Wayne State University  
Eugene Applebaum College of Pharmacy and Health Sciences  
Doctor of Pharmacy Program: Didactic Electives  
Description of Approved Didactic Electives 2019-20

PPR 6740 Ambulatory Care Pharmacy Practice (2 credits)  
Coordinator: Amber Lanae Martirosov (Smith), Pharm.D., BCACP  
Offered in Winter Semester

This is an elective course for ‘Advanced Topics in Ambulatory Care Pharmacy’. This course will build on the disease-state knowledge acquired in the Pharmacotherapy courses. The overall goal of this course is to increase students’ knowledge of practice models for pharmacist-delivered patient care services, career opportunities in ambulatory care pharmacy practice, and disease states commonly managed by ambulatory care pharmacists. This course incorporates principles of student self-directed learning, literature discussion and evaluation, and interprofessional exposure. Students will also advance their knowledge in the areas of health care delivery systems (new models of care), practice management (principles of planning, organizing, directing, and controlling pharmacy resources) and pharmacy practice and pharmacist-provided patient care (principles of pharmacist-managed, patient-centered care).

PPR 6580 Anticoagulation Management (2 credits)  
Co-Coordinator: Candice Garwood, Pharm.D., BCPS, BCACP, and Maureen Smythe, Pharm.D.  
Offered in Fall Semester

This elective course will build on the foundation of anticoagulation knowledge introduced in the Cardiology Therapeutics Module taught in the second year of the pharmacy curriculum. Pharmacists often have a lead role in managing anticoagulation in various practice settings. This interactive, discussion based course will allow students to develop advanced knowledge in the area of anticoagulation and practical skills in anticoagulation management in both the inpatient and outpatient setting. Unique aspects planned for this course include: presentation of practice-based cases and therapeutic controversies, interactive therapeutic debates, anticoagulation practice site visits, a field trip and the opportunity to “live and learn” whereby the students get to experience first hand the challenges of living on anticoagulation.

PPR 6520 Contemporary Issues in Nutrition Support (2 credits)  
Co-Coordinator: Pram Kale, Pharm.D. and Sheila Wilhelm, Pharm.D., BCPS  
Offered in Spring Semester

Several topics which will be covered in this new course include the use of nutrition support in specialized populations, the evaluation of fad diets, celiac disease, and review of current topics such as the nutritional consequences of eating disorders or gastric bypass surgery, among others. These topics will build upon what is currently taught in the required curriculum. Students enrolled in this course will be active participants which may include presenting topics and journal clubs, and working through patient cases.
PPR 6760 Critical Care Pharmacy Elective (2 credits)
Coordinator: Alex Chaben, Pharm.D., BCCCP
Offered in Winter Semester
This course is designed to meet the needs of students with an interest in further developing their knowledge base in common acute diseases encountered in the intensive care unit and emergency department by utilizing patient cases. The format will consist of a discussion of the disease and drug therapy using case presentation(s) by faculty, guest lecturers, and class participation, and flipped classroom teaching methods. These sessions will focus on choice and rationale for therapy, dosing and disease state guidelines, and monitoring parameters for assessment of efficacy, safety, and toxicity.

PPR 6560 Foundations in Global Health (2 credits)
Co-Coordinators: Helen Berlie, Pharm.D., BCACP, and Paul Kilgore, M.D., MPH
Offered in Fall Semester
This course will introduce students to the world of global health and equip students with an understanding of the foundations and principles underlying global health. This course will bring state-of-the-art content from a variety of experts across multiple disciplines critical to successful global health programs. This course will also provide practical experience for students in the engagement of non-governmental organizations (NGOs) working in the field of global health. This course will also provide students with background information that will orient students to future global health work and prepare them for success while working in resource-limited settings.

PSC 6970 Pharmaceutical Waste: Environmental Impact and Management (2 credits)
Coordinator: Dave Pitts, Ph.D.
Offered in Spring semester
Pharmaceuticals and personal care products (PPCPs) have recently been found in surface and ground water as contaminants. Our wastewater treatment plants are not designed to remove these chemicals. PPCPs are considered to be one of many different kinds of the emerging chemical contaminants recently discovered in our water supply. The course covers the issue of emerging contaminants from the perspective of pharmaceutical sciences, environmental engineering, aquatic ecology, and environmental law and policy, and includes a tour of wastewater and drinking water treatment plants. This course is designed for advanced professional students (pharmacy students who have completed their 2nd year, and students in medicine, other health sciences) and graduate students (chem/bio background) interested in the environmental impact, management & regulation of waste pharmaceuticals as emerging contaminants.

