



**UH Hilo - Daniel K Inouye College of Pharmacy**  
**Master of Science in Clinical Psychopharmacology Program Course Descriptions**

**PHPS 450 The Biochemical Basis of Therapeutics I - Biomolecules (3 credits)**

This course is designed to provide a basic foundation for the understanding of medical biochemistry, pharmacology, and the structure and function of various biomolecules. Basics of organic chemistry are included in this course. Topics will include structural and physical properties of proteins, nucleic acids (DNA and RNA), carbohydrates, lipids and their relationship to their biological function, fundamentals of signal transduction, and DNA replication and repair. Basic biochemical principles pertaining to neuroscience and neurochemistry are included in this course. These principles will provide the basic concepts for understanding the biochemical basis for disease states and drug action that are central to therapeutics.

**PHPS 451 The Biochemical Basis of Therapeutics II - Metabolism (3 credits)**

This course will delve into metabolism and the interrelationships of metabolic processes. The biochemistry of metabolism focuses on glycolysis, the tricarboxylic acid cycle, gluconeogenesis, and the synthesis and breakdown of biomolecules (carbohydrates, lipids, and amino acids). Metabolism of neurotransmitters, hormones and peptides are included in this course. Metabolic control and regulation of pathways will be emphasized. Clinical correlates and metabolic diseases will be discussed.

**PHPS 606 Human Physiology (3 credits)**

This course is designed to provide an in-depth overview of topics in human physiology that provide a basis for understanding of pharmacology. The course will begin with a review of basic physiological topics including the autonomic nervous, central nervous, and the cardiovascular systems. Following this will be an introduction to the discipline of pathology with an emphasis on diseases of the nervous system including basic neuroscience principles. This course will be comprised of recorded lectures, live workshops, and synchronous video chat sessions. There is also a requirement of a research paper on a topic of physiology chosen by the student with approval of the Course Coordinator.

### **PHPS 601 Integrated Pharmacotherapy I (7 credits)**

In this first of a series of three courses, pathophysiology, pharmacology, toxicology, and therapeutics will be integrated into one discipline that will examine pharmacotherapy based on organ systems of the body. The course will begin with a discussion of SOAP notes and an introduction to pharmaceutical principles. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment of specific disorders in disparate patients. Synchronous video chats will tie in the pharmacotherapy discussed in lecture with the treatment of CNS disorders. On-site workshops will occur at various times during the semester. During the semester, students will submit six SOAP notes on disease states discussed in class, and a research paper covering the current and future pharmacotherapy of a disease state selected by the student and approved by the Course Coordinator. The course will culminate with each student presenting their research paper. Topics include Information Resources, Dosage Form, Cardiac and Vascular disorders.

### **PHPS 602 Integrated Pharmacotherapy II (5 credits)**

This course is the second of a series of three courses. This course will begin with a discussion of pharmacoepidemiology and resources to obtain drug information. The major focus of this course will be a detailed coverage of the pathophysiology, pharmacology, toxicology, and therapeutics of CNS disorders that require pharmacotherapy. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment in disparate patients. On-site workshops will be provided at various times during the semester. During the semester students will submit five SOAP notes covering patients with both somatic and CNS related disorders. Students develop and reinforce their skills in differential diagnosis of CNS disorders. Synchronous video chats will be employed to relate the pharmacotherapy of somatic disorders with treatment of CNS disorders. A research paper covering the current and future pharmacotherapy of a CNS related disease state selected by the student and approved by the Course Coordinator. The course will culminate with each student presenting their research paper. Topics include Pharmacoepidemiology of mental and neurological disorders.

### **PHPS 603 Integrated Pharmacotherapy III (4 credits)**

In this third of a series of three courses, pathophysiology, pharmacology, toxicology, and therapeutics will be integrated into one discipline that will examine pharmacotherapy based on organ systems of the body. The course will include a discussion of SOAP notes and an introduction to pharmaceutical principles. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment of specific disorders in disparate patients. Synchronous video chats will tie in the pharmacotherapy discussed in lecture with the treatment of CNS disorders. On-site workshops will occur at various times during the semester. During the semester, students will submit four SOAP notes on disease states discussed in class, and a research paper covering the current and future pharmacotherapy of a disease state

selected by the student and approved by the Course Coordinator. The course will culminate with each student presenting their research paper. Topics include endocrine (e.g., thyroid, diabetes), thromboembolic and cerebrovascular disorders.

