prog**May the student choose the instructor for this course?** Yes**Does enrollment in this course require instructor approval?** No**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**Graduate Division course:** Yes**Is this a web-based online course?** No**Is this an Interprofessional Education (IPE) course?** No**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes**Repeat course for credit?** Yes**PHARMGENOM 260A Advanced Clinical Experience in Clin Pharm & Pharmacology (1-3 Units) Fall, Winter, Spring***Instructor(s):* Leslie Floren

Prerequisite(s): Graduate students must be a California board licensed pharmacist and must have completed all required immunization and Basic Life Support (BLS) training at the time of elective start.

Restrictions: Graduate students must have this course approved by their graduate program director in order for this to count towards the program's elective requirement. Students are expected to take this course in the Fall, Winter and Spring quarters, in that order.

Activities: Clinical, Project

Elective graduate level course for clinically-trained, licensed Pharm.D. graduate students enrolled in a UCSF graduate program. Experience conducted in inpatient or outpatient setting. The student will be engaged in clinic service 0.5 -1 day per week over three sequential terms starting with Fall. The course utilizes experiential-based learning and encourages independent and inter-professional learning through integrating clinical practice with clinical teaching and/or research activities.

School: Graduate Division**Department:** Pharmaceutical Science And Pharmacogenomics Prog**May the student choose the instructor for this course?** No**Does enrollment in this course require instructor approval?** Yes**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**Graduate Division course:** Yes**Is this a web-based online course?** No**Is this an Interprofessional Education (IPE) course?** No**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes**Repeat course for credit?** Yes

PHARMGENOM 260B Advanced Clinical Experience in Clin Pharm & Pharmacology (1-3 Units) Winter, Spring, Summer

Instructor(s): Leslie Floren

Prerequisite(s): Graduate students must be a CA board licensed pharmacist and must have completed all required immunization and Basic Life Support (BLS) training at the time of elective start.

Restrictions: Graduate students must have this course approved by their graduate program director in order for this to count towards the program's elective requirement. Students are expected to take this course in the Winter, Spring and Summer quarters, in that order.

Activities: Clinical, Project

An elective graduate level course for clinically-trained, licensed Pharm.D. graduate students enrolled in a UCSF graduate program. Experience conducted in inpatient or outpatient setting. The student will be engaged in clinic service 0.5 -1 day per week over three sequential terms starting with Winter. The course utilizes experiential-based learning and encourages independent and inter-professional learning through integrating clinical practice with clinical teaching and/or research activities.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 260C Advanced Clinical Experience in Clin Pharm & Pharmacology (1-3 Units) Fall, Spring, Summer

Instructor(s): Leslie Floren

Prerequisite(s): Graduate students must be a CA board licensed pharmacist and must have completed all required immunization and Basic Life Support (BLS) training at the time of elective start.

Restrictions: Graduate students must have this course approved by their graduate program director in order for this to count towards the program's elective requirement. Students are expected to take this course in the Spring, Summer and Fall quarters, in that order.

Activities: Clinical, Project

Elective graduate level course for clinically-trained, licensed Pharm.D. graduate students enrolled in a UCSF graduate program. Experience conducted in inpatient or outpatient setting. The student will be engaged in clinic service 0.5 -1 day per week over three sequential terms starting with Spring. The course utilizes experiential-based learning and encourages independent and inter-professional learning through integrating clinical practice with clinical teaching and/or research activities.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 260D Advanced Experience in Clin Pharm & Pharmacology (1-3 Units) Fall, Winter, Summer

Instructor(s): Leslie Floren

Prerequisite(s): Graduate students must be a California board licensed pharmacist and must have completed all required immunization and Basic Life Support (BLS) training at the time of elective start.

Restrictions: Graduate students must have this course approved by their graduate program director in order for this to count towards the program's elective requirement. Students are expected to take this course in the Summer, Fall and Winter quarters, in that order.