PHA 5110 Pharmacogenomics (2 credits)
Coordinator: Kyle Burghardt, Pharm.D.
Offered in Spring Semester
Principles and applications of human genetics and genomics in drug therapy optimization, patient care, and counseling. Topics include: introduction to pharmacogenomics, history, role of personalized medicine in clinical practice, genes and human genetics, gene expression, mutations, SNPs, origins of genetic diversity, haplotypes, linkage disequilibrium, genotyping technologies, and socioeconomic issues. The following therapeutic applications of pharmacogenomics principles will also be emphasized: important data bases (PharmGKB, DrugBank, OMIM, etc.), PK/PD drug
properties and adverse drug reactions. Specific therapeutic areas will include: diabetes, psychiatry, pain and anesthesia, anticoagulation therapy, cardiovascular agents, pediatric/fetal/neonatal practice, oncology, and antimicrobial therapy.

**PPR 6720 Pharmacotherapeutics of Diabetes Mellitus (2 credits)**
Co-Coordinators: Helen Berlie, Pharm.D., BCACP, and Linda Jaber, Pharm.D.
**Prerequisite:** PHA 5165
**Offered in Winter Semester**
This is an advanced elective course in the management of diabetes mellitus and its related disorders. This course will build on the diabetes knowledge acquired in the Endocrine Module. The overall goal of this course is to develop the student’s knowledge and skills required to deliver patient-specific pharmacotherapy and self-management education to patients with diabetes. This course incorporates principles of student directed learning, literature discussion and evaluation, and interprofessional exposure. Students will also participate in patient case presentations, small group learning, and hands-on activities such as insulin dosing and a “living with diabetes” project and potluck.

**PPR 6590 Principles of Pain Management (2 credits)**
Co-Coordinators: Victoria Tutag-Lehr, Pharm.D.
**Offered in Spring Semester**
This elective course is designed to cover core clinical sciences beyond the required pharmacotherapy modules on pain management topics. This class will be conducted primarily in a seminar format. The course will expand on the pathophysiology, pharmacology, and therapeutics covered in the core clinical sciences courses to assist the student pharmacist in developing assessment skills emphasizing inter-professional collaboration. **Prerequisite:** PHA 5225

**PPR 6550 Psychiatric Pharmacy (2 credits)**
Coordinator: Opal Bacon, Pharm.D.
**Offered in Spring Semester**
This course is an elective designed to cover core clinical sciences beyond the required pharmacotherapy modules on psychiatric topics. This course will expand on the pathophysiology, pharmacology, and therapeutics covered in the core clinical sciences courses and develop assessment skills relevant to practicing pharmacists.

**PSC 5600 Recreational Drug Use and Drug Abuse (2 credits)**
Coordinator: Randall L. Commissaris, Ph.D.
**Offered in Winter Semester**
This course will focus on recreational drug use and drug abuse with sessions provided by Dr. Commissaris as well as guest speakers. Students will be involved in a drug legalization debate, one individual student paper/presentations as well as group projects in media-based drug abuse prevention. Topics will include: drug testing in the workplace, opiate pharmacology review/update, ethanol pharmacology review/update, cocaine and the dopamine hypothesis of reward, chronic methamphetamine treatment effects, alcohol blackouts, club drugs, steroids and other performance enhancers. Students will also be exposed to a driving simulator for a hands-on approach to learning about alcohol drugs and driving. Additional topics include: MPA perspective on drug abuse, forensic toxicology and drug abuse, prevention programs and Practitioner in Recovery.
PPR 6320 Underserved Care: Local & Global Experiences
Coordinator: Helen Berlie, Pharm.D., BCACP
Offered in Spring/Summer or Fall semester, as opportunities are available
This course provides the opportunity for hands-on service learning both locally and internationally. Students will provide pharmaceutical care during a medical/dental relief trip as opportunities are available. Students will primarily work with physicians and/or dentists as well as other professionals and students in the healthcare field to provide care to local underserved populations. They will be partnered with a local non-governmental organization as well as local healthcare professionals to learn about the various approaches and barriers to healthcare in a developing country. Local volunteering provided to underserved patient populations is also a component of this elective, as well as projects, reflections and presentations upon return from the experience. This experienced is limited to a small number of students and requires an application process.

PPR 7225 Vaccines in Clinical and Public Health Practice (2 credits)
Coordinator: Paul Kilgore, M.D., MPH
Offered in Spring Semester
This course introduces students to principles of vaccine development, rationale for vaccine usage, and opportunities for use of vaccines in clinical and public health practice. Specific vaccines used in the United States and other countries are reviewed in terms of the target disease for prevention, evidence for use of vaccines in routine clinical and public health practice, target populations for uptake of the vaccine and potential barriers to use of vaccines in the United States and other countries.

PSC 6200: Veterinary Pharmacology (2 credits)
Offered in Winter Semester
This course will provide an overview of veterinary pharmacology that offers a review of the chemical structure, mechanism of action, indications for use, and side effects of therapeutics, while also building your understanding of the role of pharmacists and scientists in One Health, and providing service to veterinary species. Topics will include: important anatomic and physiologic differences between species, comparative toxicology, applicable laws and regulations, common diseases and conditions of veterinary species, medications and supplements commonly used in veterinary medicine.