### **PHPS 604 Advanced Psychopharmacology I (2 credits)**

This course serves as the first of two capstone courses that will provide an in-depth coverage of psychopharmacology associated with the treatment of mental disorders. Students learn to integrate biopsychosocial and medical models to patient care in addition to applying pharmacologic assessment and monitoring concepts to their clinical practice. Students will present patient cases in weekly seminars that are based on patients seen in clinical settings from the **Psychopharmacology Practicum** courses taught concurrently. This course will require students to demonstrate competence in medication therapy management specific to psychopathology. In addition recent literature will be discussed that covers synergistic interactions between psychotherapy and pharmacotherapy and will examine the single practitioner vs. the split-treatment model.

### **PHPS 605 Advanced Psychopharmacology II (2 credits)**

This course serves as the second of two capstone courses that will provide an in-depth coverage of psychopharmacology associated with the treatment of mental disorders. Students continue to hone their skills in integrating biopsychosocial and medical models to patient care and applying pharmacologic assessment and monitoring concepts to their clinical practice. Students will present patient cases in weekly seminars that are based on patients seen in clinical settings from the **Psychopharmacology Practicum** courses taught concurrently. This course will require students to demonstrate competence in medication therapy management specific to psychopathology. In addition current and future pharmacotherapy of CNS disorders will be discussed: including methodology, standards and conduct of research of psychoactive substances. Drugs classes to be covered include: antipsychotics, antidepressants, mood stabilizers, anti-anxiety agents, sedative/hypnotic agents, narcotic analgesics, drugs used to treat the cognitive and behavioral effects of Alzheimer's disease, and drugs used to treat ADHD.

### **PHPS 607 Psychopharmacology Practicum (2 credits total)**

Students will participate in a psychopharmacology practicum for eight hours per week for at least one-year. The total amount of hours per year is at least 400 hours. They will be supervised by a qualified clinical practitioner with demonstrated skills and experience in clinical psychopharmacology in accordance with the prevailing jurisdictional law. Clinical supervision will be for one hour per week or one hour per eight hours of patient contact. Students will be actively involved in consultation with physicians and/or appropriately credentialed psychologists regarding the prescribing of psychoactive medications. The Clinical Psychopharmacology Practicum components

will be consistent with APA Recommendations. The Psycho-pharmacology Practicum courses will require students to demonstrate competence in medication therapy management specific to psychopathology. Students will present cases from this practicum in the Advanced Psychopharmacology I and II courses taught concurrently. At the end of the training program, a capstone competency evaluation will be completed. Students will need to arrange their own practicum according to the guidelines listed in the course syllabus.

### **PHPS 608 Law & Psychopharmacology (2 credits)**

In this course, pathophysiology, pharmacology, toxicology, therapeutics will be integrated into one discipline that will examine pharmacotherapy based on infectious diseases and the respiratory system. This course also will focus on the parameters by which prescribing psychology is practiced lawfully. This course provides background in professional, legal, standards of care, regulatory and ethical issues. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment of specific disorders in disparate patients. Synchronous video chats will tie in the pharmacotherapy discussed in lecture with the treatment of CNS disorders. Students will submit one SOAP note on a disease state discussed in class, and a written assignment on a regulatory or legal issue pertaining to psychotropic medications. The course will culminate with each student presenting the results of their assignment.

### **PHPS 609 Clinical Psychopharmacology Practicum (1 credit):**

Students will participate in a psychopharmacology practicum for four to eight hours per week for at least one-year. PHPS 609 constitutes the final semester of practicum training. Students will be supervised by a qualified clinical practitioner with demonstrated skills and experience in clinical psychopharmacology in accordance with the prevailing jurisdictional law. Clinical supervision will be for one hour per week or one hour per eight hours of patient contact. Students will be actively involved in consultation with physicians and/or appropriately credentialed psychologists regarding the prescribing of psychoactive medications. The Psychopharmacology Practicum course will require students to demonstrate competence in medication therapy management specific to psychopathology. Students will present cases from this practicum in the Advanced Psychopharmacology I and II courses taught concurrently. At the end of the training program, a capstone competency evaluation will be completed. Students will need to arrange their own practicum according to the guidelines listed in the course syllabus.