Activities: Clinical, Project

Elective graduate level course for clinically-trained, licensed Pharm.D. graduate students enrolled in a UCSF graduate program. Experience conducted in inpatient or outpatient setting. The student will be engaged in clinic service 0.5 -1 day per week over three sequential terms starting with Summer. The course utilizes experiential-based learning and encourages independent and inter-professional learning through integrating clinical practice with clinical teaching and/or research activities.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? Yes

PHARMGENOM 260E Advanced Experience in Clin Pharm & Pharmacology (1-3 Units) Fall, Winter, Spring, Summer

Instructor(s): Leslie Floren

Prerequisite(s): Graduate students must be a CA board licensed pharmacist and must have completed all required immunization and Basic Life Support (BLS) training at the time of elective start.

Restrictions: Graduate students must have this course approved by their graduate program director in order for this to count towards the program's elective requirement. Students must complete three quarters of either PSPG 260A, PSPG 260B, PSPG 260C, or PSPG 260D in order to enroll.

Activities: Clinical, Project

This is an elective graduate level course for clinically-trained, licensed Pharm.D. graduate students enrolled in a UCSF graduate program. Experience will be conducted in inpatient or outpatient setting. The student will be engaged in clinical service 0.5 -1 day per week. This optional course is taken after completing three quarters of either PSPG 260A, PSPG 260B, PSPG 260C, or PSPG 260D, if the student would like a full year of clinical service.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? No

Does enrollment in this course require instructor approval? Yes

Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

PHARMGENOM 266 Research Planning Conference (1 Units) Fall, Winter, Spring, Summer

Instructor(s): Staff

Prerequisite(s): Consent of instructor.

Restrictions: NA

Activities: Lecture

Discussion and practice in research problem formulation and design selection. Core classes and small group sessions are organized around students' interests by faculty within the area of specialization.

School: Graduate Division

Department: Pharmaceutical Science And Pharmacogenomics Prog

May the student choose the instructor for this course? Yes

Does enrollment in this course require instructor approval? No

Course Grading Convention: Letter Grade

Graduate Division course: Yes

Is this a web-based online course? No

Is this an Interprofessional Education (IPE) course? No

May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes

Repeat course for credit? No

PHARMGENOM 271 Advanced Pharmacokinetics in Clinical Drug Development (4 Units) Winter

Instructor(s): Leslie Benet
Prerequisite(s): Consent of instructor

Restrictions: None

Activities: Lecture, Workshop

Although significant time will be devoted to theoretical aspects of the various topics, the focus will be on practical examples (real data) in how to design and interpret pharmacokinetic studies for use as a component of the regulatory drug approval process.

School: Graduate Division
Department: Pharmaceutical Science And Pharmacogenomics Prog
May the student choose the instructor for this course? No
Does enrollment in this course require instructor approval? No
Course Grading Convention: Letter Grade
Graduate Division course: Yes
Is this a web-based online course? No
Is this an Interprofessional Education (IPE) course? No
May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes
Repeat course for credit? No

PHARMGENOM 297 Pharmaceutical Sciences and Pharmacogenomics Journal Club (1 Units) Fall, Winter, Spring

Instructor(s): Lani Wu, Jim Wells
Prerequisite(s): None

Restrictions: None

Activities: Seminar

Critical review of published scientific papers from scholarly journals including comprehension, analysis and evaluation of published scientific data.

School: Graduate Division
Department: Pharmaceutical Science And Pharmacogenomics Prog
May the student choose the instructor for this course? No
Does enrollment in this course require instructor approval? No
Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)
Graduate Division course: Yes
Is this a web-based online course? No
Is this an Interprofessional Education (IPE) course? No
May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes
Repeat course for credit? Yes

PHARMGENOM 311 Curricular Development and Academic Leadership (0.5-4 Units) Fall, Winter, Spring

Instructor(s): Su Guo
Prerequisite(s): none

Restrictions: PSPG students only

Activities: Seminar, Workshop, Lab skills, Discussion

The Curricular Development & Academic Leadership course will offer training and leadership to prepare graduate students in scientific leadership roles in the classroom and beyond. Students will have a hands-on approach to structuring and executing a curriculum. Students must submit an application prior to course enrollment.

School: Graduate Division
Department: Pharmaceutical Science And Pharmacogenomics Prog
May the student choose the instructor for this course? No
Does enrollment in this course require instructor approval? Yes
Course Grading Convention: P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)
Graduate Division course: Yes
Is this a web-based online course? No
Is this an Interprofessional Education (IPE) course? No
May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course? Yes
Repeat course for credit? No